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Stabilization policy before Keynes

Arapoglou, Iakovos K., Ph.D.

City University of New York, 1989

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STABILIZATION POLICY BEFORE KEYNES

by

IAKOVOS K. ARAPOGLOU

A dissertation submitted to the Graduate Faculty in Economics in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

1989

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Abstract

STABILIZATION POLICY BEFORE KEYNES

by

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In 1936 Keynes put forward his view of what he called "classical" economics. His synopsis of the "classical" theory is found in Chapter 2 of his General Theory. In it Keynes has argued that the work of A.C. Pigou is "the only detailed account of the classical theory of employment which exists". He went on to add that "the fundamental theory underlying [the determination of actual employment] has been deemed so simple and obvious that it has received, at the most, a bare mention."

In all of the above, and more, Keynes was wrong. Yet, somehow, his interpretation of "classical" economics has become "conventional wisdom". What follows is an attempt to set the record straight. We focus on the work of A. C. Pigou, the leading exponent, by Keynes' own admission, of the classical theory. More concretely we shall attempt to present Pigou's ideas in a systematic way, drawing on his twin great works The Theory of Unemployment (1933) and, more importantly, Industrial Fluctuations (1929).

In a broader sense, however, this essay is about economists

and economic policy. It is about the economist's inveterate habit of telling his fellow citizens how best to achieve their ideals of an economically just and efficient society. It is about the contribution made by economists to the debate of the late 1920's and the 1930's concerning the great economic issues of that time: unemployment and stagnation, deflation and stability, the viability and desirability of the international economic order. Hence the need to look more carefully at the evolution of Keynes' thought and to examine, to some considerable extent, the doctrines and theories of the LSE "neo-individualists".

The essay concludes that, after everything else has been said, it remains true that the conventional account of "classical" economics, handed down to the present generation of economists by Keynes and his disciples, is, for the most part, fiction and that there has never taken place a "Keynesian Revolution" in economic theory and policy in the sense that this term is ordinarily understood.

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INTRODUCTION

This essay is about economists and economic policy. It is about the economist's inveterate habit of telling his fellow citizens how best to achieve their ideals of an economically just and efficient society. It is about the contribution made by economists to the debate of the late 1920's and the 1930's concerning the great economic issues of that time: unemployment and stagnation, deflation and stability, the viability and desirability of the international economic order. It is by no means, however, an attempt to record, let alone evaluate, the "progress" of every aspect of economic analysis and its implications for public policy. Rather it deals primarily with economists' attitudes toward what is now known as stabilization policy, i.e. with the deliberate management of certain aspects of economic activity by the government, or some other authority, with the explicit purpose of reducing fluctuations in aggregate income and employment. Nor does this essay pretend to be comprehensive in the sense of covering the views of every major economist. The most which can be claimed for it is that it considers the views of some some well-known economists who, at the time, lived and worked in Britain. This, of course, is not an accident. Rather there are several reasons for it. To begin with, there is no language barrier. For it is astonishing that, after so many claims have been made on behalf of the

"Swedish" school for its independent discovery of Keynes' message¹, much of this work still remains beyond the reach of the English-speaking student.² Besides being readily accessible, the debate in Britain was more than a highly abstract squabble between academicians. For whatever reasons, British economists were more willing than, say, continental economists to participate in public discussions and to commit themselves to specific policies; or, to put it slightly differently, they were less reluctant to blemish their academic "purity" with the advocacy of practical measures when they felt that such measures were warranted by "scientific" analysis. To reinforce their attitude there was the economic situation highly peculiar to Britain throughout most of the 1920's. For it was then that, for the first time in British history, unemployment on a massive scale persisted for so long a period of time.³ Considering the social climate in England chronic, large-scale unemployment could scarcely be overlooked by the public; more importantly it was not ignored by economists. It provided the impetus for renewed discussions on the nature of the business cycle⁴ and, according to some, it supplied the fuel which put Keynes on his way to the "discovery" of the General Theory.⁵

This last point is, I think, of particular importance. For I should state at once that my own interest in this area stems, largely, from a curiosity which I developed in my early years as a graduate student about "classical" economics. I

was greatly puzzled by the prospect that anyone could have taken seriously the static "classical" model⁶ as a description of the workings of our economic system. The first blow at my confident conviction that the model was virtually useless came when, during a discussion, one of my teachers pointed out that "classical" economists were perfectly aware of "frictional" unemployment and that its existence was in no way inconsistent with "classical" analysis. Once this most naive interpretation of mine had been shattered it was almost inescapable that I would pursue a more serious investigation into the nature and properties of the "classical" system. And what better way to do this than to explore the views about the economy and economic policy held by orthodox economists at a time and place where persistent massive unemployment was thought to be the most conspicuous social problem?

Once this question is asked, it is not difficult to realize the paradox which is involved in the notion of a macroeconomic model that assumes away unemployment and maintains that the level of output is not affected by fiscal and/or monetary policies of the ordinary "Keynesian" variety. For, in fact, it would be an extraordinary feat for anybody in their right minds, including economists, to preach that the normal state of affairs should be identified with automatic adjustment and full employment when, for almost 10 years, the most noticeable feature of the economic system was the extreme intractability of money costs, (chiefly money wage) and the

continued existence of more than one million unemployed. The apparent paradox must have been felt even by Keynes, who suggested that the "classical" system should be interpreted as a normative ideal, i.e. as the way the economy ought to work.⁷ More recently, however, a number of economists have offered a different answer. One such attempt to supply an alternative explanation is found in Blaug, who suggested that

the historical significance of Keynes is not that he advocated anything new in the way of economic policies but that he provided a coherent theory to justify the policy measures which orthodox economists also advocated but only as special measures given the circumstances of the time.⁸

A similar and, in a certain sense, more powerful view is expressed by Patinkin who argues that

[i]n any event the examples of Simons, Pigou, and others have led me to suspect that the real Keynesian Revolution took place not in the sphere of economic policy [where changes were already occurring in the early 1930's] but in that of economic theory. I suspect that the real change wrought by Keynes' General Theory was in the conceptual framework from which we viewed the problems of employment, interests and money."⁹

Howson and Winch, on the other hand, adopt a substantially different and, it seems to me, more appealing position. "It is clear [they say], that [the notion of a pre-Keynesian orthodoxy on policy matters] ... is not a mythical beast so

far as most businessmen, bankers, civil servants, and political leaders are concerned." However "whether or not there was [such] orthodoxy within the economics profession" is not beyond doubt.¹⁰ Furthermore, they argue, it is not true that the policy views of Keynes were the same with those of other economists.

My own study has led me to reject sweeping arguments which, like Patinkin's and Blaug's, tend to disregard the differences between the policy suggestions of "orthodox" economists and those of Keynes. In this respect my conclusions stand closer to those of Howson and Winch; yet they are still different in that, as I now think, these authors fail to grasp and adequately emphasize the genuinely novel element in Keynes' policy thinking. In fact, few people ever do. The reason for this is to be found, I believe, in the reluctance to distinguish clearly between Keynes' own theoretical framework and Hicks' attempt to popularize it.¹¹ There can be little doubt that the IS-LM apparatus has been a very successful means of propagating some elements of Keynes' thought. Yet its apparent simplicity is also a source of weakness in that its mechanical application may result in serious theoretical errors.¹² One should add that the extensive use of the IS-LM analysis, while helpful in much theoretical work, has been responsible for the failure to recognize the policy implications of Keynes' economic theories. For it can hardly be maintained that the

conventional IS-LM apparatus captures the policy suggestions of the man who thought it necessary to pronounce, in the epilogue of his magnum opus, that

it seems unlikely that the influence of banking policy on the rate of interest will be sufficient by itself to determine an optimum rate of investment. I conceive, therefore, that a somewhat comprehensive socialisation of investment will prove the only means of securing an approximation to full employment.¹³

Nor is this passage from the General Theory one of relative insignificance; the evidence reveals that such a position was held by Keynes, with equal force and conviction, since at least 1932. In fact, the only puzzle is, why would people so consistently and for so long overlook the policy aspects of Keynes' theoretical analysis?

To suggest, however, that Keynes' policy recommendations were drastically different from those of his more "orthodox" colleagues is by no means to revert to the acceptance of the standard textbook exposition as representative of "classical" thought. This brings me to another, perhaps more important piece of evidence which this essay is intended to bring to the fore. It has already been mentioned that the prevailing story - responsibility for which can largely be attributed to the Keynes of the General Theory - has it that, to "classical" economists, full employment and the automatic adjustment of the economic system were the norm; anything which did not

conform to this "normal" state of affairs was somehow of small practical importance and could, for purposes of analysis, be ignored. To be sure it is recognized that the "classical" economist is a mythical scholar and that, probably, no single economist has ever held with equal conviction all the views inherent in the typical textbook representation of "classical" thinking.¹⁴ But few people would disagree that, on the whole, the stationary model constitutes a fair representation of "classical" economic thought. Now, even though I doubt whether Keynes' account is anything beyond fiction, I can not advance this argument with complete confidence for the years prior to 1925. But if, as seems fairly clear, Keynes' story is intended to mean that, up to 1936, the thought and policy suggestions of academic economists were dominated by "classical" reasoning (as this reasoning is expounded in the General Theory) this is simply not borne out by the facts. It is my hope that this essay will make clear that, to the extent that the "classical" model was, in fact, used by economists, such use as was made of it did not imply either its acceptance as a means of positive analysis, i.e. of how the system actually works, or even its endorsement as a normative ideal, i.e. as a guide about how the system ought to operate. In sharp opposition to Keynes' story, the evidence suggests that orthodox economists in the 1920's and the 1930's were painfully aware of the existence of the business cycle as being of the very essence of capitalist

economies. Nor is it true that they were content to merely note its presence and then fall back on static equilibrium analysis. Some of the most prominent economists devoted their best energies to developing theories of the business cycle, i.e. explanations of the regular recurrence of prosperity and depression.¹⁵ It is my conviction, after studying some of their diatribes, that orthodox economists were in possession of, if anything, more complete theories of the cycle than was Keynes. Nor does the evidence point in a different direction for the period after 1930. Economists were perfectly aware - indeed, how could it be otherwise? - that the international economic system was caught in the midst of a depression quite unique in both its persistence and severity; their awareness was reflected in their preoccupation with, and their support for, a wide variety of policy suggestions some of which clearly anticipated conventional stabilization policies of our own day.

Now it may be true that to some people any reasonable explanation of the Great Depression must somehow be advanced along "Keynesian" lines; for, it is argued, the breakdown of the 1930's can hardly be attributed to anything but deficient aggregate demand. Such a simplistic argument, however, not only fails to appreciate Keynes' theoretical schemata but, equally, ignores the analytic contributions of orthodox economists. To suggest that it was Keynes alone who recognized the importance of deficient aggregate demand is

hardly acceptable; no economist of repute had the slightest hesitation that it was the inadequacy of total spending which was to be blamed for the plight of the international economy. Where economists differed was in their explanation of inadequate spending. And I should hasten to add that, in this respect, it is at least odd for those economists who have come to accept Friedman's explanation of the Great Depression to suggest that "there is no inherent conflict between the Keynesian and monetarist explanation of the Great Depression"¹⁶ - unless, of course, by Keynesian is not meant the economics of Keynes but rather those of Hicks. It is either Keynes' explanation or Friedman's but it cannot be both. For, if one follows Keynes, the Great Depression was primarily the result of profound historical tendencies, of deep-seated structural weaknesses of the economic system. The solution rather than provided by the "vigorous use of countercyclical fiscal policy" was to be found in the fundamental reconstruction of the economic system along collectivist lines. I venture to suggest that Keynes' explanation of the Great Depression was almost certainly unique; but it was by no means the only one, not even, at least to me, the most convincing. There were others; some of these bore policy implications which were strongly reminiscent of current countercyclical policies. Some, however, were of a much broader scope and, in a sense, foreshadowed Friedman's later hypothesis in that they brought to the fore the fundamental incompatibility between massive

government intervention in the economy and the spirit of capitalism.

NOTES

1. Don Patinkin, Anticipations of the General Theory (The University of Chicago Press, Chicago, 1982), pp. 36-57.
2. *ibid.*, pp. x-xi.
3. B.R. Mitchell and P. Deane, Abstract of British Historical Statistics (Cambridge University Press, Cambridge, 1962), p.67.
4. Patinkin, *op. cit.*, p.5.
5. *ibid.*, p.5.
6. Thomas Sargent, Macroeconomic Theory (Academic Press, New York, 1979), pp.6-45.
7. John Maynard Keynes, The General Theory of Employment, Interest and Money (Harcourt Brace Jovanovich, New York, 1964), p.34.
8. Mark Blaug, The Cambridge Revolution (Cambridge University Press, Cambridge, 1974), p.73.
9. Patinkin, *op. cit.*, pp.168-169.
10. Susan Howson and Donald Winch, The Economic Advisory Council 1930-1939 (Cambridge University Press, Cambridge, 1977), p.162.
11. J.R. Hicks, "Mr. Keynes and the 'Classics': A Suggested Interpretation" in Readings in the Theory of Income Distribution (Blakiston, Philadelphia, 1946), pp.461-476.
12. See, for instance, Axel Leijonhufvud, On Keynesian Economics and the Economics of Keynes (Oxford University Press, New York, 1968), pp.30-31.
13. Keynes, *op. cit.*, p.378.
14. Gardner Ackley, Macroeconomics: Theory and Policy (MacMillan, New York, 1978), pp.82-84.

15. See, for instance, A.C. Pigou, Industrial Fluctuations (Augustus M. Kelley, New York, 1967) and F.A. Hayek, Monetary Theory and the Trade Cycle (Augustus M. Kelley, Clifton, 1975) and Prices and Production (MacMillan, London, 1935).
16. Rudiger Dornbusch and Stanley Fischer, Macroeconomics (McGraw-Hill, New York, 1987), p.547.

CHAPTER I
THE RETURN TO THE GOLD STANDARD

Keynes' first reaction

The year 1925 saw Britain's return to the gold standard at prewar parity. Keynes criticized the decision to return to gold on the grounds that an overvalued pound would intensify the already grave difficulties of the British export industries. Keynes publicized his views beginning with an article that he wrote in October 1925 entitled "The Economic Consequences of Mr. Churchill". But what exactly were his views and how much they differed from those of the advocates of the return to gold has seldom been seriously considered. According to Lord Bradbury, the members of the Chamberlain-Bradbury Committee were well aware that linking the pound to gold at the prewar parity would impose an additional burden to the British export industries.¹ For not only was it plain that "we [Britain] have lost our monopoly position as manufacturers" but, equally, that the overvaluation of the pound would, through foreign competition, result in lower prices for British exports. In the estimation of the Committee, however, this unavoidable fall in the prices of British staples (coal, iron, steel, textiles) would be swiftly followed by equiproportional reductions in the prices of other goods and, most importantly, productive factors. This is where Keynes parted company with the Committee. For, he

argued, it is precisely the money costs of production and, in particular, the price of labor, which are sticky and, hence, capable of resisting downward pressure for a prolonged period of time. Thus overvaluation, according to Keynes, so far from resulting in deflation and a new equilibrium with full employment would involve a protracted period of social strife, unemployment and stagnation.²

One, however, should be careful not to overstress the difference of opinion between Keynes and the Committee. For, throughout 1926-27, Keynes was convinced that the British economy was caught in a depression which was perhaps the outcome of perverse policies on the part of the Treasury and, in this sense, quite unnecessary and yet, all the same, it was just an ordinary downward swing which, sooner rather than later, would come to an end. This does not mean, of course, that at the time Keynes was a loyal adherent of laissez faire. Quite the contrary. He, as early as 1926, advocated far-reaching economic reforms which would entail the reorganization of basic industries along the direction of planning and centralized control.³ He also supported the regulation of the labor market by the government with the intent of reducing what is now called the rate of "frictional" unemployment. All this is, however, beside the point. The important thing to observe in this context is that the unemployment and social conflict which, as predicted by Keynes, followed Britain's return to gold did not, in any way,

cause him to propose any drastic policy action to stabilize the economy. In particular Keynes did not suggest increased public expenditure as the desired remedy; instead he was content to point to the continued weakness of the economy and complain about the Bank of England's policy of deflation which "has been severe enough to aggravate unemployment ... but not severe enough to end the period of transition or to effect the more difficult adjustments."⁴ It is true that Keynes protested at Sir Worthington-Evans' criticism and contended that he had advocated public works as an effective solution to unemployment as early as 1925.⁵ Yet the evidence is quite clear that throughout the period from October 1925 to July 1928 Keynes was by no means prepared to publicly commit himself to a policy of fiscal expansion as a palliative to unemployment. Now, one is tempted to ask, why would this be so? I think it can hardly be disputed that had Keynes convinced himself that increased doses of public expenditure were, in fact, the answer to the slump he would have said so outright in exactly the same way he did a few years later. The reason why Keynes was, in contrast to his usual style, reticent about policy measures should be sought, I think, in that he did not know or, at any rate, wasn't sure of the way out of the slump. Again he must have thought that the celebrated downward stickiness of money costs of production, albeit quite considerable, could not have lasted indefinitely and that, after some time of unemployment, the "more difficult

adjustments" would finally be effected.

Yet with the passage of time it began to dawn on him that high unemployment figures might be more than just a transitory phenomenon. Keynes made his suspicion clear in a letter he wrote to Lloyd George summarizing the economic prospects of 1928. The letter was essentially a response to a forecast made by Jules Manken, an economist on the Liberal Industrial Inquiry Staff; it concluded with the gloomy prediction that he (i.e. Keynes) "should expect the average of 1928 to be a little better than the average of 1927 but [he was] not prepared to go further than that."⁶ A few months later Keynes felt enough confidence to publicly suggest a fiscal expansion as part of a policy package which ought to be implemented "if we really want to reduce unemployment." Specifically Keynes suggested that "every public department and every local authority should be encouraged and helped to go forward with all good projects for capital expansion which they have ready or can prepare." And, in what apparently was an attempt to forestall criticism along the lines of the "Treasury view", i.e. what in modern terminology is called the crowding-out argument, Keynes went to add that

when we have unemployed plant and more savings than we are using at home, it is utterly imbecile to say that we cannot afford these things.... To have labor and cement and steel and machinery and transport lying by, and to say that you cannot afford to embark on harbour works or whatever it may be is the delirium of mental confusion.⁷

Thus by July 1928 Keynes was taking the first decisive step in the direction of the General Theory.

Some Observations on Pigou's Theory of the Cycle

Might it be true that Keynes' advocacy of public expenditure as a way out of the recession was something new under the sun? Could it be that Keynes was the first to realize the effectiveness of increased government spending as a palliative for unemployment? Here is what Keynes himself had to say on this:

For several years past these policies have not lacked powerful advocates who have some claim to wisdom and experience - Mr. McKenna, Lord Melchett, Sir Josiah Stamp, for example, amongst business authorities, Mr. Lloyd George and Lord Beaverbrook amongst public men and many economists and journalists.

Keynes was right. Perhaps the most instructive example in this respect is afforded by Pigou. Pigou put forward most of what he had to say about the cycle, unemployment and stabilization policy in a book of his, published in 1928 under the title Industrial Fluctuations. In it the author left little doubt as to how important he felt industrial fluctuations to be for capitalistic economies:

If the life of industry was steady and continuous, the rates of movement and the volumes of the streams

(of goods and services) would always be the same; or, more exactly ... they would change gradually in proportion as population changed.... In actual life, however, there is not this kind of steadiness. On the contrary, the modern world is characterized by large and frequent industrial fluctuations.⁸

Furthermore, he went on to add,

"the present volume will be confined to a study of those industrial fluctuations ... which are sometimes called 'cyclical' ... the consequences that follow from them and the means available for obviating or mitigating whatever in these circumstances is inimical to social well-being".⁹

It seems fair to say on the basis of the above, that those who identify "classical" economic thought with the textbook stationary model must have a rather peculiar understanding of "classical" theory.

As regards the causes of cyclical fluctuations Pigou stated forthrightly that "the proximate causes behind cyclical industrial fluctuations can only be ... variations in the real demand schedule of labour." He thought that it was reasonable to suppose that the supply schedule of labor was upward-sloping, i.e., that higher real wages bring forth increases in the quantity of labor supplied. Is Pigou's exposition of the labor market consistent with "involuntary" unemployment? At the risk of anticipating later discussion I should state that the answer is wholly in the affirmative. For Pigou was perfectly aware that "in the bulk of modern industry ... the

status of workpeople ... leads to the adoption of policies" which embody a wage system of considerable rigidity"; and there can be little doubt, according to Pigou, that "such wage rigidity has a more important bearing on industrial fluctuations than popular arguments suggest."¹⁰ Nor is this the end of the story: Pigou went further to emphasize "the part played by imperfect mobility of labour." Under the "considerable degree of rigidity" of money wages downward swings of aggregate demand may prove more damaging to employment if labour is not, than if it is perfectly mobile. For, to the extent that demand may be expanding in some industries, there will be some vacancies there which, if labor were perfectly mobile, could be filled from among the masses of the unemployed. If, on the other hand, there is a general deficiency of demand then employment in industries in which demand falls least might be increased, thus again supplying jobs for idle men.¹¹ Again, in view of the above, it is hardly surprising that Pigou's policy suggestions, in spite of a widespread conviction to the contrary, would forcefully anticipate current countercyclical policies. But this is running ahead of our story. At this juncture it may be more important to recognize that the Pigovian theory of the cycle made expectations of yield on industrial spending the "dominant causal factor", behind changes in the real demand for labour. When such expectations are rosy they induce business men to increase their borrowings thus putting upward

pressure on the rate of interest and similarly, by increasing velocity, causing prices to rise. When expectations are bleak they lead to converse effects. Pigou's conclusion is therefore that expectations of yield "constitute the immediate and direct causes or antecedents of industrial fluctuations."¹² The interesting part would be, of course, to establish "the causes behind changes in the expectations of business men." Pigou's answer involves a general classification which includes "real causes, psychological causes and autonomous monetary causes."¹³ After a lengthy examination of the principal real causes underlying aggregate changes of expectation from both the theoretical and the empirical point of view, Pigou concludes that large, epoch-making inventions such as railways and the automobile could be very important and harvest variations are definitely so as ultimate causes of industrial fluctuations. Nor is the impact of a major war, such as the one of 1914-18, to be ignored for the Great War has "brought about an upheaval in industry enormously greater than anything ever experienced before."¹⁴

Equally important as a source of variations in entrepreneurial expectations are psychological causes. These consist of sudden changes in the spirits of persons whose strategic location enables them to control industry. Such changes give rise to errors of undue optimism or undue pessimism in entrepreneurs' business forecasts. In fact, Pigou's intense preoccupation with psychological errors as one

of the factors responsible for wide swings in industrial activity led him to a sweeping criticism of the organization of investment markets. In his words:

Most members of the general public, from whom the funds for [joint-stock companies] ultimately come, are if left to their own devices, quite incapable of giving any reasoned opinion upon the various propositions that are, on different occasions, put before them.... The damaging effect of this unregulated action ... is the greater because the short-period prospects, in which promoters are interested, may easily be much rosier than the ultimate prospects; and it may, therefore, be to the advantage of these experts deliberately to mislead their clientele.¹⁵

Now anybody even vaguely familiar with the General Theory will have little difficulty to recognize that Pigou's exposition forcefully anticipates Keynes' later criticism of the precariousness of the modern investment market with its emphasis on liquidity. Nor is the similarity exclusively confined to both men's harsh treatment of investment markets; for it is well known that for Keynes too instability due to speculation, can account for the exaggerated character of the slumps of the modern era.¹⁶ Such fundamental analytic similarity, however, is not reflected, at least in this particular instance, in any kind of consensus about the practical ways in which to deal with the problem. This lack of agreement about policy measures should be rather instructive to those who, in their sincere attempt to elevate

economics into the state of a "neutral" science, disregard the role played by personality and ideology whenever economists attempt to go beyond diagnosis and offer a guideline for positive action. For whereas to Pigou the solution was hopefully to be found in that "the general public ... will (finally) avail themselves ... of the consultation and advice, and not merely of the mechanical mediation of brokers and other experts"¹⁷ to Keynes this must have seemed wishful thinking:

The only radical cure for the crises of confidence which afflict the economic life of the modern world would be to allow the individual no choice between consuming his income and ordering the production of the specific capital-asset which, even though it be on precarious evidence, impresses him as the most promising investment available to him.¹⁸

The above passages may be useful, indeed, not just in pointing out the strikingly different policy conclusions which are arrived at from an essentially similar diagnosis, but also the radical overtones of the later Keynes viz a viz "orthodox" economists. But again this is anticipating later discussion.

Finally there is the third set of causes, i.e. autonomous monetary causes of industrial fluctuations. Such autonomous causes refer to variations in the quantity of credit due to, say, a credit expansion abroad which forces an influx of gold into the home country or, equally, to an increase in the stock of money at home because of reckless behavior of domestic

authorities etc. Far more important factors from the point of view of industrial fluctuations, are, however, "monetary and credit arrangements" not as initiating causes but rather "as conditions upon which initiating causes, real and psychological, act, and which, by the response they make, largely determine the scale of the effect that is produced upon industry."¹⁹ To put it differently Pigou looks at monetary and banking arrangements as a means whereby the effect of changes in the economic data are propagated through the economic organism. As soon as emphasis is placed on the role of modern banking as a medium of transmission of the effects of economic disturbances one approaches the monetary theory of the trade cycle first introduced by Wicksell and von Mises and developed further by Hayek.²⁰ To be sure Pigou was far from being an unconditional supporter of the preponderance of the monetary factor in the causation of the trade cycle; yet his conception of the role played by the banking system in determining the amplitude of industrial fluctuations takes him some way toward Hayek's position. It would perhaps be unnecessary to emphasize the part played by money in Pigou's theory of the cycle were it not for the profound misunderstanding which surrounds the "classical" theory ever since the publication (or should I say the victory?) of the General Theory. On this account alone it is worth it, I think, to quote Pigou at some length as regards the effects of money on the workings of the economic system:

In a perfectly steady self-repeating movement, there is no reason to suppose that the mediation of money would modify in any respect the results ultimately achieved.... When, however, there is motion, the fact that industry is wrapped in a money garment seems likely a priori to render its reactions to the various impulses applied to it different from what they would have been had its limbs been bare. The money garment will, we may suspect, constitute a condition modifying the effects of these impulses; for the fact that its own movements are themselves caused by these impulses is, of course, no reason why they should not also exercise a causal influence.²¹

So much for "money neutrality" in Pigou's system! Now it may be well and good to debate as to whether the economists of the Cambridge school had, in fact, anticipated Keynes in the discovery of liquidity preference. I think they did. But whether they did or not does not in the least alter the fact that orthodox economists were aware that monetary changes were capable of influencing industrial activity so much so that, at least some of them, assigned the principal responsibility for the trade cycle precisely to the operation of the monetary factor. Thus to suggest with W.E. Kuhn that "Keynes' most valuable and enduring feat has been the integration of monetary theory ... with the theory of supply and demand" thus "bringing the [former] out of its isolated position as a separate subject"²² is merely to ignore some of the most important aspects of pre-Keynesian macroeconomics.

Up to this point our inquiry has been limited to the theoretical background of "classical" economists as exemplified by their most distinguished representative, A.C. Pigou. But, it is hoped, such an exploration, limited as it is, will suffice to at least throw some doubt on the entrenched belief in the static, full employment character of pre-Keynesian economic thought. And it seems reasonable to suppose that theoretical schemata, like those of Pigou, so fully cognizant of economic fluctuations could scarcely be expected to imply the ineffectiveness of policies designed to stabilize the level of economic activity. The question that arises is the precise relationship between Pigou's proposed countercyclical policies and those of Keynes. This is the topic of the next chapter.

NOTES

1. See the exchange between Keynes and Lord Bradbury in the MacMillan Committee in John Maynard Keynes, Collected Writings (MacMillan, London, 1981), vol.XX, pp.58-59.
2. *ibid.*, vol.XX, pp.58-59.
3. *ibid.*, vol.XIX, pp.646-647.
4. *ibid.*, vol.XIX, p.555.
5. *ibid.*, vol.XIX, pp.808-816
6. *ibid.*, vol.XIX, p.731.
7. *ibid.*, vol.XIX, p.765.
8. A.C. Pigou, Industrial Fluctuations (Augustus M. Kelley, New York, 1967), p.2.

9. *ibid.*, p.4.
10. *ibid.*, p.202.
11. *ibid.*, p.205.
12. *ibid.*, pp.33-34.
13. *ibid.*, p.35.
14. *ibid.*, p.56.
15. *ibid.*, p.75.
16. John Maynard Keynes, The General Theory of Employment, Interest and Money (Harcourt Brace Jovanovich, New York, 1964), pp.153-163.
17. Pigou, *op. cit.*, p.76.
18. Keynes, *op. cit.*, p.161.
19. Pigou, *op. cit.*, p.99.
20. F.A. Hayek, Monetary Theory and the Trade Cycle (Augustus M. Kelley, Clifton, 1975)
21. Pigou, *op. cit.*, pp. 133-134.
22. W.E. Kuhn, The Evolution of Economic Thought (South Western Publishing, Cincinnati, 1970), p.213.

CHAPTER II
THE MACMILLAN COMMITTEE

Keynes' Testimony

We have seen that by 1929 Keynes had come to the conclusion that the way out of the slump would be travelled faster and safer if the government and local authorities were only willing to increase their spending on "worthy" schemes of domestic capital development. We have also indicated that the continued weakness of the British economy was a major concern not only to Keynes but to almost every other economist, politician and journalist in the country. Out of this widespread apprehension about the state and future prospects of the economy was born the MacMillan Committee.¹

One important thing about the Committee is, I think, to be found in the spirit which underlaid its establishment; for in spite of the numerical preponderance of non-economists in it and the limited, non-binding character of its decisions its very creation was revealing of an increasing public awareness of the importance of expert opinion in the management of the economy. Howson and Winch have argued that the trend toward the ever-increasing involvement of professional economists and technical experts in the administration of the economy has its origin in the late nineteenth century. Be that as it may, it does not seem totally inaccurate to suppose that the establishment of the MacMillan Committee marks the beginning of the

spectacular proliferation of bodies of expert opinion whose presence and ever-widening scope have become one of the hallmarks of the modern welfare state. Given Keynes' role and influence in the establishment and deliberations not only of the MacMillan Committee but also of similar bodies throughout the 1930's, it certainly looks as if the great Englishman was not at all content to simply note that "the world is ruled by little else" besides "the ideas of economists and political philosophers" but was determined to imprint his own ideas upon the minds of his contemporaries.

Keynes' lengthy testimony to the Committee is, in fact, mostly an elegant and forceful attempt to convince his fellow members of the validity of his own novel, as he thought at the time, theoretical schemata. Keynes began by once again attacking the decision to return to the gold standard. The linking of the pound to gold, he argued, so far from being followed by swift deflation and the attainment of a new full-employment equilibrium was, in fact, responsible for the severe blow suffered by British exporters; it threw money costs of production at home out of line with costs in the rest of the world thus forcing British exporters to the brink of bankruptcy. In vain did Lord Bradbury protest that the advocates of the return to gold had been making their decision in the wake of the sweeping deflation which followed the post-armistice boom. He was told bluntly that such deflation as took place in 1921 was an exceptional occurrence, highly

unlikely to repeat itself in the future. For, Keynes argued, in 1921 people did not have time to adjust to the unusually favorable economic conditions which prevailed over the short-lived preceding boom so they were prepared to forego the standards of living that they had enjoyed temporarily.' Although Keynes' argument was largely based on the confidence which is afforded by hindsight, the already discernible rigidity of money wages rendered his position seemingly unassailable. Lord Bradbury had to acquiesce and admit tacitly that the return to the gold standard rested on a fallacy. Having thus underlined the downward stickiness of money wages at home Keynes went on to explain the plight of British economy in terms of the strictures imposed upon it by its being an open system. Now, in spite of the fact that Keynes' argument was couched in terms of the rather unusual theoretical framework of the Treatise (by that time at its finishing stage) the essence of it is fairly clear. The loss of foreign markets to British exporters consequent upon the return to gold meant that the favorable balance in the country's current account was diminished to such an extent that it became impossible to finance British net foreign investments without an outflow of the precious metal. But this efflux of gold revealed to the Bank of England the underlying disequilibrium. The response of the Bank had been, according to Keynes, the typical reaction implied by textbook theory, i.e., the tightening of credit conditions by which it

is meant both a rise in the Bank rate and the rationing of credit. Such restrictive monetary policy was supposed to bring about the required deflation the hard way, i.e., by slackening economic activity and creating enough unemployment to scale down wage demands. In Keynes' own words

the internal effect of a higher Bank rate is to render it less attractive to embark on new enterprises and new developments.... [It] means that all kinds of people who would have come forward for goods do not come forward.... If you have a cessation of capital enterprises you rapidly find many types of manufacturers getting less demand for their goods.... What is the next stage? Entrepreneurs will endeavour to reduce wages or if ... they cannot do anything in that direction, they will probably withdraw from the business.... So that all this shows itself in increased unemployment.³

At this juncture it might be useful to take a small diversion and notice a rather interesting point. In standard textbook expositions of the Keynesian model the feature of utmost importance is usually the existence of an under-employment equilibrium. It should, however, be clear that Keynes' theoretical schema is hardly consistent with the existence of equilibrium as this concept is ordinarily understood in static theory. For, unless I have terribly misunderstood the use of equilibrium, this concept refers to a state of affairs which is impervious to change so long as those data which economists do not care to explain and which

we call exogenous do not actually change. If some of these data undergo a change the old equilibrium is disturbed and a new one is formed. But the state of affairs envisaged by Keynes is not at all of the same character. For to the extent that we may speak of equilibrium at all this is a very temporary equilibrium which "contains the seeds to its own destruction", so to speak, or, to put it slightly differently, which is bound to change not because any exogenous elements change but because of its own inherent tendency. Keynes' equilibrium (he calls it "spurious" equilibrium) is, therefore, a moving or dynamic equilibrium and this is important not only in clarifying the relationship between Keynes' theoretical structure and its static popularization but, equally, because it bears a striking similarity with Pigou's notion of equilibrium as will be seen below.

We must now return to Keynes' testimony and ask where the time-honored mechanism of the Bank rate as a means of forcing down money wages via unemployment could be expected to work. Keynes' answer left little doubt that he did not expect it could. In fact, Keynes might admit that if it were for a small reduction in money wages the Bank rate could be trusted to do the job. As it was, however, the burden that was placed on the Bank rate was excessive - all the more so since the frightful fall in world prices which was already looming large in the horizon meant that "in order to restore equilibrium ... we have to have a still larger cut in money wages ... than we

had to have merely as the result of returning to the gold standard." For Keynes did not "think that we have ever asked the Bank rate to do as much as we are asking now." Furthermore "it is much harder for us to expand our exports than it used to be. In the glories of the nineteenth century ... we were practically the only supplier of the kind of things that people wanted to put their money into."⁵

This was the situation as viewed by Keynes. In spite of the fact that he did not yet differ substantially from orthodox analysis (with one exception to be mentioned below) he pointed out that the latter ignored the restrictions imposed on an open system by the gold standard. Thus he was confident that "if we did not belong to an international system I should have said there was no difficulty whatever; one could simply reduce the Bank rate to that level where savings and investments were equal [at full employment]."⁶ It is rarely that the importance of this statement is fully appreciated. For it demonstrates beyond reasonable doubt that the Keynes of the MacMillan Committee (and the Treatise) was still quite removed from the Keynes of the General Theory. He did not yet raise the "theoretically fundamental objections" which would, in his mind, confine conventional theory to the status of an unimportant special case. Instead he was convinced that the policies dictated by orthodox analysis would suffice to establish full employment. It is only in regard to an international system under the exigencies

of the gold standard that the traditional policy precepts become inadequate; hence, proclaimed Keynes, we stand in need of new remedies.

What were these new remedies? We have seen how Keynes' diagnosis of the situation reflected the major theme of his Treatise, i.e. that the economy had settled in a "spurious" equilibrium the explanation of which was to be sought in an excess of domestic aggregate savings over the combined amount of home investment and net exports. Consequently Keynes went to discuss first all those remedies that sought "to restore equilibrium by increasing foreign investment so as to absorb the excess of home saving over home investment."⁷ These naturally included every action which is conducive to the overall improvement of the nation's trade balance. A typical example of such action would be provided by the revaluation of the gold value of sterling. Yet, less than eighteen months before the big crisis which led Britain to the abandonment of the gold standard, Keynes did not think it probable or even possible that such action could be taken. "I feel pretty confident" he said "and I expect other members of the Committee do, that it is a remedy which in fact the powers that be would refuse to adopt.... There is no likelihood of such a remedy being adopted in present circumstances."⁸ The same objection, i.e. their impracticable character, was raised by Keynes in order for him to reject successively deflation, increases in productive efficiency, and a system of bounties

to particular industries as effective policy measures against the depression.⁹ It should be emphasized, however, that Keynes was not without sympathy to a different class of remedies, i.e. to measure that, in some way or other, fall under the heading of protectionism. I think, however, it would be best to postpone our discussion of the whole issue of protectionism until a later point. What is important for our present purposes is that Keynes had been sufficiently bold in stating his position so as not to leave any doubt about his own preferred alternative.

The sixth remedy tackles the problem from the opposite side. That is to say, it attempts to restore equilibrium not by increasing foreign investment but by increasing home investment. As I have already indicated, that is my own favorite remedy - the one to which I attach much the greatest importance.¹⁰

He then went on to discuss in more detail the possibilities for increasing domestic employment and, in a manner strongly reminiscent of certain passages in General Theory, added:

On the other hand saving less of our income would - though it may astonish the committee - really help the situation; and that would be better than nothing. If we were to save less and to spend more on current consumption that would truly increase employment provided the things we bought were things produced at home. And, as I say, it would be better that the unemployed should be employed making things for additional consumption than that they should be unemployed and that we should do without the additional consumption.... There remains the ... alternative that the unemployed might be employed

making goods for additional home investment.... It is the only remedy left if one holds that the other remedies are either impracticable ... or are inadequate, or are in themselves undesirable."¹¹

Does the above imply that Keynes had already developed most or, at any rate, much of the analysis that was to appear in the General Theory? I do not think that economists are yet ready to agree on that particular point. Fortunately, from our viewpoint, the significant question is different: is the advocacy of increased public expenditure as a remedy for unemployment the central policy message of the later Keynes? Or was such advocacy just a stage in the evolution of the great economist's thought that led him to the endorsement of comprehensive economic policies of an entirely different nature later on in his life? Whereas a definitive answer must necessarily await until a later point I venture to suggest that the evidence lends strong support to the latter interpretation. At this juncture it is of the utmost importance to realize that Keynes did not consider the proposed increase in public expenditure to be of a permanent character. He was convinced that it should only be a temporary measure in light of the present emergency. One can do no better but to quote Keynes' own words:

In conclusion I should like to say about Government action of this kind, that obviously it cannot be a permanency. You cannot be permanently stimulating local authorities to anticipate their programme, and

you cannot permanently be going ahead at a great pace with public developments. Nevertheless I think the first impetus forward must come from action of this kind, that it must be government investment which will break the vicious circle. If you can do that for a couple of years, it will have the effect ... of restoring business profits more nearly to normal, and if that can be achieved then private enterprise will be revived.¹²

It is, I think, abundantly clear from the above that the radical Keynes of the later years was not yet in the offing.

The Testimony of Pigou

The fact that the Keynes of the MacMillan Committee had yet a long way to go before he finally met with the Keynes of the General Theory does not in itself prove or disprove anything about the policy ideas of orthodox economists. In this respect it is particularly instructive to examine Pigou's attitudes toward stabilization policy. This is not only because Pigou has been, by Keynes' own admission, by far the most distinguished exponent of "classical" thought among his contemporaries but also because Pigou's testimony affords us a unique opportunity to evaluate the positions of the two men. Now it is hardly to be denied that, well before his appearance in front of the MacMillan Committee, Pigou had given ample evidence of his strong support for policies which were later on to be identified with the name of Keynes. Thus his testimony before the Committee serves only to reinforce the

injustice perpetrated against him by having his name uncritically associated with the textbook version of the "classical" theory.

Much ink and feeling has been consumed in debating Keynes' alleged departure from classical thinking in the case of the "theoretically fundamental objection" raised in p. 12 of his General Theory. This much discussed objection has been raised against

the assumption that the general level of real wages depends on the money-wage bargains between the employers and the workers.... Thus [according to Keynes] if money wages change one would have expected ... that prices would change almost by the same proportion, leaving the real wage and the level of unemployment practically the same as before.¹³

The same objection was brought to the fore by Keynes when Pigou suggested that one of the "three possible lines of remedy" for the depression would be via the reduction of real wages through cuts in money wages. Keynes retorted that

the reduction of money wages [may cause] prices to fall to an equal extent.... Now in this case the banks would have to reduce the rate of interest in order to stimulate new demand. If you were in a closed system that would be the obvious remedy.... But if we belong to an international system it may be impracticable ... to reduce the rate of interest, because that would lead to a loss of gold.¹⁴

Pigou, however, was not quite willing to accept Keynes'

reasoning. He freely admitted that there is no certainty that real wages can be reduced by lowering money wage. If you reduce money wages, Pigou said, "you might get to an equilibrium in which ... more people are employed ... or you might get to a different equilibrium [with] no difference in the rates of real wages." He then went on to explain that he thought it were more likely that a reduction in money wages would reduce real wages to some extent.¹⁵ That appears to be almost the only serious difference between the two men (the other having to do with the tariffs - more on that later), But even this difference is more apparent than real especially since it has little bearing on policy matters. This becomes plain once it is realized that Pigou intended his argument not so much as a policy measure (for he was keenly aware of the practical difficulties in the way of its implementation) but more as a theoretical point. It is interesting, I think, in this respect to present Pigou's own explanation of the celebrated rigidity of money wages. Pigou thought that there were several reasons such as the inability to tell whether a fall in prices was due to a decline in money demand or an improvement in productivity; or, equally, the fear of workers that, once the money wage falls, it may not be easy to secure an increase at a time when the economy is doing well.¹⁶ But the primary reason which is adduced by Pigou is, I believe, of particular importance. Once again it may be best to reproduce Pigou's argument intact:

First, a reduction in money wage rates would only be innocuous to the real wage rates of the workers in any group, provided that all other groups allowed similar reductions to take place.... Though it would be true, if everybody all round agreed to a 10 per cent reduction of money wages, when the income stream had fallen 10 per cent, that nobody would lose, yet if one began and the others did not follow, he would lose. Since there is no organised system for treating wages all round, somebody has to start; and naturally nobody wants to start.¹⁷

Now anybody who has gone through a cursory examination of the General Theory will readily recognize that Pigou's analysis is simply a complete anticipation of Keynes' explanation of the rigidity of money wages (or perhaps, that Keynes' explanation is a repetition of Pigou's aforementioned argument). Be that as it may, it is hardly admissible that anybody with Pigou's astute knowledge of the extensive rigidities characteristic of the labor market would dismiss lightly the difficulties associated with a policy of money wage reductions. In fact this is precisely what Pigou did not do. For in discussing wage rigidities in his Industrial Fluctuations he was careful to point out that

a wage system [fully] plastic ... would, on occasions, involve rates of wages per man so low as to be out of harmony with the moral sense of the time and incompatible with our social structure.... Plainly, as things are, a system permitting wage-cuts of that magnitude must be ruled out of court as, in a broad sense, anti-social.¹⁸

He therefore concluded that "when we inquire whether any remedy for industrial fluctuations can properly be looked for in modification of current wage policy, the only modification which it is practically worth while to study are modifications on a comparatively small scale." On the basis of the above it seems not quite inappropriate to say that for Pigou, as well as for Keynes, the usefulness of money wage as a means of stabilizing the economy was probably limited.

If, however, a policy of flexible wages was either impracticable or ineffective were we to give up hope on the prospect of a prosperous economy? We have already seen that Pigou suggested other possible lines of remedy. To begin with one could contemplate "altering the conditions of productivity, foreign demand, and so on, in such wise as to increase demand and so make full employment at existing real wage rates possible" or, more importantly, "one could employ devices which ... will allow of more employment."¹⁹ What exactly were these devices? Before we embark on a more detailed examination of these policy measures it is useful to explore the nature of these devices as understood by Pigou. Now Pigou had no doubt that the plight of the British economy was ultimately traceable to the stifling of the free working of the economic organism i.e. the widespread rigidities which prevailed both domestically and internationally in goods as well as factor markets. The important point from the viewpoint of policy is that Pigou had been prepared to accept

such obstructions as more or less established features of the economic system or, at any rate, as features which could not be removed overnight and whose presence drastically modified hitherto accepted policy precepts. In the absence of such obstructions, i.e., in a freely functioning capitalistic economy, State interference might do harm. Yet whenever the surrounding conditions of the free market are vitiated State interference so far from being detrimental will, in fact, prove beneficial to the smooth functioning of the economy. It is in this sense that Pigou's famous metaphor of the man ordered to walk on a tight-rope should be understood. When the man starts bagless it would be absurd to make him carry a bag in one hand. But once this absurdity has been perpetrated, presumably by irresponsible politicians, it would, in fact, make the man better off if he were allowed to carry a second bag in his other hand. Indeed this metaphor makes it all the more difficult to explain why Keynes would insist, six years later, that "the classical theory is best regarded as a theory of distribution in conditions of full employment."

Nor does the picture change once the particular devices proposed by Pigou are examined in more detail. Indeed, if there is something to be said about differences in the views of the two men about policy, it must have to do with the fact that Keynes was certainly less critical of the effectiveness of conventional policy weapons! To begin with it may be

useful to once again point out Pigou's insistence not only on the feasibility but also on the desirability of effective stabilization policy: "It should be a major object of policy to diminish these swings of general prices ... which are a factor making for unemployment." What then should policy-makers do in order to prevent industrial fluctuations? Among other things Pigou urged that "the Bank of England, in regulating its discount policy [including the buying and selling of securities], should have regard ... to the price level and the state of employment as well as to the state of the gold reserve".²⁰ Now the startling thing about Pigou's treatment of monetary policy is not so much his plain advocacy of "leaning against the wind" (a notion which would be identified with outright Keynesianism in our own day) as perhaps is his apprehension of some sort of liquidity trap! Indeed Pigou went so far as to contend that

if the price level is reduced in consequence of [deficient total spending] the banks can counteract that by increasing their own lendings, but they are not always in a position to increase their own lendings with effect. Supposing there is a closed system and the banks proceed to force out new money, through the Bank of England buying securities and getting money out that way, then possibly the whole of that new money will itself be hoarded, the people will have more deposits but they will not spend them.²¹

Keynes immediately objected to this by asking whether this state of affairs does not depend on the rate of interest only to receive Pigou's answer to the effect that "there is the state of mind of the businessman. The businessman might be in such a state that he would not borrow money at 0 percent."²² Keynes replied that "that is an extremely abnormal state of things." In view of the fact of Keynes' later (1932) advocacy of this "extremely abnormal" situation one can only wonder whether Keynes' economic thinking represents a revolution i.e., a violent break with the mental habits of the past or is perhaps a smooth outgrowth of the much-abused "classical" system. Nor was Pigou's advocacy of fiscal policy as an effective countercyclical weapon less ardent than Keynes' was. In fact, it should be emphasized that Pigou had supported the vigorous use of fiscal policy not just as an emergency measure, which, after all, was the sense in which Keynes advocated it, but, on the basis of more general theoretical considerations, as a regular part of the modern state's arsenal of countercyclical weapons. In particular Pigou suggested that the transfer of demand from good times to bad, i.e. the transference of large orders for goods on the part of public authorities, central and local, from the period of prosperity to that of depression would result in more work being done in bad times without any corresponding diminution of work in good times. He further pointed out, anticipating much of Keynes' later discussion of the paradox of thrift,

that the behavior of public authorities is, in this respect, quite inappropriate in that their spending decisions are influenced by the state of the cycle in a perverse manner so that the demand of public authorities is low when industry in general is depressed, i.e. precisely when such demand ought to be high. But, he hastened to add, there is no reason why the orders of public authorities should be operated in this way; they could be made to operate properly. Again, in what is an astonishing anticipation of Keynes' later ideas, Pigou argued that, in a country like England, the overwhelming part of this kind of public expenditure which is transferable from good to bad times is placed in the hands of local authorities. Yet local authorities frequently lack the power or the will to pursue such countercyclical policy. Under these circumstances the only possibility open for influencing the volume of employment is for the central government to exercise

its powers of compulsion, of making or withholding grants, of granting or refusing power to borrow and, above all, of providing capital on easy terms at times when it is desirable on national grounds that public works should be set in hand.²³

How far should such government intervention be pushed? This, according to Pigou, could not be determined unless by reference to the balancing, at the margin, of gain against cost. However, "the presumption in favour of some creation

of transfer beyond what comes about 'naturally' is very strong."²⁴ How, on the basis of the above, was it possible for Keynes to contend that the "great puzzle of Effective Demand vanished from economic literature" and "was not mentioned even once in the whole works of ... Professor Pigou, from whose hands the classical theory has received its most mature embodiment" is itself a formidable puzzle which surely brings to the fore the psychology of polemics waged within the confines of social science.

It is not perhaps superfluous to repeat that such were the views of Pigou on fiscal policy as early as 1928 - they can be found in his Industrial Fluctuations. There was no reason to suppose that his stance would be very much different when examined by the Committee. In fact, it was not. Still there had been a shift of emphasis which, if anything, brought Pigou closer to those who, like Keynes, sought strenuously to establish a policy of fiscal expansion as the desired remedy for the depression. For Pigou had clearly recognized that countercyclical fiscal policy can assume two different forms, i.e. the government could transfer demand to bad from good times as it could create new demand in a period of depression. He concluded that from the theoretical point of view there can be no distinction between the effects brought about by either policy. For "the main effect of both policies, assuming them to be applied successfully, is that more work is done ... in bad times without any corresponding contraction of work in

good times." As a matter of experience, however, he pointed out that the two policies were not equally desirable. In practice there is a very great difference between a policy of systematic creation of demand in bad times through, say, public works and the policy of transference of demand from good times to bad. For, under the former policy, a heterogeneous collection of relatively inefficient individuals are put to work on something for which, more often than not, are poorly trained and in conditions in which the enforcement of effective discipline is very difficult. Thus whereas occasionally it may be desirable to pursue a policy of relief works (as, for instance, when unemployment is of unusual severity and persistence) it is nevertheless true that, as a general rule, the economic waste resulting from such policies is "bound to be very great".

Yet by 1930 the perils of the world depression were sufficiently grave to cause Pigou to abandon his reservations. For Pigou was keenly apprehensive of the internal dynamics of the slump. In terms strikingly similar to those used by Keynes he explained to the Committee that the underemployment equilibrium in which the British economy found itself was not the bottom of the pit, i.e. that things had an inherent tendency toward deterioration. "But the danger of the thing" he said "as I see it, is that this new position [of underemployment equilibrium] is not really a stable position, but it is a position that carries in itself the seeds of its

own worsening."²⁵ What then was to be done? Pigou did not hesitate to suggest some special measures intended to deal with the "immediate emergency". Such measures dictated that

the government should put in hand and should encourage local authorities and public utility companies to put in hand enterprises of a useful character, even though they are likely to yield a return substantially below current rates, and even though guarantees of interest involving a cost to the Treasury are necessary.²⁶

Indeed, if one is not immediately aware of the origin of the above passage he might well wonder whether it is derived from "Can Lloyd George Do It?" or from some other of Keynes' writings of the same period.

To be sure Pigou was quick to point out that such policies should be regarded as temporary and that, in due time, should be suspended, i.e. as soon as improved efficiency and a larger capital stock allowed normal employment to be maintained without the need for far-reaching government intervention. Yet it is precisely the point that Keynes too, during that same period, was convinced that a policy of fiscal expansion could only be of a temporary character and should be used only as a means of breaking the vicious circle; once it had accomplished this it should be relaxed in order for the private enterprise system to once again come on its own and do the job. It seems therefore hardly an exaggeration to state that Pigou's stabilization measures were, at the time

of the MacMillan Committee, virtually indistinguishable from Keynes' proposed policies. I should perhaps add that astonishing as it may seem, this was plainly recognized by none other than Keynes himself in a letter he wrote to the Times on July 27, 1933. The letter was Keynes' response to a leading article on public works in which it was suggested that there existed a difference of opinion between Keynes and Professor Pigou on the financing of such proposals. Keynes began by noting that "such difference of opinion between myself and Professor Pigou ... does not, I think, exist." He admitted that, if by "creation of new money" it was meant open-market operations by the Bank of England, he was personally favorably inclined to such operations regardless of whether increased public expenditure were forthcoming since open-market purchases were a means for further reducing the rate of interest. Yet, he argued, the main point was the one emphasized by Professor Pigou

namely, whether there are not many enterprises which would pay for themselves if we were to credit to their cost what they would save the Treasury in unemployment relief, and, I should add, what they would earn for the Treasury in the increased yield of taxation.²⁷

He concluded that there seemed to exist large fields of investment activity (chiefly housing and probably railway electrification) which lend strong support to the argument in favor of increased public expenditure.

As a last point of importance in this discussion I would like to suggest that the affinity in the views of the two men extended beyond the realm of economic policy. No better opportunity can be had for making this clear than their common preoccupation with the so-called "Treasury view". The Treasury view (what we should call today crowding out) is perhaps the most compelling evidence of the existence of a genuine policy consensus among "civil servant" economists, bankers and some politicians. One of its strongest formulations is to be found, I think, in the report of the Transvaal Indigency Commission which concluded that "when the Government gives work to the unemployed ... it is diminishing employment with one hand while it increases it with the other. It takes work from people employed by private individuals and gives it to people selected by the State."²⁸ Such was the view that prevailed with the Treasury; consequently it was the task of anyone who favored an expansionary fiscal policy to refute it. Both Keynes and Pigou were fully aware of the need for a theoretical defense against the Treasury view. Neither of them, however, was to be entirely successful in supplying a rigorous argument prior to the appearance of Kahn's celebrated article. Yet their respective arguments against the Treasury view bear a striking resemblance which, in view of the subsequent confusion surrounding the relationship between the "classical" theory and crowding out, is perhaps useful to be repeated. Pigou did not, in fact, hesitate to assert that

"the contention [of the Transvaal Commission] is invalid."²⁹ His vehement opposition to the Treasury view was based on his belief that the stock of consumers' goods (the "labor purchase fund") available to support investment so far from being rigidly fixed could be enlarged or contracted by transferring resources between it and those other funds intended to provide for the consumption of capitalists and for storage. In addition, Pigou argued, in a country like England there exists an additional source of consumption from which a substantial portion of the required resources can be readily secured without in any way diminishing the stock of consumers' goods destined to support investment done by private individuals. This extra consumption would be forthcoming from the large sums annually allocated to the relief of persons who have been the victims of intermittent employment. Furthermore one should not lose sight of the fact that, in an open economy, the resources necessary for the maintenance of workers in the capital goods' industries could be obtained by importation. Such then was Pigou's answer to the Treasury view. Was it any different from that of Keynes? The evidence reveals that, on this point too, there existed, between the two, hardly any disagreement. Keynes had publicly stated his own response to the Treasury view as early as 1929 and made it plain, once again, in his testimony to the MacMillan Committee that the Treasury view was no more than a fallacy. To realize this, Keynes argued, one has only to ask out of what physical

resources would additional home investment be financed? To begin with there is the consumption coming out of the "dole", i.e. the unemployment insurance fund and the consumption from the unemployed using up their savings. Furthermore saving on the "dole" would be much more substantial than is indicated by the number of men directly employed on schemes of capital development; for one should not ignore the repercussion effects which would come about as the additional consumption of the newly employed men, to the extent it is directed toward home-produced goods, results in more employment in consumers' goods industries and so on in a cumulative snowball fashion. Secondly, Keynes continued, any increase in the amount of home investment will directly diminish the gap between aggregate savings and home investment and thus set free savings hitherto used to offset businessmen's losses. Now this argument is couched in terms of the "fundamental equations" of the Treatise and is less intelligible than it would be had Keynes chosen a more straight-forward approach. What he meant, however, was quite simply that the increase in home investment must necessarily bring about a rise in prices viz a viz money costs of production (chiefly money wages) - for how else could entrepreneurial losses be diminished? - which, in turn, would tend to depress the consumption of already employed workers (forced saving is this process sometimes called) thus allowing for the consumption of those newly put to work. In Pigou's language such consumption results from a reduction in the fund

intended for the consumption of employed workers. Lastly, Keynes observed, a fraction of the additional consumption of the newly employed men and their families would have to be provided by importation from abroad.

Now the most astonishing thing about Pigou's refutation of the Treasury view is not, I think, its basic similarity to that of Keynes but the fact that there are people that, even today, insist that perfect crowding out is a fundamental feature of "classical" economic thought. In fact, as the above quotations make clear, crowding out was far from being, in any sense, connected to Pigou's account of the depression; furthermore it cannot be made to follow logically from Pigou's analysis unless the latter is meant to apply exclusively to the special circumstances of full employment. But then the crowding out proposition reduces to a mere truism, i.e. it has no analytic interest since it is self-evident and, in this sense, has been accepted by every economist, including Keynes, and, I might add, probably by every crank as well. But we now know that orthodox economic thought in the 1920's and 1930's so far from taking the static full-employment equilibrium as the norm was intensely preoccupied with the nature of cyclical fluctuations and their impact on the economy. Thus, whereas Keynes, as I will attempt to explain below, might have a semblance of excuse when, in his polemical attempt to revolutionize economic thinking, attacked the fictional "classical" scholar there can be no excuse for those who

nowadays insist on identifying "classical" theory with full employment and automatic adjustment.

NOTES

1. John Maynard Keynes, Collected Writings (MacMillan, London, 1981), vol.XX, p.17.
2. *ibid.*, pp.58-62.
3. *ibid.*, vol.XX, pp.46-49.
4. *ibid.*, vol.XX, p.60.
5. *ibid.*, vol.XX, p.60.
6. *ibid.*, vol.XX, p.84.
7. *ibid.*, vol.XX, p.126.
8. *ibid.*, vol.XX, p.100.
9. *ibid.*, vol.XX, pp.106-113.
10. *ibid.*, vol.XX, p.126.
11. *ibid.*, vol.XX, p.128.
12. *ibid.*, vol.XX, pp.146-147.
13. John Maynard Keynes, The General Theory of Employment, Interest and Money (Harcourt Brace Jovanovich, New York, 1964), p.12.
14. Committee on Finance and Industry (MacMillan Committee), Minutes of Evidence (H.M.S.O., London, 1931), Q.6142.
15. *ibid.*, Qs.6143-6147.
16. *ibid.*, Q.6552.
17. *ibid.*, Q.6552.
18. A.C. Pigou, Industrial Fluctuations (Augustus M. Kelley, New York, 1967), p.310.
19. A.C. Pigou, "Note by the Witness", Committee on Finance and Industry, *op. cit.*, p.93.

20. *ibid.*, pp.93-98.
21. Committee on Finance and Industry, *op. cit.*, Q.6610.
22. *ibid.*, Q.6610.
23. A.C. Pigou, Industrial Fluctuations, *op. cit.*, p.334.
24. *ibid.*, pp.320-322.
25. Committee on Finance and Industry, *op. cit.*, Q.6552.
26. A.C. Pigou, "Note by the Witness", *op. cit.*, pp.95-99.
27. John Maynard Keynes, "Letter to the Editor", London Times, July 27, 1933.
28. A.C. Pigou, Industrial Fluctuations, *op. cit.*, p.316.
29. *ibid.*, p.316.

CHAPTER III

THE COMMITTEE OF ECONOMISTS

The Establishment of the Committee

The task of the MacMillan Committee was neither easy nor one which could be accomplished with speed. The Committee had to examine dozens of witnesses of whom only a small minority were professional economists. Its deliberations were, therefore, extended over a prolonged period of time and, perhaps more importantly, its final report lacked the unanimity and resolution which might have given it some effectiveness as an enforceable policy recommendation. Keynes must have realized this at a relatively early stage; neither his impetuous temperament nor his proclivity toward action could acquiesce at the prospect of the Committee's deliberations resulting in just another "academic" document of little practical significance. He therefore proposed to Ramsay MacDonald (at that time Prime Minister of the Labor government) the formation of a small committee composed exclusively of professional economists which would "review the present economic condition of Great Britain, examine the causes which are responsible for it, and indicate the conditions of recovery."¹ The decision of the Committee's formation under Keynes' chairmanship was announced on July 24, 1930. It has been suggested² that Keynes felt confident that he would be able, when working with fellow economists, to

achieve the unanimity and resolution that, not perhaps wholly unexpectedly, could hardly prevail when dealing with "outsiders", i.e. bankers, civil servants, business men and trade unionists as was the case with the MacMillan Committee. Indeed, in view of the substantial agreement on policy matters which prevailed between, on the one hand, Keynes and, on the other, Henderson and Pigou. Keynes' expectations did not seem totally unwarranted. And yet the final outcome of the proceedings of the Committee of Economists (as the Committee has come to be known) did not justify such hopes as Keynes might have entertained at the time of its establishment. Why was this the case is the task of this chapter to attempt to answer.

The Report of the Majority

In spite of his best efforts Keynes did not succeed in securing his fellow economists' endorsement of a common report. Robbins refused to sign the report produced by the majority and Pigou, while going along with the majority's opinion on more than one point, insisted on a note of dissent that set him apart from the others on the big issue of protectionism. Thus it was clear right from the outset that, Keynes' initial optimism notwithstanding, professional economists were not yet ready to subscribe to a common diagnosis of the disease let alone decide on common treatment.

Yet one should be careful not to overemphasize the difference of opinion between the Committee's members. For it seems safe to say, on the basis of the Committee's report, that, with the possible exception of Robbins, there was a considerable area of agreement between the economists and that irreconcilable differences of opinion, albeit not completely absent, were perhaps limited.

To begin with there was little, if any, disagreement as to the causes of British unemployment. It was partly attributed to the world slump which was, even at that relatively early date, of an unusual severity and was referred to as a "catastrophe"; and, equally, there was the "local want of adjustment" peculiar to Britain which had been observable during the long recession suffered by the country at a time when the international economy was going through a period of relative prosperity. Furthermore it was recognized, in harmony with Keynes' argument, that the overvaluation of the pound attendant upon the return to gold compounded the difficulties of British exporters; such other difficulties were due to adverse shifts in international demand (something which had also been admitted by Keynes) and the obstruction to free trade caused by "the tariff policies of other countries".³

Next certain rigidities were identified as a causal factor and were admitted to have "deleterious effects on production". Such rigidities were traced back to monopolistic

practices designed to restrict the level of output no less than to stickiness in the "income structure".⁴ It was pointed out - as this was, indeed, one of Pigou's favorite themes - that the unemployment insurance system (which was of relatively recent origin) was partly responsible for the Trade Unions' practice of resisting the downward adjustment of money wages.⁵ If, however, in the face of deficient spending money costs of production were more or less inflexible then, it was argued, profits, i.e. the entrepreneur's inducement to produce "is reduced to vanishing point".⁶ Thus once money costs were thrown out of line with prices producers suffered losses and as a result unemployment "on a colossal scale" followed. Unless, therefore, money costs were to fall to restore the competitiveness of British exporters in international markets there was the danger, particularly threatening in the face of the world depression, that Britain's export trade would diminish to the point of disaster. To be sure it was stated that a reduction in money wages should be expected to bring about some reduction in prices; it was also recognized that the practical difficulties of effecting wage cuts were not to be taken lightly. Specifically it was admitted that "a wage cutting campaign amongst the leading industrial countries" should be avoided since it was likely to have serious social repercussions.⁷ The above notwithstanding it is quite clear that the desirability of unilateral wage cuts on Britain's part as a means of combating unemployment was never questioned

in the report. This must have been one of the concessions made by Keynes primarily, as I now think, to Henderson in the interests of unanimity.

If a fall in money wages were desirable but not easily attainable what other measure might work in the direction of recovery? For one thing there was always monetary policy which could and should be used to "lean against the wind". In fact the argument in favor of cheap money in the majority's report is virtually indistinguishable from those of Pigou and Keynes in their respective testimonies to the MacMillan Committee. There is, however, one reservation which weakens the majority's confidence in the efficacy of monetary policy in conditions of severe depression. This reservation essentially expressed Pigou's skepticism on the subject. For, as the report stated, "at the present easy terms for short-term credit ... borrowers are reluctant to enter upon new enterprise in an atmosphere of a falling price-level."⁸ We have seen, of course, that only a few months earlier Keynes had opposed this Pigovian "liquidity trap". It does not seem likely, however, that this was just another concession on Keynes' part. There is some reason to believe that the failure of cheap money to produce the expected results viz a viz output and employment (which is stressed in the above passage from the Committee's report) had gradually induced Keynes to reevaluate his position. I now think it was in the fall of 1930 that Keynes' disbelief in the efficacy of

monetary policy began to take shape, a disbelief that, a few years later, would produce a startling departure from the policy stance he adopted in his Treatise and in front of the MacMillan Committee.

So far from monetary policy standing alone as a weapon against unemployment there was also the alternative of fiscal expansion. It is worth it, I believe, to quote at some length what the Committee had to say about it:

Under conditions of excessive unemployment such as prevail to-day...we are convinced that what we may term the policy of 'public works' [i.e. promoting useful schemes of capital development either by pressing forward such work as lies within the direct control of the Government or by the offer of State subsidies to local authorities and public utility companies] is, in principle, a sound policy for the State to pursue.'

This was not all the Committee had to say on "public works"; there followed a straightforward refutation of the Treasury view: "We do not accept the view that the undertaking of such work must necessarily cause a mere diversion from other employment."¹⁰ There is even reference to the multiplier effect:

the effect of public works in increasing employment is, of course, not necessarily or even often confined to the number of workpeople directly engaged upon them. They entail an increased demand for the services of the industries which supply the materials used; and the increased purchasing power of the workers employed in these ways has further beneficial repercussions upon trade in general."¹¹

There was, however, a warning as to the extent to which such policies could or, at any rate, should be pushed by the government. It was argued that the scale of the whole programme of public works must be such so as to render it reasonable to the eyes of the public. For whereas it is not necessary that crowding out be the result of a fiscal expansion this could very well happen if the expansion was of such a character as to seriously undermine confidence in the stability of public credit. Therefore the extent to which policies of public works could be put to practice to cure unemployment was not without limits.¹² Now we have seen that neither Keynes nor Pigou were seriously preoccupied with the prospect of fiscal expansion assuming such proportions that it might jeopardize the stability of public credit. Nor could they be expected to be preoccupied since they were convinced that such public expenditure as was forthcoming so far from being extravagant did not, in the face of the present emergency, even come close to being enough. They therefore must have thought that the threat to the "soundness" of public finances or that of "insular" socialism were more imaginary than real and if a danger existed at all it was that of too little public expenditure and too much unemployment. But this was not the opinion of Henderson or Stamp. The former, in particular, had grave reservations about pushing state

intervention too far and he was keenly apprehensive that proposals of this sort might quickly get out of hand. Henderson's position can not be examined in more detail in this paper but even at this early point, it seems safe to suggest that the limits to fiscal expansion referred to in the report were stressed due to his own insistence. Finally one should observe the Committee's insistence on the temporary character of such stabilization measures as were proposed in its report. The policy of public works, in particular, was envisaged as a temporary expedient, as a countercyclical device which would be stopped the moment that the upward movement in business activity began to advance under its own momentum. "For the effect of judicious emergency measures might be to improve business confidence, after which business confidence might take the place of the emergency measures as providing the necessary stimulus."¹³ But, of course, there is nothing new or surprising in these statements. For we already know that to both Keynes and Pigou fiscal expansion was a much promising countercyclical measure which, however, was to be abandoned as soon as it had served its purpose, i.e. as soon as it had moved the economy out of the slump.

The Dispute Over Protectionism

There was a point, however which, twist and turn as one might, seems to have divided the economists deeply. While

theoretical differences in other areas undoubtedly existed between members of the Committee there were not impossible to overcome - as was conclusively demonstrated by the final report that the majority had been able to produce. Yet when it came to the related issues of international economic relations and international economic policy whatever consensus might have existed in other areas broke down. To more fully appreciate the nature of the fundamental difference involved one must go back to Keynes' testimony to the MacMillan Committee.

Keynes suggested bluntly that unbridled laissez faire in the matter of foreign lending and full employment were, in the case of England, incompatible. Keynes' argument was based on the idea that there exists differential treatment of labor relative to its efficiency between different countries. For it is likely, Keynes argued, that, in spite of equal efficiency of labor and capital between England and some foreign countries, the relative remuneration of the factors be different in each case. Thus, as a hypothetical case, it may be that in England three-fifths of the value of the product produced goes to labor and two-fifths to capital whereas the exact opposite is true, say, in Germany. If it were true that the relative remuneration of labor and capital were as indicated above then it would almost certainly be more attractive for English investors to invest their funds abroad rather than home. As a result of such pressure for savings

to find their way abroad the danger was present that England might find herself in a state of chronic credit disequilibrium, i.e. a situation where - in the ex ante sense - the surplus of domestic savings over home investment exceeds the nation's net exports; hence under conditions of laissez faire in foreign lending the only alternative, save a state of permanent stagnation, would be a drastic reduction in the standards of living of the British working classes until capital gets the same proportion of the national product as in Germany. Thus, according to Keynes, full employment and the maintenance of the present pattern of income distribution would be incompatible under complete freedom in foreign investment.

Now it should be repeated that, at the time of the Committee of Economists and perhaps for some time after, Keynes' views were not very different from those of orthodox economists. Keynes' disagreement with his brethren, as he himself told the MacMillan Committee, was that, since Britain was an open economy rather than an isolated community, monetary policy could not be relied upon to single-handedly restore full employment. In his emphasis on his departure from traditional teaching Keynes was almost certainly exaggerating. For it has been shown that other economists were, if anything, more apprehensive than he was of the difficulties in using cheap money to maintain full employment. And since, in spite of differences in emphasis, they fully

recognized that deflation through cuts in money wages was, even if desirable, very difficult to accomplish; in practice their policy suggestions were practically coincident with those of Keynes. And yet, as we saw there was the issue of protectionism and, in particular, of laissez faire in foreign lending in which Keynes, in partial anticipation of his later views, went, indeed, too far; he thus would have been right if he thought that his treatment of foreign investment set him apart from established wisdom. In fact Keynes must have understood this right at the outset as there was not even the slightest indication in the majority's report of the need for the permanent control of foreign investment by some central authority. This, however, did not prevent Keynes from carrying along with him Henderson and Stamp in his support for protective duties designed to exclude imports from domestic markets. The reasoning behind the triumvirate's proposal was identical to that expounded by Keynes in his testimony to the MacMillan Committee. It was argued that it cannot reasonably be expected that a country like England could maintain full employment of her productive resources "without a somewhat large proportion of foreign investment to total savings."¹⁴ For the fact that Britain was a mature capitalist country meant that other countries, especially the relatively undeveloped periphery of the international economic system, would be able to offer investment far more attractive outlets, i.e. yielding a much higher rate of return than could be

obtained at home. If, therefore, it so happens that the volume of savings destined to finance foreign investment exceeds the favorable balance on the nation's income account a credit disequilibrium results "which is likely to have a most adverse effect on business profits and hence on employment."¹⁵ What were the remedies to this situation if any? For one thing there is always the remedy of an increase in home investment - perhaps by a fiscal expansion. Another alternative might be "an increase of the favorable trade balance." And surely, it was argued by Keynes and company, it seems "better to occupy our unemployed resources in making goods to take the place of goods now imported than not to occupy them at all."¹⁶ In conclusion

the imposition of reasonably devised protective duties ... that should exclude a substantial portion of [our] imports ... would, for some time to come, directly increase the aggregate volume of employment in this country, and by so doing would set up repercussions ... that would, by indirect process, increase it still further.¹⁷

Support for tariffs was not, however, something about which Pigou would or could acquiesce. The reason is not, indeed, difficult to see. We have seen that, albeit by no means an unconditional supporter of laissez faire, Pigou was nevertheless convinced that most of Britain's economic problems were attributable to obstructions that prevented the free working of the forces in the market. If however, such

obstructions, were, for whatever reason, irremovable then external intervention so far from being harmful could provide the much-needed remedy. In the case of fiscal policy, however, Pigou, equally with Keynes and the others, had little doubt that it would only be temporary for, he believed, once the countercyclical device had served its purpose it could be switched off without further ado. In terms of Pigou's metaphor it is better that the man walking on the tightened rope and burdened with a bag on one hand be handed a second bag to carry with the other hand. After, however, he has finished walking on the rope and resume "normal" walking it might be better, although he will not be allowed to drop the first bag, to be freed by the extra burden imposed by the second. But this is precisely what, according to Pigou, would not happen with tariffs. For whereas there was no reason, theoretical or other, to suppose that increased public expenditure would somehow become a self-perpetuating situation, in the case of protection, historical experience indicated otherwise. Pigou pointed out that once a tariff is imposed it is not very probable that it will be removed with the end of the depression. "On the contrary" Pigou argued

it would almost certainly be kept afterwards; then at the next depression, to meet that, the rates of duty would be increased, and so on cumulatively.... There is no instance in history of a tariff imposed to meet a depression and removed when good times returned.¹⁸

Pigou was, indeed, too good an economist not to recognize the welfare cost which is inflicted by protectionist measures, including tariffs, and, probably, too pragmatic an observer to overlook the practical difficulties of their removal once they have been set up. He therefore, refused to endorse the clause on tariffs and, in this respect, stood clearly apart from the triumvirate and closer to Robbins.

Robbins, Hayek and the LSE "Neo-Individualism"

Robbins was not content with a mere note of dissent. He emphatically refused to sign the report produced by the majority and insisted, in spite of pressure brought to bear on him by Keynes,¹⁹ on a separate report. It is clear, on account of the above that Robbins must have felt in fundamental disagreement with the thrust of the report; and since there is little doubt that, on the whole, the Committee's message was for a more active role for government it is imperative that we look briefly at Robbins' theoretical background that distinguished him sharply from the other members of the Committee. Robbins, when in fact first approached by Keynes at the time before the establishment of the Committee, had suggested that it might be helpful to the Committee's task to listen to what distinguished continental economists (such as Ropke, Ohlin and Hayek) had to say.²⁰ Of

the above it is the economic theories of Hayek which are of particular importance for not only did Hayek play a somewhat energetic role in the debate over policy but, equally, because, partly by virtue of his position at LSE, he seems to have provided a major theoretical influence on Robbins.

It may perhaps come as a surprise to all those who have been taught to believe that money neutrality is somehow a fundamental attribute of pre-Keynesian economic thought that the influence of money on economic activity has been recognized as early as 1802.²¹ Some of the most prominent economists have, if not fully developed, at least brought to the fore the significance of monetary factors in their relationship to the trade cycle. I should think that, throughout the 1920's and the 1930's, the most distinguished exponent of the monetary theory of the trade cycle was Hayek. He, along with, indeed, most economists, had been fully aware not only of the importance of the cycle as a major economic phenomenon but also of the need for a more complete theoretical explanation of it. This is precisely what he set out to do in his Monetary Theory and the Trade Cycle and, from a more general point of view, in his Prices and Production.

Hayek's analytic attack began with an outright rejection of Say's law. He thus stated that

the necessity of the monetary approach to Trade Cycle theory arises from the circumstances that the automatic adjustment of supply and demand can only be disturbed when money is introduced into the

economic system. The presence of this automatic adjustment, which has found its clearest expression in Say's Theorie des Debouches, cannot be doubted in a barter economy. But we must be quite clear on one point. An economic system with an elastic currency must, in many instances, react to external influences quite differently from an economy in which economic forces impinge on goods in their full force - without any intermediary; and we must, a priori, expect any process started by an outside impulse to run an entirely different course in such an economy from that described by a theory which only takes into account changes originating on the side of goods.²²

Now this lengthy quotation would perhaps be unnecessary were it not for the widespread conviction that, before Keynes' General Theory, Say's law was an integral part of accepted wisdom. But if Hayek and, as we have seen, Pigou and Henderson, not to mention Wicksell and von Mises, were, in fact, fiercely opposed to the application of Say's law to the analysis of the monetary economy then the supporters of the view that a Keynesian revolution took place in the late 1930' ought to explain more precisely what kind of revolution they have in mind.

Hayek's own explanation of the cycle is to be found in the potency of the monetary factor to substantially modify the equilibrating role of the price-mechanism of the barter economy. It rests solidly on Wicksellian foundations. For, according to Hayek, under contemporary conditions of economic organization the money rate of interest is in constant deviation from the equilibrium or "natural" rate, i.e. the

rate which equates saving and investment at full employment. The question was of course, what were the causes behind such deviation? Hayek's answer was that the new element which supplies the key to the answer is the elasticity "of the volume of money at the disposal of the economic system." Not only is the stock of the monetary medium elastic but such elasticity is an inherent feature of modern financial and money systems. Thus when the "natural" rate rises in response, say, to some new invention or discovery or perhaps because of cheap labor due to heavy immigration the banks will be able - indeed, they will be forced under competitive pressure - to satisfy the increased borrowings of business men without raising their interest charges, i.e., the money interest rate will not move along with the equilibrium rate in the upward direction. But is it possible at all for the banks to increase credits? The answer, I think, is important if for no other reason, simply because it reveals an early discovery of liquidity preference.

So long as the banks maintain a constant proportion between their cash reserves and their deposits it would be impossible to satisfy the new demand for credit.... The key to this problem can only be found in the fact that the ratio of reserves to deposits does not represent a constant magnitude, but, as experience shows is itself variable.... [For] whereas previously, at the same rate of interest and with the same security, no new borrowers came forward, now, under the same conditions of borrowing, more loans can be placed.... Considerations of liquidity will [not] lead to the same result now as when fresh loans could only have been placed at a lower rate of interest [consequently] ... the bank's liquid reserve ...

[is] not even of a constant magnitude, unrelated to the size of profits which [it] makes possible.

In the last analysis "we can see that the greater loss of profit entailed by keeping the cash reserve intact will, as a rule, lead the bank to a policy which involves diminishing the size of this non-earning asset."²³

This was then Hayek's explanation for the frequent deviation of the money interest rate from the equilibrium rate. So far from this deviation being something peripheral it was a central feature of the modern monetary system. And it is precisely this divergence that accounts for the observed swings in economic activity. For it cannot be that the banks will continue to extend the volume of credit indefinitely; sooner or later such expansion must come to an end. When it does "the money rate [of interest] must ... rise again to its natural level and thus render unprofitable ... those investments which were created with the aid of additional credit."²⁴

Is it then possible to eliminate or, at the very least, to mitigate the cycle? Hayek's answer is mostly negative. For, as follows inevitably from his argument, since the cause of the cycle is to be found in the existing monetary organization no practical measure, short of the abolition of the modern banking system, would enable us to entirely do away with cyclical fluctuations. Nor, indeed, was it obvious that

the elimination of the cycle, even if possible, would be desirable. For, in fact, the cycle's very existence reveals a fundamental tradeoff between stability and economic development. If the choice is for a more rapid pace in the accumulation of society's wealth then we should not hesitate to recognize that the cycle is the price which must be paid to secure increased prosperity. For how else but through the elasticity of bank credit could commercial and industrial knowledge advance at so rapid a pace in a capitalistic economy?

Nor is it wholly surprising that Hayek's policy recommendations stand in sharp opposition to those of both Keynes and Pigou. For if Hayek was right in his explanation of the cycle it followed that the plight of the international economy must have been the inevitable outcome of the previous boom. Thus if one were to follow the advice of "stabilizers" and use monetary policy with the explicit aim of avoiding deflation at all costs this could not but make things worse. For deflation, so far from being the cause of the suffering, was a secondary phenomenon, the inevitable consequence of the fundamental maladjustments wrought on industry by the preceding boom. The energetic use of monetary policy to prevent prices from falling would only serve to frustrate the only effective treatment available to the patient. Now since the treatment, i.e. deflation was, indeed, painful it might appear as if an inflationary policy were, in fact, beneficial.

Such was the superficial view, Hayek complained, which had prevailed in official circles both within the government and in the Central Banks, and which has led, especially in the United States, to the most "far-reaching efforts that have ever been undertaken ... to combat the depression by a policy of credit expansion."²⁵ Thus at a time when industry suffered from a basic misdirection of production the way out was sought in further misdirection. Inflationary policies were therefore an "attempt to cure the evil by the very means which brought it about" with the result that the recession has surpassed every other in both severity and duration.

Now it is probable that economists who have come to accept Friedman's explanation of the depression might be tempted to dismiss Hayek's theory as irrelevant. They may be right as far as the Great Depression goes. That Hayek's hypothesis may not be admissible in this particular case, however, does not mean that it is useless. It retains, I think, enough force as an explanation of more than one historical episode. Furthermore its usefulness should not be rejected on this account alone. Very few people would think much of Keynes' explanation of the depression today; this, however, does not prevent most economists of recognizing both the significance and the impact of his analysis. It should be the same with Hayek. For his analysis represents a pioneering effort not so much in its forceful recognition of the potency of the monetary factor as in his pointing out to

the need for a dynamic analysis which would fully develop the intricate linkages between, on the one hand, the volume of money and, on the other, the level and structure of production. The fact that such analysis is still lacking does not in the least diminish the need for it.

Robbins' Separate Report

It could hardly be expected that Robbins would concur with such anti-deflationary policies as proposed by Keynes, Pigou and Henderson as a remedy for the slump. For, aside from their objectionable nature on other than economic grounds, such policies, according to Robbins, rather than effectively fighting the cause would only mitigate the symptoms; at the end they would only succeed in making things worse. For Robbins there could hardly be any way out other than deflation. Not that he was blind to the celebrated rigidities in the price and income structure. Robbins, however, in sharp contrast to, say, Pigou, could not afford to accept such obstructions as given. For his analysis being perhaps of a broader scope and a more long-term nature than that of Pigou, pointed to the fundamental contradiction inherent in the prolonged symbiosis of these obstructions with an essentially capitalistic organization of production. And it is, indeed, of some curiosity that whereas Pigou saw no such immanent contradiction in the economic life of modern

communities it was the later Keynes who, from an entirely different starting point, arrived at a conclusion quite similar to that of Robbins.

Even though Robbins could not have accepted the majority's verdict on the use of fiscal and monetary policies as tools for economic stabilization he thought it advisable to concentrate his fire on the Committee's favorable treatment of protectionism. Robbins began by pointing out that if a reduction of real wages, albeit desirable, was difficult to achieve "by calm and straightforward reasoning" it should most certainly be unacceptable to attempt to do so by indirect methods, i.e. by the imposition of tariffs.²⁶ But even if the moral aspect of the issue be ignored it remains highly questionable whether, as a means of combating depression, tariffs would prove effective. For, beyond its narrow economic implication, a tariff carries with it a wider message in that it constitutes

an affirmation of separatism, a refusal to cooperate, a declaration of rivalry. That twelve years after a war which devastated civilization ... we should even be discussing such measures, is a sad reminder, not only that some people lose faith in a great ideal when it is not realized quickly, but that most are totally blind even to the most obvious considerations of material interest.²⁷

Especially in the case of England, Robbins argued, the adoption of a policy of protectionism would produce, in the

rest of the world, repercussions serious enough to more than offset any conceivable benefit.

Was Keynes and company ignorant of these dangers? Not at all. For as they emphasized

a tariff may be a means of snatching, at the expense of the other countries, an advantage for ourselves which is not so great as the damage done to them; so that if everyone plays the same game, the world as a whole is worse off. The world would be richer under a system of general free trade than it is.

What then is the explanation of the difference of opinion between Keynes and Robbins? Or, for that matter between, Robbins and Henderson? There can only be one answer, i.e. that economists' policy recommendations are conditioned by their social philosophies, by their value judgments. To Keynes the cost of widespread unemployment was so great that he was willing to try any remedy, however risky, provided that it showed some promise as a means of combatting unemployment. To Robbins, on the other hand, the ideal of internationalism was sacrosanct so that he refused to even contemplate the policy of protectionism. In this respect it is again instructive to note that great men can often perceive the ideological bias of their opponents yet they fail to see their own. For, in fact, Keynes had admitted that Robbins entertains "a genuine scruple of conscience about [the] issue" of international free trade. The one thing he was unable to

realize was that the conflict over the Committee's report was as much the result of his own bias as those of Robbins.

NOTES

1. John Maynard Keynes, Collected Writings (MacMillan, London, 1981), vol.XX, p.389.
2. Lionel Robbins, Autobiography of an Economist (MacMillan, London, 1971).
3. See the Report of the Committee of Economists as reprinted in Susan Howson and Donald Winch, The Economic Advisory Council 1930-1939 (Cambridge University Press, Cambridge, 1977), pp.180-243.
4. *ibid.*, p.183.
5. *ibid.*, p.183.
6. *ibid.*, pp.186-187.
7. *ibid.*, p.188.
8. *ibid.*, pp. 189-190.
9. *ibid.*, p.200
10. *ibid.*, p.200.
11. *ibid.*, p.200.
12. *ibid.*, p.201.
13. *ibid.*, p.198.
14. *ibid.*, pp.204-205.
15. *ibid.*, p.205
16. *ibid.*, p.223.
17. *ibid.*, p.222.
18. *ibid.*, p.226.
19. John Maynard Keynes, *op. cit.*, vol.XX, pp.463-465.

20. *ibid.*, p.404.
21. H. Thornton, An Enquiry into the Nature and Effects of the Paper Credit of Great Britain (London, 1802), pp.227 et seq.
22. F.A. Hayek, Monetary Theory and the Trade Cycle (Augustus M. Kelley, Clifton, 1975), pp.178-179.
23. *ibid.*, pp.172-173.
24. *ibid.*, p.176.
25. *ibid.*, p.20.
26. Report of the Committee of Economists, *op. cit.*, p.229.
27. *ibid.*, pp.229-230.

EPILOGUE

Keynes' account of the "classical" theory has, over the years, conquered the economics profession and almost been elevated to the status of conventional wisdom. Present-day readers will therefore feel perfectly at ease with the following passage which, quoted from one of our leading textbooks, faithfully reflects what may be considered as almost complete unanimity on the subject: "[The] features [of the Keynesian model] stand in sharp contrast to those of the classical model, in which full employment is guaranteed and fiscal and monetary variables have no impact on output and employment at a point in time."¹

Even knowledgeable students of the history of economic thought have taken a stance which, in effect, amounts to little more than a complete acceptance of Keynes' account. Thus Patinkin is able to write: "[B]y the end of the 1920's in Britain, as the unemployment ... dragged on, most British economists [including even Pigou] were advocating public works as a means of reducing unemployment."² Pigou's treatment at the hands of Keynes must, indeed, have been so devastating that even competent historians feel astonished at the fact that the archvillain in Keynes' story could have advocated "public works as a means of reducing unemployment."

Yet it never occurred to people to ask how it was possible for classical economists to openly advocate public

expenditure as the solution to the great slump and yet, at the same time, to base such policies on a model in which, as Keynes and company would have us believe, "full employment is guaranteed and fiscal and monetary variables have no impact on output and employment"? Were Keynes and Pigou the implacable adversaries, on both theoretical and practical grounds, that one might have expected on the basis of Keynes' account in the General Theory? The evidence suggests that, in 1928-1932, Pigou and Keynes were in fundamental agreement in their diagnosis and prescribed treatment of the ills that plagued the British economy. They were convinced that the economy's troubles were directly attributable to the insufficiency of aggregate spending and that any effective solution could have come about only along the lines of the State, directly or indirectly, increasing and supplementing the inducement to spend. The above statement, hardly challenged as regards Keynes, is received with disbelief in the case of Pigou. And yet Pigou's testimony to the MacMillan Committee is plain:

[T]here has been a substantial amount of this slowing off in expenditure.... That is the fundamental thing. It is the fundamental thing behind the fall in the money income stream which in turn has been associated with the diminution of employment in consequence of the rigidity of the money wage rate.³

As if to leave no doubt about Pigou's stance Keynes asked the witness if "the remedy might take the form of changes in

demand" to be answered with a resounding Yes. Pigou, however, was not content to merely respond to Keynes' inquisition. He expounded his views on policy in his "Note by the Witness" which supplements his oral testimony to the MacMillan Committee. In his forceful advocacy of stabilization policy Pigou went so far as to state that the effective coordination of fiscal and monetary measures would forestall crowding-out effects on private investment. In Pigou's words "the Bank of England and the banking system should not hesitate to allow the volume of bank deposits to expand so that the money needed to finance these undertakings will not need to be withdrawn from other forms of expenditure." All this comes from the man who supposedly is the most sophisticated exponent of the model "in which full employment is guaranteed and fiscal and monetary variables have no impact on output and employment."

To say that Keynes' criticism of the "classical" economists has no justification in the facts and that, as a consequence, there could not have been a Keynesian Revolution in economic theory, is by no means an attempt to belittle Keynes' contribution. In fact no better demonstration of Keynes' significance can be had than Pigou's own evaluation of the General Theory. Pigou undertook the task of providing a critical account of Keynes' book in two lectures that he delivered at Cambridge in November 1949.

Pigou frankly acknowledged the vital contribution the

book made in effectively destroying the "Treasury view", namely, the notion that, in a period of depression, increased thriftiness provided the way out of the slump. Indeed, going through Pigou's own words, one is left wondering whether he did not find some ex post justification in Keynes' misrepresentation of the "classical" economists in view of the Keynes' all-out effort to eradicate the "Treasury view". "This conclusion" (about the Paradox of Thrift) Pigou said

is probably, as regards its effects on the attitude and policy of practical men, the most important element in Keynes' teaching. Whatever the justice of his criticism of the 'classical economists' there can be no doubt that in the period of the great slump many people did believe that thriftiness ... would merely transfer employment from consumption to investment, thus not reducing it at the time and ultimately, in consequence of the contribution made to capital equipment, stimulating it. They believed this ... as regards periods of slump. Nobody doubts any longer that Keynes' argument is correct.⁵

The General Theory, however, was far from being influential in the realm of public policy alone. It had left an indelible mark on the minds of economists. What was the book's lasting contribution to the way we think about economic problems? Here is what Pigou had to say

The kernel of Keynes' contribution to economic thinking is to be found, as I have already said, in the short passage quoted from p. 246 of his book. Whatever imperfections there may be in his working out of the fundamental conception embodied there, the conception itself is an extremely fruitful

germinal idea.⁶

He went on to explain Keynes' fundamental conception as follows:

Nobody before him, so far as I know, had brought all the relevant factors, real and monetary, at once together in a single formal scheme, through which their interplay could be coherently investigated. His doing this does not, to my mind, constitute a revolution. Only if we accepted the myth -as I regard it- that earlier economists ignored the part played by money, and even when discussing fluctuations in employment, tacitly assumed that there weren't any, would that word be appropriate. I should say, rather, that, in setting out and developing his fundamental conception, Keynes made a very important, original and valuable addition to the armoury of economic analysis.⁷

As must be clear by now the basic thesis of this essay is essentially the same as that of Pigou. In his account of "classical" economics, however, Pigou refrained from saying that, although not perhaps put together in the form of a formal scheme, all the elements for an insightful explanation of cyclical unemployment were present in his own work. The modern theorist's challenge and obligation is to reconstruct, from this largely neglected material, a Pigovian model of the economy. In it, it is hoped, will be found, albeit belated and insufficient, the vindication of the "classical" scholar.

NOTES

1. Thomas Sargent, Macroeconomic Theory (Academic Press, New York, 1979), p.46.
2. Don Patinkin, Anticipations of the General Theory (The University of Chicago Press, Chicago, 1982), p.6.
3. Committee on Finance and Industry (MacMillan Committee), Minutes of Evidence (H.M.S.O., London, 1931), Q.6633.
4. A.C. Pigou, "Note by the Witness", Committee on Finance and Industry, op. cit., p.99.
5. A.C. Pigou, Keynes's General Theory: A Retrospective View (MacMillan, London, 1951), pp.40-41.
6. *ibid.*, p.65.
7. *ibid.*, pp.65-66.

APPENDIX A

A Simple Pigovian Model of the Economy

In 1936 Keynes put forward his view of what he called "classical" economics. His synopsis of the "classical" theory is found in Chapter 2 of his General Theory. In it Keynes has argued that the work of A.C. Pigou is "the only detailed account of the classical theory of employment which exists". He went on to add that, in the context of classical theory,

"there are only four possible means of increasing employment:
(a) an improvement in organization or foresight
... which diminishes "frictional" unemployment
(b) a decrease in the marginal disutility of labour
... so as to diminish "voluntary" unemployment
(c) an increase in the marginal physical productivity of labour in the wage-goods industries ...
(d) a shift in expenditure of non-wage-earners from wage-goods to non-wage-goods"¹

Keynes concluded his castigation of "classical" economics by stating that "the fundamental theory underlying [the determination of actual employment] has been deemed so simple and obvious that it has received, at the most, a bare mention."²

In all of the above, and more, Keynes was wrong. Yet, somehow, his interpretation of "classical" economics has become "conventional wisdom" and has come to dominate almost every account of the evolution of economic thought (with the

notable exception of Schumpeter³.) What follows is an attempt to set the record straight. We focus on the work of A. C. Pigou, the leading exponent, by Keynes' own admission, of the classical theory in Keynes' time. More concretely we shall attempt to present Pigou's ideas in a systematic way, drawing on his twin great works The Theory of Unemployment (1933) and, more importantly, Industrial Fluctuations (1929).

At first we develop a very simple model of the economy. We believe that, in spite of its highly simplified structure, exploring this model is not a futile exercise. This is so for two reasons: to begin with, although the interest elasticity of demand for real money is assumed to be zero, the model remains instructive in highlighting the nature of some of the most acrimonious debates of the 1920's and 1930's. Second, and equally important, in his Industrial Fluctuations Pigou asserted that there is a distinct group of factors underlying changes in employment and output (real causes he termed them) which could, in principle, be treated separately from monetary causes.⁴ Pigou readily admitted, of course, that in actual economies real and monetary causes act jointly to produce the observed fluctuations in employment and output. He even emphasized that the economic outcome of real causes, i.e., their effects on employment and output, is conditioned on the operation of the monetary system.⁵ He nevertheless found it useful to begin his analysis by studying real disturbances independently of the monetary system. We shall follow his

lead.

After this preliminary investigation, however, we shall develop a more complete and powerful model in which the interest-elasticity of money demand is explicitly introduced. We then explore this more elaborate model thoroughly and try to see if we need to modify our conclusions.

We begin by recognizing that, in any exposition of Pigou's economics, it is essential to distinguish between the consumer-goods sector and the capital-goods sector. It is clearly the legacy of the "Keynesian Revolution" to cast macroeconomic models in a one-commodity setting. Whether such aggregation is useful for some purposes, Pigou's conception of the macroeconomic process requires a different level of aggregation.

We assume that, in each sector, output is related to inputs via an aggregate production function. It is important, however, to stress the nature of technology: labor physical productivity is constant so that our production functions may be written as $Y_c = aN_c$ and $Y_k = bN_k$ where Y_c , N_c , Y_k , N_k represent the levels of output and employment in each sector and a , b labor's (constant) average product in each industry. We may justify our assumption about labor productivity by linking the rate of utilization of capital to the actual rate of employment. If the two rates move together over the course of the trade cycle we should expect that the capital-labor ratio and perhaps labor productivity remain approximately

constant. Such reasoning may appear to contradict the familiar postulate of a fixed and fully utilized capital stock with diminishing returns to labor. We think, however, that this requirement is probably more important to Keynes' exposition than it is to Pigou's. Indeed there is some discussion in Industrial Fluctuations which suggests that the countercyclical behavior of labor productivity was, in Pigou's mind, far from being a settled matter.⁶

We shall initially suppose that the level of employment in the consumer-goods sector is constant. This may be due to an entirely inelastic labor supply coupled with institutional and other barriers that prevent the free movement of labor across sectors. We may, for instance, identify the consumer-goods sector with agriculture and suppose that, at least in the short-run, it is especially costly (prohibitive?) to move between city and countryside and that all those who find themselves in the countryside are, because of social custom and tradition, constantly employed. The assumption of constant employment in the consumer-goods industries is consistent with Pigou's own account of the scope and magnitude of fluctuations in employment in different industries.⁷

We now specify the pricing behavior of firms in our economy. Here we depart from the well-known supposition that price is determined by the market. We posit instead that firms in each sector set their prices on the basis of labor

costs plus a (constant) markup. Thus we may write that $p_c = (1 + x)w/a$ and $p_k = (1 + x)w/b$ where p_c , p_k are the unit (nominal) prices of consumer and capital goods, $1/a$, $1/b$ are the (constant) unit labor requirements in each industry and x (the markup) is expressed as a (constant) percentage of unit labor costs. Notice that we have asserted a common markup for both industries. If so commodities must exchange on the basis of their labor content and their relative price depends strictly on the arbitrarily chosen units of measurement.

What about the behavior of workers viz a viz the money rate of wage? This is a crucial point for, in the standard textbook treatment of the "classical" model, money wages are assumed to be fully flexible. This is a serious error. As a matter of fact, Keynes never imputed such assumptions to "classical" economists for he was only too well aware that rigidity of money wages was an integral part of their analysis. We shall then suppose, following Pigou, that, in the short-run, the money rate of wage is constant.⁸ Once we recognize the rigidity of money wages we can complete the model by specifying the goods-market equilibrium conditions. We exclude by assumption any trading of stocks of physical capital not just across sectors but also between firms within the same sector and we posit instead a "flow" investment demand function, $I = I(i)$. The rate of addition to the stock of physical capital depends inversely on the rate of interest

($I_1 < 0$). We can now write the "loanable-funds" market equilibrium condition: $S = I(i)$ where S is the real rate of saving (supply of loanable funds). The rate of interest is supposed to adjust freely to equate supply of, and demand for, loanable funds.

What about the market for consumer goods? Here we need to distinguish clearly between the consumption patterns of different people. Suppose that the consumption of capitalists is fixed by social custom whereas the consumption of workers equals their entire income. This assumption partially reflects Pigou's (and others) empirical observation that most saving is done by rich people. We then write the consumer-goods market equilibrium condition:

$$Y_c = C_k + (w/p_c)(N + N_k)$$

where C_k represents the (constant) consumption of capitalists and the other term, the combined consumption of workers in both sectors.

Collecting equations we can write the complete model as follows:

- (1) $Y_c = a\bar{N}$
- (2) $Y_k = bN_k$
- (3) $Y_c = C_k + (w/p_c)(N + N_k)$
- (4) $S = I(i)$

The model consists of four equations which can potentially determine our four unknowns, i.e., Y_c , N_k , Y_k , i .

The workings of the model can be seen by inspection of equations (1)-(4).

Specifically, since $N_c = \bar{N}$ by assumption, equation (3) can determine N_k (the equilibrium level of employment in the capital-goods sector); we can then use equation (2) to immediately retrieve Y_k . Equation (4) is then seen to determine the equilibrium rate of interest. Can we rest assured that the capital-goods market clears, i. e., is it necessary that $Y_k = I$? The answer is yes. We remember that, in our economy, the real rate of saving equals the rate of saving of capitalists. We can then write:

Total saving = Capitalists' Income - Capitalists' Consumption
or, more compactly,

$$S = Y - (w/p_k)(\bar{N} + N_k) - pC_k$$

where $Y = pY_c + Y_k$, $p = p_c/p_k$ and S is total saving measured in units of capital goods. It is then easily seen that

$$S = Y_k + p[Y_c - C_k - (w/p_c)(\bar{N} + N_k)]$$

But, in equilibrium, the term within brackets must necessarily be zero (by equation (3)). It then follows that $S = Y_k$. Thus if the consumer-goods and the loanable-funds markets clear so does the capital-goods market.

Now we are ready to deal with the famous "crowding-out" argument as it was presented in the 1920's and 1930's. Suppose, for instance, that the government purchases capital goods at the real rate G . It is further supposed that the

government finances its purchases by issuing bonds. Equation (4) must then become:

$$S = I(i) + G \quad (4')$$

Imagine then that the government increases the real rate of its purchases of capital goods. Does this lead to an increase in employment and output in the capital-goods sector? To answer this question we remember that, in equilibrium,

$$S = Y_k = bN_k$$

it then follows from equation (4') that

$$bN_k = I(i) + G \quad (5)$$

But N_k is exclusively determined by equation (3) and is readily found to be :

$$N_k = x\bar{N} - [(1 + x)/a]C_k$$

Totally differentiating (5) and making use of the above result for N_k we see that $dI + dG = 0$ or $dI = -dG$, i.e., an increase in government purchases of capital goods reduces private investment by exactly the same amount. This is the "crowding out" argument made by the civil-servant economists of the British Treasury throughout the late 1920's and 1930's. Unfortunately, nowadays, such reasoning has come to be associated with "classical" economics. To repeat ourselves: it is at best inaccurate to suppose, as is so often done today, that any leading economists were proponents of this argument in the 1920's. Pigou, especially, pointed out very emphatically that perfect crowding-out was the implication of

the strange assumption that demand and supply of consumer goods were perfectly rigid.⁹ For suppose that we were to partially relax the assumption of perfect rigidity, i.e., suppose we recognize that the consumption of capitalists depends partly on the rate of interest. We should then rewrite equation (3) as follows:

$$Y_c = C_k(i) + (w/p_c)(\bar{N} + N_k) \quad (3')$$

where C_k still denotes the consumption of capitalists which we now assume depends inversely on the rate of interest

($C_i < 0$). The modified model can be solved by the following procedure: First differentiate (3') totally remembering that

$$Y_c = a\bar{N}$$

to get: $C_i di + (a/1+x)dN_k = 0$ or $di/dN_k = - a/(1+x)C_i > 0$

This is the slope of what we shall call the CE curve, i.e., the locus of points in the N_k, i space which ensure that the consumer-goods market clears. The positive slope of the CE curve is intuitively clear: if there is an increase in employment in the capital-goods sector the resulting excess demand for consumer goods can only be eliminated through a rise in the rate of interest.

Now remembering the definition of real saving and substituting into (4') we obtain:

$$Y_k + pY_c - [(w/p_k)(\bar{N} + N_k) + pC_k(i)] = I(i) + G \quad (6)$$

where the left-hand side of (6) is again saving measured in units of the capital-good. Differentiating (6) totally we have:

$$b dN_k - (w/p_k) dN_k - p C_1 di = I_1 di \quad (\text{setting } dG = 0)$$

or, equivalently,

$$(b - (w/p_k) dN_k = (I_1 + C_1) di$$

and, finally,

$$di/dN_k = (b - w/p_k)/(I_1 + p C_1) < 0$$

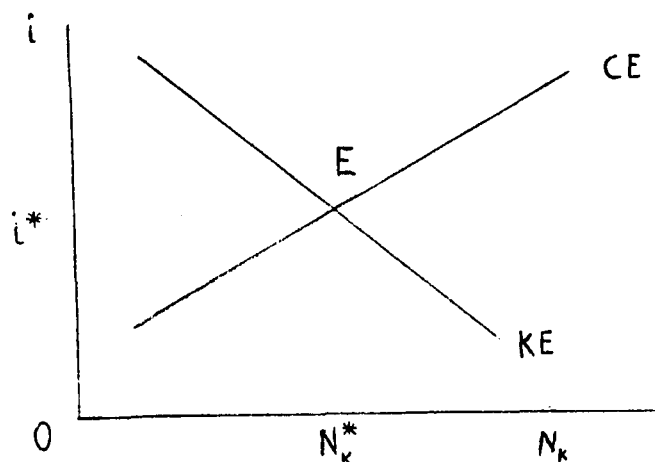
This is the slope of the KE curve, i.e., the locus of, points in the N_k, i space that ensure that the market for loanable funds clears. Is the slope of the KE curve positive or negative? Since the denominator is assuredly negative the slope will also be negative if $b - w/p_k > 0$. But we know that

$$w/p_k = w/[(1+x)w/b] = b/(1+x)$$

Since by assumption $x > 0$ it follows that $b > b/(1+x) = w/p_k$ hence

$$di/dN_k \Big|_{KE} < 0$$

The reason for the downward-sloping KE curve is straightforward: an increase in the capital-sector's employment must, at any given interest rate, increase the real rate of saving. To ensure equilibrium the rate of interest must fall to induce both higher real consumption by capitalists and higher investment thus closing the gap between supply and demand for loanable funds. The economy's complete equilibrium can be shown diagrammatically by bringing together the CE and KE curves.



At the point of intersection of the CE and KE curves all markets clear. We can then go back to equation (2) and retrieve the equilibrium Y_k , i.e., the equilibrium output of the capital-goods sector.

What about crowding-out and the effectiveness of fiscal policy? An increase in the real rate of government purchases of capital goods must, *ceteris paribus*, lead to excess demand for loanable funds and hence to a higher rate of interest to restore equilibrium. We now show this formally. We begin by remembering that the real rate of saving equals the rate of saving of capitalists. Thus we write:

$$S = Y_k + pY_c - (w/p_k)(\bar{N} + N_k) - pC_k(i)$$

where S is saving measured in units of the capital-good and $p = p_c/p_k$ (the relative price of consumer goods). Hence our equilibrium condition for the market for loanable funds becomes:

$$Y_k + pY_c - (w/p_k)(\bar{N} + N_k) - pC_k(i) = I(i) + G \quad (7)$$

Totally differentiating (7) and setting $dN_k = 0$ we get:

$$-pC_1 di = I_1 di + dG \quad \text{or} \quad di/dG = -1/(pC_1 + I_1) > 0$$

Clearly the KE curve shifts bodily upwards resulting in a new equilibrium with higher interest rate, employment and output in the capital-goods industries. Our previous result of perfect crowding-out is, as Pigou was the first to emphasize, the logical deduction of the "strange" assumption about the perfect rigidity of production and consumption of consumer goods. Once this assumption is removed fiscal policy becomes an effective instrument for increasing employment and output.

It is possible to find dN_k by first totally differentiating (3')

$$C_1 di + (w/p_c) dN_k = 0 \quad \text{or} \quad di = (-w/p_c C_1) dN_k$$

Then totally differentiating (7) and making use of the above result we have:

$$(b - w/p_k) dN_k = - (I_1 + pC_1) (w/p_c C_1) dN_k + dG$$

$$\text{or} \quad [b - w/p_k + (w/p_c C_1) (I_1 + pC_1)] dN_k = dG$$

which implies that

$$dN_k/dG = [b - (w/p_k) + (w/p_c C_1) (I_1 + pC_1)]^{-1}$$

Since $dY = b dN_k$ it follows that:

$$dY_k/dG = b [b - (w/p_k) + (w/p_c C_1) (I_1 + pC_1)]^{-1} \quad (8)$$

Now it is evident from (8) above that dY_k/dG is greater, equal or less than unity as

$$w/p_k \gtrless (w/p_c C_1) (I_1 + pC_1)$$

It can be shown, however, that, under our assumptions, it must be that

$$w/p_k < (w/p_c C_1)(I_1 + pC_1) \text{ so that } dY_k/dG < 1$$

Remembering that

$$w/p_k = b/1+x, \quad w/p_c = a/1+x$$

it is readily seen that

$$w/p_k \gtrless (w/p_c C_1)(I_1 + pC_1)$$

reduces to

$$b \gtrless a[(I_1/C_1) + p] \quad (8')$$

Since $p = p_c/p_k = b/a$ (8') above reduces to

$$b \gtrless b + a(I_1/C_1)$$

Since, however,

$I_1, C_1 < 0$ it cannot be that $b \geq b + a(I_1/C_1)$

Thus we conclude that the fiscal-policy multiplier is less than unity.

We shall have more to say about the fiscal-policy multiplier shortly. First, however, we note that our model can be used to provide justification for one of Pigou's most interesting insights. Pigou did, in fact, believe that fiscal policy would yield its maximum effect during periods of severe recession. Fiscal expansion would operate not merely through its direct effects on employment and output but also through the psychological repercussions that increased employment would have on the confidence of entrepreneurs.¹⁰ It was, in fact, Pigou that directly challenged Keynes' emphasis on monetary policy when, in the MacMillan Committee, he stated that, under conditions of severe recession, monetary policy could not be counted on to do the job. The reason, according

to Pigou, was that psychological factors are of such paramount importance for investment demand that, in exceptionally bad times, the interest elasticity of demand for newly produced capital goods may become zero.¹¹ If this be so, fiscal policy becomes the appropriate policy instrument and a very effective one at that. For suppose that $I_1 = 0$. It is then readily seen from (8) above that $dY_k/dG = 1$. The fiscal policy multiplier is no longer less than one; instead an increase in public expenditure translates dollar for dollar into increased national income.

It should be emphasized that, even if I_1 is different than 0, the somewhat harsh result that the fiscal-policy multiplier is less than unity can be modified if we relax the assumption of a fixed supply of consumer goods. Suppose then, along with Pigou, that there exists at any point in time a stock of consumer goods at the hands of capitalists in the capital-goods sector whose rate of utilization, i.e., the rate at which it is being advanced by capitalists to workers, depends on the number of people employed in the capital-goods industries.¹² We may formalize Pigou's argument by writing the real rate at which the supply of consumer goods is now being forthcoming as:

$$Y_c + R(N_k)$$

where R stands for the new element in the provision of consumer goods and may be either positive or negative. It should be remembered, however, that $R' > 0$, i.e. R, N_k move in

the same direction. The consumer-goods market equilibrium condition becomes:

$$Y_c + R(N_k) = C_k(i) + (w/p_c)(\bar{N} + N_k) \quad (3'')$$

Total differentiation of (3'') yields:

$$R'dN_k = C_1 di + (w/p_c)dN_k$$

so the slope of our new CE curve is:

$$di/dN_k = [(-w/p_c) + R']/C_1 \quad (9)$$

If we assume that $w/p_c > R'$ our modified CE curve continues to be upward-sloping. How does the slope compare with the slope of the previous CE curve? It is evident that the introduction of a somewhat elastic supply of consumer goods has made the CE curve flatter. This means that, for any given increase in G , the effect on employment and output will now be larger. In fact, if $R' = w/p_c$ the CE curve becomes horizontal. It is even conceivable if R' is sufficiently large relative to the real wage, i.e., if $R' > w/p_c$, that the CE curve becomes downward-sloping.

We can establish these points formally with the aid of (3'') and (4'). But we must first note a crucial point: the loanable-funds market equilibrium condition must now be modified to reflect the additional source of financing demand for newly produced capital goods, i.e., $R(N_k)$. We thus rewrite the loanable-funds market equilibrium condition as:

$$S + pR(N_k) = I(i) + G \quad (4'')$$

where we have assumed, for simplicity of exposition, that the markup equal zero. Totally differentiating (4'') and setting

$dG = 0$ we get:

$$(b - (w/p_k) + pR')dN_k = (I_1 + pC_1)di$$

from which we can derive the slope of the KE curve:

$$di/dN_k = [b - (w/p_k) + pR'] / (I_1 + pC_1) < 0 \quad (9')$$

Now totally differentiating (3'') we have:

$$di = [R' - (w/p_c)]dN_k/C_1$$

Substituting this result into the total differential of (4'')

above we get:

$$(b - (w/p_k) + pR')dN_k = (I_1 + pC_1)[(R' - w/p_c) dN_k/C_1 + dG]$$

from which we can obtain dN_k/dG . It turns out that

$$dN_k/dG = [b - (w/p_k) + pR' - (1/C_1)(I_1 + pC_1)(R' - (w/p_c))]^{-1}$$

Call the term within brackets A. Knowing that $dY_k = b dN_k$ it follows that $dY_k/dG = bA^{-1}$. In fact A can be reduced to a simpler expression. Specifically:

$$\begin{aligned} A &= b - (w/p_k) + pR' - (I_1/C_1)(R' - w/p_c) - pR' + w/p_k = \\ &= b - (I_1/C_1)(R' - w/p_c) \end{aligned}$$

Hence

$$dY_k/dG = b[b - (I_1/C_1)(R' - w/p_c)]^{-1} \quad (10)$$

We can then distinguish between three different cases:

1. $R' < w/p_c$. We remember from equation (9) that this case corresponds to the CE curve being upward-sloping. It is readily seen from (10) above that in this case

$$0 < dY_k/dG < 1$$

i.e., that the fiscal multiplier continues to be less than unity.

2. $R' = w/p_c$. In this case the CE curve must be horizontal.

From equation 10 above it is readily seen that $dy_k/dG = 1$ or, in plain English, that the fiscal multiplier equals one.

3. $R' > w/p_c$. In this case the CE curve becomes necessarily downward-sloping (see equation (9)). What about the fiscal multiplier? It is clear from equation (10) that

$$dy_k/dG > 1 \text{ if } b > (I_1/C_1)(R' - w/p_c)$$

What is the meaning of the above expression? It is quite simple. By straightforward manipulation we have:

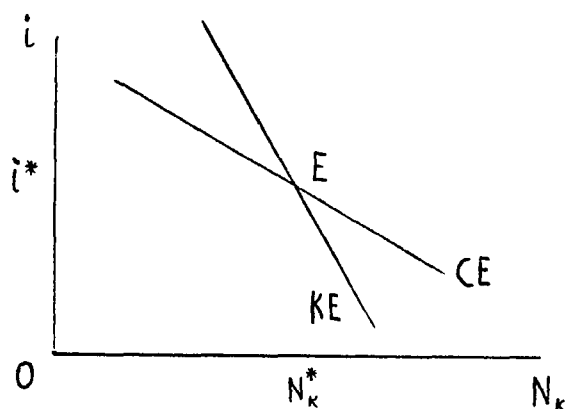
$$\begin{aligned} b &> (I_1/C_1)(R' - w/p_c), \text{ or equivalently,} \\ b - (w/p_k) + pR' &> (I_1/C_1)(R' - w/p_c) - (w/p_k) + pR' = \\ &= (I_1/C_1)(R' - w/p_c) + (p_c/p_k)(-w/p_c + R') = \\ &= [(I_1/C_1) + p](R' - w/p_c) = (1/C_1)(I_1 + pC_1)(R' - w/p_c) \end{aligned}$$

or, equivalently,

$$[b - (w/p_k) + pR'] / (I_1 + pC_1) < [R' - (w/p_c)] / C_1$$

But this states, in fact, precisely that the algebraic value of the slope of the KE curve be less than that of the CE curve at the point of equilibrium (see equations (9), (9')). To put it differently, the condition for the fiscal multiplier to exceed unity states that both the KE and CE curves be negatively sloping and, further, that the KE curve be steeper than the CE curve at the point of equilibrium.

The diagrammatic representation of this situation is shown on the next page:



The initial equilibrium is shown at point A with N_k^* , i^* the equilibrium configuration of the rate of interest and employment in the capital-goods industries. It is readily seen that, in this case, an increase in government purchases of capital goods results in a new equilibrium (point A') with lower interest rate and higher level of employment and output in the capital-goods sector. We have shown that, in this case, the fiscal-policy multiplier exceeds unity.

Our model suggests that it is possible, if both $R' > w/p_c$ and $b < (I_1/C_1)(R' - w/p_c)$, for an increase in G to actually lower output and employment in the capital-goods industries. Diagrammatically the CE and KE curves would both be negatively sloping with the KE curve being flatter than the CE curve. We shall ignore, along with Pigou and Keynes, this case as not empirically interesting.

SOME MORE COMPARATIVE STATICS

The model can be put to use to study the comparative-

static effects of alternative disturbances. We will concentrate on a "real" disturbance, that was of particular interest to Pigou, i.e., a productivity shock in the consumer-goods sector. We denote the real shock by a change in a (the average labor productivity in the consumer-goods industries).

We go back to our consumer-goods market equilibrium condition (3') and differentiate totally to obtain:

$$\bar{N}da = C_1di + (w/p_c)(\bar{N} + N_k)(da/a)$$

(setting, of course, $dN_k = 0$). After multiplying through by a and rearranging we obtain:

$$[a\bar{N} - (w/p_c)(\bar{N} + N_k)]da = aC_1di \quad (11)$$

Since, however, $a\bar{N} = Y_c$ it follows that the term within brackets equals the consumption of capitalists in both sectors (C_k). Making use of this result in (11) we are able to obtain:

$$\left. \frac{di}{da} \right|_{CE} = C_k/(aC_1) < 0 \quad (12)$$

This implies that, for instance, a positive productivity shock in the consumer-goods sector must necessarily shift the CE curve downward. On account of the downward shift in the CE curve output and employment in the capital-goods industries increase.

What about the KE curve? Total differentiation of (6) readily yields (setting $dN_k = 0$):

$$[(-p/a)Y_c + p\bar{N} + pC_k/a]da = (pC_1 + I_1)di$$

But clearly $(-p/a)Y_c = -p\bar{N}$ so we have:

$$di/da \Big|_{CE} = pC_k / [a(pC_1 + I_1)] < 0 \quad (13)$$

This means that a positive productivity shock in the consumer-goods sector will also shift the KE curve downward. On account of the downward shift of the KE curve alone output and employment in the capital-goods industries would decrease.

What is the final outcome? To answer this question we recall from (12) that the CE curve will shift vertically downward by:

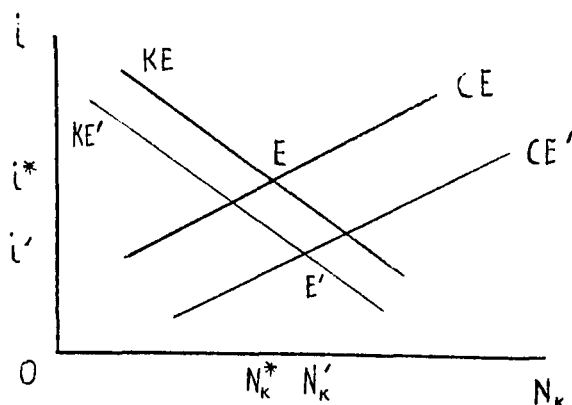
$$(C_k/aC_1)da$$

whereas the KE curve will shift by:

$$(C_k/[aC_1 + (aI_1/p)]) da$$

(from (13) after multiplying and dividing by $1/p$).

It is clear that the CE curve shifts vertically by more, thus raising employment and output in the capital-goods industries at the new equilibrium. This situation is depicted graphically on the next page. (The graph corresponds to the simplified case in which both C_1 , I_1 are assumed to be constant.)



The last comparative statics effect that we consider in this model is an increase in productivity in the capital-goods sector, i.e., a change in b . Notice, crucially, from (3') that b does not affect the position of the CE curve in space. We then go to (6) and, differentiating totally, we have:

$$N_k db + pY_c (db/b) - (w/p_x)(N + N_k) db/b - pC_x db/b = (pC_1 + I_1) di$$

or, equivalently,

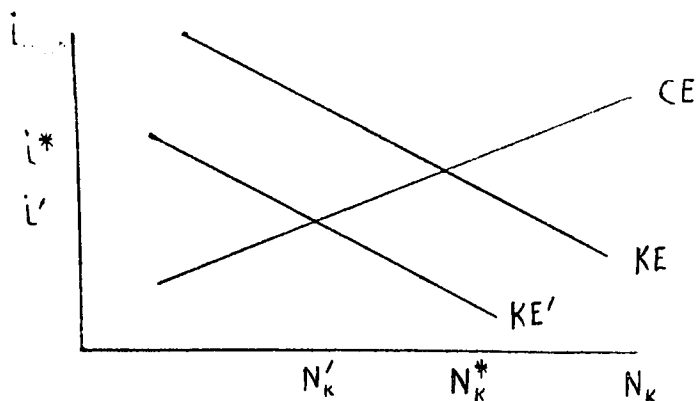
$$[N_k + N - (N + N_k)/(1+x) - C_x/a] db = (pC_1 + I_1) di$$

Multiplying through by a and remembering that, in equilibrium, $Y_c - [(w/p_x)(N_k + N) + C_k] = 0$ the above expression reduces to

$$aN_k db = (bC_1 + aI_1) di$$

from which we see that $di/db \Big|_{KE} = aN_k / (bC_1 + aI_1) < 0$

It is clear that a positive productivity shock shifts the KE curve downward so that, at the new equilibrium, interest rate, employment and output in the capital-goods industries are all lower.



Now this apparently "strange" result, i.e., that technical progress would lead to a depression goes, in fact, a long way to explain differences between leading trade cycle theorists in the 1930's. To begin with, our result is consistent with Keynes' doctrines. Indeed Keynes, for all attempts to make his message innocuous, was, in fact, convinced that capitalism was doomed. The crucial weakness of a free-market economy, according to Keynes, was the weakness of the inducement to invest. Keynes argued that, if left to itself, a capitalist economy was bound to collapse because the inducement to invest in the private sector was, in the "mature" capitalist stage, insufficient to maintain a tolerable level of employment.¹³ Our model offers, in fact, a powerful rationalization of Keynes' intuition. Technical progress and the accumulation of capital must, over time, increase potential output in the capital-goods sector. Unless total spending on newly produced capital goods is somehow increased *pari passu* with the economy's ability to produce such goods excess capacity and unemployment must occur. It

might be supposed that technical progress in the consumer-goods sector too would shift the CE curve downward thus offsetting the depressing effects of the increased b in the capital-goods sector. This argument, however, rests on the assumption that the rate of interest is fully and immediately flexible downward. If, for some reason, i is prevented from falling freely then our system of equations may not be capable of determining equilibrium values for i , N_x , Y_x . We then have to admit that our model cannot represent adequately Keynes' liquidity trap.

Now there was far from unanimity among business-cycle theorists on the points raised by Keynes. Leading economists like Pigou and Schumpeter had a very different conception of the economic process. They argued that technical progress and capital accumulation do not occur in a vacuum. Technical progress is usually embodied in new machines and it certainly takes time to install the new machines. Thus, they argued, a once-for-all jump in b must be ruled out. What, in fact, happens is that the successful introduction of new processes of production (and the new machines that make such processes feasible) necessitates a period of heavy investment.

During such periods an additional I term (\bar{I} ?) appears in equation (4) reflecting the "autonomous" desire of entrepreneurs for the capital goods that will support the novel processes of production. Thus, in a period of investment boom the KE curve in Figure 4 shifts upward with

rising N_k, Y_k and i . Later when the new processes of production have been sufficiently imitated the expected profitability of further investment declines with the KE curve shifting down and to the left with lower employment, output and interest rate. Such undoubtedly was the explanation of business cycles proposed by Schumpeter.¹⁴ Pigou was in the middle of road between Keynes and Schumpeter. He undoubtedly believed that "epoch-making" inventions are occasionally sufficiently potent to generate substantial cyclical fluctuations. Yet he remained skeptical of the frequency of such monumental technical discoveries to merit inclusion in his list of important causes of industrial fluctuations. He believed that one should pay more attention to the relatively steady stream of technical progress than to revolutionary changes in "the state of the art".¹⁵

In summary we should state that Keynes' analysis is consistent, in the long run, with an I in equation (4) which depends on K/L (the capital-labor ratio as a measure of the strength of the inducement to invest). Schumpeter and Pigou, on the other hand, have both emphasized an investment demand schedule that is quite volatile and whose abrupt shifts underlie cyclical movements in employment, output and the rate of interest. It should be emphasized, however, that whereas Pigou saw the addictive psychological moods of the market as a major force underlying investment boosts and busts, in Schumpeter's schema it was the "perennial process of creative

destruction" that governed the evolution of the capitalist engine. It is then no wonder that whereas Pigou, in fundamental agreement with Keynes, argued in favor of expansionary fiscal policy to combat the irrational tendency for investment to fall in periods of contagious pessimism, Schumpeter was really hostile to any such measures that, in his mind, signaled the beginning of the end for the capitalist system.

NOTES

1. John Maynard Keynes, The General Theory of Employment, Interest and Money (Harcourt Brace Jovanovich, New York, 1964), p.7.
2. *ibid.*, p.7.
3. See Schumpeter's History of Economic Analysis (Oxford University Press, New York, 1954), Part V, Chapter 5, pp.1133-1135.
4. A.C. Pigou, Industrial Fluctuations (Augustus M. Kelley, New York, 1967), pp.35-36.
5. *ibid.*, pp.35-36.
6. *ibid.*, pp.9-11.
7. *ibid.*, pp.13-15.
8. *ibid.*, pp.192-203, 306, 307, 308, 309, 310.
9. *ibid.*, pp.315-317.
10. Committee on Finance and Industry (MacMillan Committee), Minutes of Evidence (H.M.S.O., London, 1931), Q.6610.
11. *ibid.*, Q.6610.
12. A.C. Pigou, Industrial Fluctuations *op. cit.*, pp.315-317.

13. John Maynard Keynes, The General Theory of Employment, Interest and Money op. cit., pp.372-374.
14. J.A. Schumpeter, Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process (McGraw-Hill, New York, 1939).
15. A.C. Pigou, Industrial Fluctuations op. cit., pp.46-50.

APPENDIX B

A Different Model

We now extend the model in two directions. Firstly we allow for changes in employment in the consumer-goods sector. In addition, we introduce explicitly an interest-elastic demand for real money. The model may thus be rewritten as follows:

$$Y_c = aN_c \quad (1)$$

$$Y_k = bN_k \quad (2)$$

$$Y_c = cY_R + (w/p_c)(N_k + N_c) \quad (3)$$

$$Y_k = I(i) + G \quad (4)$$

$$M/p_c = m(i, Y) \quad (5)$$

Notice, crucially, that equation (5) is the money market equilibrium schedule. For those who, on the basis of standard textbook exposition, think that "classical" formulations of money demand ought to be of the quantity-theory variety, we simply reiterate that the concept of liquidity preference was by no means, as even a cursory reading of Industrial Fluctuations would quickly reveal, Keynes' own discovery. We suppose, in agreement with standard assumptions, that $m_i < 0$, $m_y > 0$.

Notice, also, from equation (3), that we continue to assume that workers in both sectors consume their entire income. But there is an important difference: we now suppose that the influence of changes in the rate of interest on

capitalists' consumption is sufficiently small that can be ignored. Instead we posit that it is capitalists' real income (Y_R) that governs their real spending on consumer goods. In particular, it is assumed that the consumption of capitalists is proportional to their income (where the factor of proportionality, c , is restricted to be a positive fraction).

One last point about notation should be emphasized: Y (aggregate income) is presently measured in units of the consumer good and so is Y_R . More specifically:

$$Y = Y_c + (p_k/p_c)Y_k$$

where p_k/p_c is, of course, the relative price of capital goods.

Our model consists of five equations in five unknowns (N_k, Y_k, N_c, Y_c, i). The method of solution is slightly different than it was before. Instead of drawing the CE, KE curves in the N_k, i plane we now draw them in the N_k, N_c plane. The procedure is straightforward: Utilizing the definition of Y_R in (3) and after some manipulation we can rewrite the consumer-goods market equilibrium condition as follows:

$$Y_c = cY + s(w/p_c)(N_k + N_c) \quad (3')$$

Combining (1) and (3') and totally differentiating we get:

$$adN_c = cpbdN_k + cadN_c + s(w/p_c)dN_k + s(w/p_c)dN_c$$

from which it is readily seen that

$$dN_k/dN_c = [s(a - w/p_c)]/[cpb + s(w/p_c)] > 0$$

since clearly $a - (w/p_c) > 0$

The reason for the positive slope of the CE curve is clear: an increase in N_k (employment in the capital-goods sector)

must bring forth an excess demand for consumer goods. To restore equilibrium N_c and hence Y_c must necessarily increase.

We now combine (2) and (4) and then totally differentiate to get:

$$\begin{aligned} b dN_k &= I_1 di \quad \text{or equivalently,} \\ di &= (b/I_1) dN_k \end{aligned} \quad (6)$$

Similarly by total differentiation of (5) we have:

$$m_i di + m_y a dN_c + m_y p b dN_k = 0 \quad (7)$$

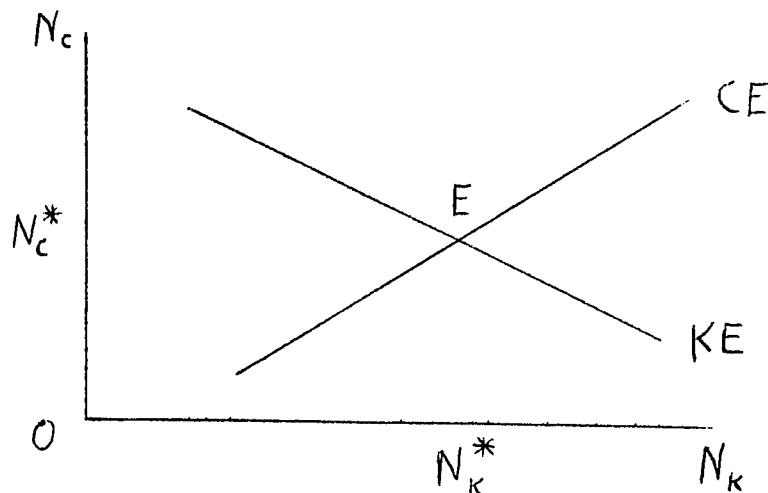
Substituting (6) into (7) above and rearranging we get:

$$[(m_i b / I_1) + m_y p b] dN_k = -m_y a dN_c$$

from which it is seen that

$$dN_c / dN_k = - [(m_i b / I_1) + m_y p b] / m_y a < 0$$

The slope of the KE curve is necessarily negative. If, for some reason, N_k were to increase then, to maintain equilibrium in the capital-goods sector, i must fall. On both accounts, however, (lower i and higher Y_k) demand for real balances must have increased. As long as the real money stock is constant, Y_c and hence N_c must fall to restore equilibrium.



COMPARATIVE STATICS

1. A CHANGE IN G

We can determine the effects of a change in the real rate of government purchases of capital goods by first concentrating on the capital-goods market equilibrium condition:

$$bN_k = I(i) + G$$

Totally differentiating the above and setting $dN_k = 0$ we have:

$$di = -(1/I_i)dG$$

By totally differentiating (5) (remembering that $dN_k = dY_k = 0$) and making use of the above result we get:

$$-(m_1/I_1)dG + m_y adN_c = 0 \quad \text{or finally,}$$

$$\left. \begin{array}{l} dN_c/dG \\ \text{KE} \end{array} \right| = (m_1/I_1 m_y a) > 0$$

Hence an increase in G shifts the KE curve upwards resulting in a new equilibrium with higher levels of employment and output in both industries.

What about the rate of interest? From total differentiation of (5) it is readily seen that

$$di = -(m_y/m_1)(adN_c + pbdN_k)$$

Dividing through by dG we have:

$$di/dG = -(m_y/m_1)(adN_c/dG + pbdN_k/dG) > 0$$

since, as we have already seen at the new equilibrium, both dN_c/dG , $dN_k/dG > 0$

Thus a fiscal expansion raises output and employment in both industries as well as the rate of interest, which, according

to Pigou, is typically the situation during a boom. It is then confirmed that, in this more complete model, public expenditure remains an effective weapon for combating unemployment, just as Pigou had claimed in the late 1920's and 1930's.

2. A CHANGE IN M

This is an especially interesting experiment since, in the literature, the "classical" model is identified, following Keynes' lead, with money neutrality. It has even been suggested that incorporating the "real balance effect" into the "classical" model somehow causes it not to be "classical" in that money ceases to be a veil.¹ The above are, of course, irrelevant to Pigou's macroeconomic model for he, of all economists, has stressed the potency of money to generate the fluctuations in employment and output that we observe in modern industrial communities.² Specifically Pigou listed changes in the level of the nominal money stock among the most important causes of the trade cycle.³

To see the effect of a change in M (the nominal money stock) on aggregate economic activity we differentiate (4) totally:

$$b dN_x = I_1 di$$

from which it is easily seen that

$$di = (b/I_1) dN_x \quad (8)$$

Now totally differentiating (5), setting $dN_c = 0$ and making

use of (8) above we readily obtain:

$$dM/p_c = [(m_1 b/I_1) + m_y p_k b] dN_k$$

It follows that $dN_k/dM \Big|_{KE} = [(p_c b m_1/I_1) + m_y p_k b]^{-1} > 0$

Thus in response to, say, an increase in M the KE curve shifts outward and to the right with the resulting new equilibrium being one of higher employment and output in both industries. This is, indeed, a striking result in view of the prevailing notions about the neutrality property of money in the "classical" model. It is worth repeating, however, that, striking as this result may appear, it is precisely what Pigou had in mind when writing on monetary policy and its effects on employment and output.

Going back to (8) and dividing through by dM we get:

$$di/dM = (b/I_1)(dN_k/dM) < 0$$

Hence, at the new equilibrium, the rate of interest must have declined for if this were not so the capital-goods market would not clear.

What if $I_1 = 0$? Does this mean that money is neutral? Not at all since, from equation (5) an increase in M is sure to reduce i . More formally, by totally differentiating (5) we see that

$$di/dM = 1/m_1 p_c < 0$$

Why concentrate on $I_1 = 0$? Because, once again, this case

highlights the debate between Keynes and Pigou at the McMillan Committee concerning the efficacy of monetary policy. If $I_1 = 0$ the workings of our model are modified. It is seen then that equations (2) and (4) determine between them employment and output in the capital-goods sector and that equations (1) and (3) determine, in a similar fashion, employment and production in the consumer-goods industry. Equation (5) is then used only to determine the rate of interest at which the money market clears. It follows that changes in M do not affect employment and output in either industry. This is Pigou's challenge to Keynes' emphasis on monetary policy namely that, in exceptionally bad times, even lowering i by increasing M would not help.

3. PRODUCTIVITY SHOCK

Consider now a productivity shock in the consumer-goods sector. Let us first concentrate on the CE curve. Combining (1) and (3) and totally differentiating (setting $dN_k = 0$) we get:

$$N_c da + a dN_c = c[N_c da + a dN_c + (c p Y_k) da/a] + s(w/p_c) N_k da/a + s(w/p_c) N_c da/a + s(w/p_c) dN_c$$

Collecting terms we are able to obtain:

$$[N_c - c N_c - c Y_k/b - s/a(w/p_c)(N_k + N_c)] da = (s a x/1+x) dN_c$$

$$\text{Therefore we have: } dN_c/da \underset{CE}{=} A (s a x/1+x)^{-1}$$

$$\text{where } A = [N_c - c N_c - c Y_k/b - s/a(w/p_c)(N_k + N_c)]$$

$$\text{But } A = A a/a = 1/a [a N_c - c a N_c - c(a/b) Y_k - s w/p_c (N_k + N_c)] =$$

$$= 1/a \{Y_c - [cY + (sw/p_c)(N_k + N_c)]\} = 0 \quad [\text{by equation (3')}]$$

It then follows that $dN_c/da = 0$. In other words the position of the CE curve in the N_k, N_c plane does not change in response to productivity shocks in the consumer-goods industries.

What about the KE curve? Totally differentiating (5) and carefully setting $dN_k = 0$ we get:

$$(M/p_c)da/a = m_y a dN_c + m_y N_c da + m_y p(Y_k/a)da$$

Collecting terms we have:

$$m_y a dN_c = \{[M - m_y(p_c Y_c + p_k Y_k)]/p_c a\} da = (M - m_y p_c Y)/(p_c a)$$

from which it is readily seen that

$$dN_c/da \Big|_{KE} = (1/m_y p_c a^2)(M - m_y p_c Y)$$

It is clear that $dN_c/da \gtrless 0$ as $M \gtrless m_y p_c Y$.

For $dN_c/da > 0$ it is necessary and sufficient that $M > m_y p_c Y$ or, equivalently,

$$M/p_c > m_y Y \quad (9)$$

Dividing both sides of (9) by m (real money demand) we get:

$$(M/p_c)/m > m_y Y/m$$

or equivalently, remembering that in equilibrium $M/p_c = m$,

$$1 > m_y Y/m$$

What this tells us is that, as long as the income elasticity of the demand for real balances is less than unity, $dN_c/da > 0$. Hence a positive productivity shock in the consumer-goods sector shifts the KE curve upwards resulting in a new

equilibrium with higher levels of employment and output in both industries provided that the income elasticity of real money demand is less than unity. It is also clear from (4) that, in this case, the rate of interest must decline in response to an increase in a . Specifically by totally differentiating (4) we get:

$$bdN_k = Iidi$$

from which it is seen, after dividing through by a , that

$$di/da = (b/I_1)(dN_k/da) < 0$$

as we have already shown that $dN_k/da > 0$.

4. A CHANGE IN THE MONEY WAGE RATE

The comparative-statics effect that we consider next is a change in the money wage-rate. This brings us, of course, to the heart of the Pigou-Keynes debate, what Pigou has aptly called an "intellectual game".

We begin by remembering Keynes' "theoretically fundamental" objection to classical theory as he expressed it in his General Theory : "There may exist no expedient by which labour as a whole can reduce its real wage to a given figure by making revised money bargains with the entrepreneurs".⁴ Keynes, in fact, envisaged an indefinite money wage-price deflation which, barring any repercussions through the money market, would leave the real wage, employment and output unaffected. Our model can readily be used to reproduce Keynes' argument. Differentiate (3)

totally and set $dN_k = 0$ to get:

$$adN_c = cadN_c + cY_k d(p_k/p_c) + s(N_k + N_c)d(w/p_c) + s(w/p_c)dN_c \quad (10)$$

It should be clear that, under our assumptions,

$$d(w/p_c) = d(p_k/p_c) = 0$$

We demonstrate this for $d(w/p_c)$ below:

$$d(w/p_c) = dw/p_c - (w/p_c)dp_c/p_c = dw/p_c - (w/p_c)dw/w = 0$$

Similarly for $d(p_k/p_c)$:

$$d(p_k/p_c) = dp_k/p_c - (dp_c/p_c)p_k/p_c = (p_k/p_c)dw/w - (dw/w)p_k/p_c = 0$$

Utilizing the information that $d(w/p_c) = d(p_k/p_c) = 0$ equation (10) above yields:

$$(sax/1+x)dN_c = 0$$

We can then conclude that $dN_c/dw \Big|_{CE} = 0$

What about the KE curve? Totally differentiating (5) and setting now $dN_c = 0$ we have:

$$(M/p_c)dw/w = m_1 di + m_y adN_k$$

(11)

(remembering that, in this context, $d(p_k/p_c)=0$)

But from differentiation of (4) it is easily seen that

$$di = (b/I_1)dN_k$$

Substituting the above result in (11) and rearranging we obtain:

$$dN_k/dw \Big|_{KE} = (M/p_c)/w[(m_1 b/I_1) + m_y a] > 0$$

Consequently the KE curve shifts upward in response to a

decrease in the money rate of wage. The new equilibrium is, of course, associated with higher levels of employment and output in both industries. It is also readily seen from (4) that the interest rate at the new equilibrium must be lower. For upon differentiating (4) totally and dividing through by dw we get:

$$di/dw = (b/I_1)dN_k/dw > 0$$

since, as has already been demonstrated, $dN_k/dw < 0$

It is perhaps worth emphasizing that the only reason that a fall in the money wage-rate has expansionary real effects is its effect, through the money market, on the interest rate and hence on demand for newly produced capital goods. We can drive home this point by assuming, in effect, that $I_1 = 0$. In this case Keynes' critical link between the real money stock, interest rate and investment demand does not exist and we should expect, as did Keynes, that a reduction in money wages results in an equiproportional reduction in prices with no effects on employment and output.

Notice, crucially, that even if i is removed as an independent argument from the investment demand function our model continues to provide a consistent framework for the determination of solution (equilibrium) values for the unknowns Y_c , Y_k , N_c , N_k and i . Specifically there is, from (4), one unique level of employment in the capital-goods industries which ensures that the capital-goods market clears. The equilibrium value of N_k depends on the (autonomous) magnitudes

of private investment and government expenditure. To put it differently the KE curve becomes vertical. Equation (3) is then used to determine N_c . From (1) and (2) Y_c , Y_k are easily retrieved. Last, but not least, equation (5), the money market equilibrium condition can be used to pin down the equilibrium rate of interest.

What does the removal of i from the investment demand function imply for the real effects of a money wage decrease? The effect on employment is found by differentiating (3) and (4). Starting with (4) we get:

$$dN_k = dI + dG = 0$$

It is evident that, regardless of what happens to the money wage rate, employment in the capital-goods sector will remain unaffected. Similarly, employment in the consumer-goods industries is independent of the money wage rate. So long as producers reduce prices in exactly the same proportion as money wages are reduced, the change in employment will be nil. It is clear that N_k , N_c , Y_k , Y_c will not change in response to a change in w . What about p_k/p_c , i ? Since, on our assumptions, commodities exchange according to the amount of labor they represent (specifically $p_k/p_c = a/b$) a money wage reduction of the across-the-board variety will not alter relative prices. As far as i goes it is readily found upon differentiating (5) that

$$-(M/p_c w)dw = m_i di + m_y dY$$

Dividing through by dw and remembering that $dY/dw = 0$ we

get:

$$-M/p_c w = m_1 di/dw$$

from which it is easily seen that

$$di/dw = - M/p_c w m_1 > 0$$

The above analysis makes clear that, once the crucial link between the money market and the goods market is lost, i.e., the interest elasticity of the investment demand schedule, the real effects of a money wage cut vanish. Most of the above are, indeed, well known. What isn't well known, however, is that Pigou was perfectly aware of Keynes' "theoretically fundamental objection". And although he was eager to emphasize (as he so often did in his work and public appearances) that money wage cuts were not a practicable means to escape recession he maintained that, if somehow a money wage cut could be effected, it would improve employment and output. In Pigou's mind the effect of money wage cuts on employment was not to be taken seriously so far as stabilization policy is concerned. Yet as an intellectual game, i.e., as the attempt to determine the sign of another partial derivative, he had no doubt that the sign would turn out to be negative.

Pigou responded forcefully to Keynes' contention that money wage cuts would bring about an equiproportional decline in prices in his Theory of Unemployment:

"It is possible" Pigou wrote "to imagine a state of things in which the money wage-rate is reduced

by a given percentage ... while the original output and the original volume of employment ... are both maintained. This implies that the price level... is altered in the same proportion as the money wage-rate, that the real wage-rate remains what it was before, and that everything goes on exactly as it used to do, save only that all transactions are conducted with counters of diminished size".⁵

Pigou, however, went on to state that the conclusion that "reductions in the money rate of wages would... [have] no effect whatever either on the real rate of wage or on the volume of labour demanded..." is fallacious. For once we consider "nonindustrial incomes such as those of doctors and lawyers... [and] prime costs other than wages" and if we "suppose that initially the money income of non-wage earners is [nonzero]" and that, in response to a money wage cut, "nothing [initially] happen[s] to non-wage-earners money income" there is no reason to expect that employment and output, in the aggregate, should remain unaffected by reductions in money wage-rates.⁶

Now, in our model, by assumption, money wage cuts are reflected in equiproportional decreases in prices. There remains, however, a useful way in which to demonstrate Pigou's response to Keynes' objection. For suppose that we no longer ignore fixed elements in the community's nominal income, Pigou's "non-industrial incomes" and "non-labor prime costs" of production. We can incorporate the effect of such elements in our analysis by assuming that the government makes transfer

payments to the private sector (workers?) at a constant money rate R . We may then suppose, for simplicity, that such transfer payments are used by workers entirely to finance consumption. We must then modify our consumer-goods market equilibrium condition as follows:

$$Y_c = cY + s(w/p_c)(N_c + N_R) + R/p_c \quad (3'')$$

To eliminate any possibility that a money wage cut may be working through the money market with lower interest rates and higher investment demand, the only way, according to Keynes, that a money wage reduction can affect employment, we assert that $I_1 = 0$. We recall that, in this eventuality, the KE curve becomes vertical, crossing the horizontal axis at the level of employment (N_k) which ensures that, given the now autonomous demand for newly produced capital goods, the capital-goods sector clears.

By totally differentiating our modified consumer-goods market equilibrium condition (3'') and setting $dN_k = 0$ we have (remembering that $d(w/p_c) = d(p_k/p_c) = 0$) :

$$dN_c = cadN_c + s(w/p_c)dN_c - (R/p_c)dw/w$$

Collecting terms we obtain:

$$s(a - w/p_c)dN_c = - (R/p_c w)dw$$

from which it is readily found that

$$\left. \frac{dN_c}{dw} \right|_{CE} = - R/sxw^2 < 0$$

Consequently a reduction in the money wage-rate shifts the CE

curve outward thus necessarily resulting in an increase in employment and output in the consumer-goods sector. Since, however, $dN_k = dY_k = 0$ it follows that, overall, a money wage cut must increase employment and output in the aggregate, albeit, in our model, without any reduction in the workers' welfare.

We feel, however, that the above analysis of money wage reductions is not entirely fair to either of the participants in this debate. For his part Keynes did not entirely neglect Pigou's objections. In spite of his vociferous contention that changes in money wages would bring about proportionately lower prices simply as a result of workers' diminished money incomes, Keynes readily admitted that there was more to the story than this. Thus in Chapter 19 of his General Theory Keynes wrote: "The argument [of classical economists]... is that a reduction in the money wages will, ceteris paribus, stimulate demand by diminishing the price of the finished product.... It is from this type of analysis that I fundamentally differ."⁷

Why did Keynes disagree with classical analysis on this point? Clearly it was not merely because of the presumed simple relationship between workers' money income and the general level of prices. There was now a more subtle reason underlying Keynes' disagreement. The classical economists Keynes thought would be right

"only if the community's marginal propensity to consume is equal to unity ... or if there is an increase in investment.... Thus the reduction in money-wages will have no lasting tendency to increase employment except by virtue of its repercussions ... on the rate of interest."⁸

Has Pigou been oblivious of the crucial question of changes in demand? We believe that this is hardly the case. In fact, Pigou's entire explanation of the trade cycle rests solidly on changes in industrialists' expectations about the real yield from industrial spending (including investment). Altered expectations of profitability of industrial spending are clearly identified as the dominant cause behind the cyclical movements in employment and output that we observe in modern industrialized communities. To somehow connect the above theory with Say's law and make such an association persist until nowadays is a formidable feat that can probably best be explained by psychologists rather than economists.

We have already seen that Pigou placed heavy emphasis on expectation and argued that spending in the capital-goods sector was especially susceptible to abrupt and, sometimes, not entirely rational changes. It was true, however, that the critical factor underlying changes in industrial spending was the anticipated profitability of the employment of new capital. Anything which would improve the expectations of profit of entrepreneurs would, *ceteris paribus*, increase industrial spending. Now it would, indeed, be startling if

a reduction in the real rate of wage, brought about with the expressed consent of the working class, with its concomitant redistribution of income in favor of capital would leave capitalists' attitudes and expectations unaffected. One should expect that such sweeping redistribution of income would have definite repercussions on entrepreneurs' expectations of profit and hence on investment. Could Keynes object to this line of reasoning? If he did he would contradict his own pronouncements on this issue. For it has been more than once that Keynes had forcefully argued, not simply about the importance of expectations for investment demand, but also concerning the effects of a potential redistribution of income on industrial spending. Keynes raised this point in his testimony at the McMillan Committee; he even went so far as to state that, due to the fact that capital's relative share abroad (for instance, Germany) was higher than it was in Britain, there must necessarily be an outflow of capital and thus chronic balance-of-payments problems unless the British government were prepared to restrict the freedom of choice of British investors. In addition, there has been explicit agreement between Pigou and Keynes on the role of profits, expectations and industrial spending during their personal exchange on the McMillan Committee.

It would therefore be consistent with both Pigou's and Keynes' arguments to posit an investment demand function

which, apart from the rate of interest, should somehow depend on other factors influencing the anticipated profitability of newly produced capital goods. In our context it would suffice to introduce the real rate of wage as a partial measure of profitability. We thus write:

$$I = I(i, W) \quad (12)$$

where $W = w/p_c$ (the real wage measured in units of the consumer good) and where, of course, $I_i < 0$, $I_w < 0$. Let us now suppose, for simplicity, that aggregate consumption is proportional to aggregate income where the factor of proportionality is restricted to be less than unity. We then write:

$$C = cY \quad (13)$$

where as before $Y = Y_c + (p_k/p_c)Y_k$

We further suppose that, in our new environment, in the face of a reduction of money wage-rates prices remain rigid downward. This is an extreme case for, as we already discussed, we should expect that, in real-world economies, prices should also decline to some extent although perhaps not by as much as money wages. What can we then say, in terms of our simplified framework, for the comparative statics effects of a fall in money wage-rates? Remembering (12) and (13) above we can now write our respective goods-markets equilibrium schedules as follows:

$$Y_c = cY \quad (3''')$$

$$Y_k = I(i, W) + G \quad (4''')$$

It is clear from (3'') that the effect of changes in money wages on the CE curve is nil, at least to the extent that such change (fall) in w does not affect nominal and relative prices.

Totally differentiating (4'') and setting $dN_k = 0$ we get:

$$I_i di + I_w dW = 0$$

from which it is readily found that

$$di/dw = - I_w/I_i p_c < 0$$

Totally differentiating (5) and making use of the above result for di we obtain:

$$(-m_i I_w/I_i p_c)dw + m_y adN_c = 0$$

$$\text{or, equivalently, } \left. \frac{dN_c}{dw} \right|_{KE} = (m_i I_w/m_y I_i)(1/(1+x)w < 0$$

Therefore a reduction in the money rate of wage shifts the KE curve outwards resulting in a new equilibrium with higher levels of employment and output in both industries and a higher interest rate. So far from working through lower interest rate a reduction in money wage-rate affects the economy through a redistribution of income in favor of capital, improved expectations of profit and higher industrial spending.

It is worth emphasizing that Keynes did not overlook the above argument in his General Theory. Here is what he had to say: "[A] general reduction [of money wages] ... may set things moving on a more normal basis of expectation."⁹ One is then left to wonder about Keynes' vociferous assertion about

his "fundamental differences" from "classical" analysis. On what points are such fundamental differences to be found? Here is Keynes' answer: "In fact, a movement by employers to revise money-wage bargains downward will be much more strongly resisted than a gradual and automatic lowering of real wages as a result of rising price."¹⁰ Amazing! For it was, in fact, Pigou that had tried so hard (and succeeded) to demonstrate, on the basis of the very same reasons that Keynes adduced above, why money wage-rates reductions were not "practicable politics." To repeat ourselves: Pigou had clearly anticipated Keynes, not only through his academic work but also in his testimony in front of the McMillan Committee, in showing that money wage reductions, although perhaps in principle an appealing means of reducing the amplitude of industrial fluctuations, could not be expected to bring about significant results because of the formidable difficulties associated with the practical implementation of a more "plastic" (flexible) wage policy. It was precisely because of the impractical and costly character of such measures that Pigou contemplated alternative policies, e.g., increased expenditure by the State, as a cure for the severe recession of the late 1920's and 1930's.

NOTES

1. Thomas Sargent, Macroeconomic Theory (Academic Press, New York, 1979), pp.65-67.

2. A.C. Pigou, Industrial Fluctuations (Augustus M. Kelley, New York, 1967), Chapters VIII and XII.
3. *ibid.*, Chapters VIII and XII.
4. John Maynard Keynes, The General Theory of Employment, Interest and Money (Harcourt Brace Jovanovich, New York, 1964), p.13.
5. A.C. Pigou, The Theory of Unemployment (MacMillan, London, 1933), pp.100-101.
6. *ibid.*, pp.101-102.
7. John Maynard Keynes, *op. cit.*, pp.257-258.
8. *ibid.*, pp.260-261.
9. *ibid.*, p.264.
10. *ibid.*, p.264.

BIBLIOGRAPHY

Ackley, Gardner, Macroeconomics: Theory and Policy (MacMillan, New and Money (MacMillan, New York, 1978).

Blaug, Mark, The Cambridge Revolution (Cambridge University Press, Cambridge, 1974).

Committee on Finance and Industry, (MacMillan Committee) Minutes of Evidence (His Majesty's Statistical Office, London, 1931).

Dornbusch, Rudiger and Stanley Fischer, Macroeconomics (McGraw-Hill, New York, 1987).

Hayek, F.A., Monetary Theory and the Trade Cycle (Augustus M. Kelley, Clifton, 1975).

Hayek, F.A., Prices and Production (MacMillan, London, 1935).

Hicks, J.R., "Mr. Keynes and the 'Classics': A Suggested Interpretation" in Readings in the Theory of Income Distribution (Blakiston, Philadelphia, 1946).

Howson, Susan and Donald Winch, The Economic Advisory Council 1930-1939 (Cambridge University Press, Cambridge, 1977).

Keynes, John Maynard, Collected Writings (MacMillan, London, 1982).

Keynes, John Maynard, The General Theory of Employment, Interest Keynes (Harcourt Brace Jovanovich, New York, 1964).

Keynes, John Maynard, "Letter to the Editor", London Times, July 27, 1933.

Kuhn, W.E., The Evolution of Economic Thought (South Western Publishing, Cincinnati, 1970).

Leijonhufvud, Axel, On Keynesian Economics and the Economics of Keynes (Oxford University Press, New York, 1968).

Mitchell B.R. and P. Deane, Abstract of British Historical

Statistics (Cambridge University Press, Cambridge, 1962).

Patinkin, Don, Anticipations of the General Theory (The University Chicago Press, Chicago, 1982).

Pigou, A.C., Industrial Fluctuations (Augustus M. Kelley, New York, 1967).

Pigou, A.C., Keynes's General Theory : A Retrospective View (MacMillan, London, 1951).

Pigou, A.C., The Theory of Unemployment (MacMillan, London, 1933).

Robbins, Lionel, Autobiography of an Economist (MacMillan, London, 1974).

Robbins, Lionel, The Great Depression (MacMillan, London, 1934).

Sargent, Thomas, Macroeconomic Theory (Academic Press, New York, 1979).

Schumpeter, J.A., Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process (McGraw-Hill, New York, 1939).

Schumpeter, J.A., A History of Economic Analysis (Oxford University Press, New York, 1954).

Thornton, H., An Enquiry into the Nature and Effects of the Paper Credit of Great Britain (London, 1802).