This paper provides a critical survey of the recent rational expectations and implicit contracts theories, in the first part. The second part attempts to provide a rationale for Keynesian type behaviour in industrial labour markets, in a world of irreducible uncertainty, moral hazard and firm specific human capital. The third part examines various policy dilemmas in the current stagflationary conjuncture; argues that constant money supply growth rate rules are infeasible to operate in the pure credit economies that are characteristic of most OECD countries and hence argues for reintroducing interest rate policy as the major instrument of monetary stabilisation. In this context the role of fiscalism in Keynesian economics is reconsidered, and it is argued that it may be desirable to concentrate on the allocative and equity rather than the stabilisation aspects in the design of government budgets. Finally the implications for an international monetary system, which is increasingly becoming a pure credit system, of an absence of a world central bank to stabilise the system are discussed.

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DO KEYNESIAN DIAGNOSES AND REMEDIES NEED REVISION?

by

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NEED REVISION?

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INTRODUCTION AND SUMMARY

Five years ago when the first serious attack on post-war Keynesian economics had been mounted by a heterogeneous group of so-called 'monetarists.' Professor Maddison had me do a survey piece for the OECD on the theoretical and policy issues raised by the new "Keynes versus the Classics" debates (see Lal (1977)). Since then the monetarist challenge seems to have swept all before it. OECD governments, financial journalists and a growing body of academic professional opinion seems to have been converted to monetarism. It was therefore with some trepidation that I took on the task for this conference of assessing and making up my own mind on the new twists and turns in the massive macro economic literature that has grown up since I last gave serious thought to these issues.

Apart from a further heightening of the monetarist challenge, there have been two broad theoretical 'Keynesian' counterattacks. One is based on so-called "implicit contract" theory, which attempts to provide a rigorous basis within the conventional framework of utility and profit maximisation for the assumption of sticky money wages, which underpins much Keynesian thought. This battle between the latest "rational expectations" version of monetarism and "implicit contract" theory is the subject matter of part I of this paper, in which I show that it is the neglect of Keynes' emphasis on irreducible uncertainty, which leads to the "implicit contract" type theories collapsing in front of the rational expectation enslaught.

Part II of the paper therefore attempts to pick up the pieces of implicit contract theories and welds them with certain aspects of industrial
labour markets emphasised by so-called "dual-labour" market theorists (see Coeinger Piere, Williamson et al., Lal (1979)), namely the importance of firm specific human capital, in a world where uncertainty cannot be reduced to risk (in the "nightian sense) and problems of moral hazard are ubiquitous. It then sketches a labour market process in which utility and profit maximising agents would behave in the manner Keynes postulated, namely that, they would resist cuts in their money wages but would be willing to accept real wage cuts imposed through a rise in the price level.

The second 'Keynesian' counterattack has been made by so-called "general disequilibrium" theorists who are attempting to extend existing Walrasian general equilibrium theory to provide the micro-foundations for Keynesian type macro-economics. I have little to say, and make little use of this literature for two reasons.

The first is that though labelled Keynesian, these essentially short-run rationing models have very little to do with Keynes' insights. Thus as Hahn (1977) notes:

"recently there have been investigations of the extreme case where no one else wishes to change any price as an equilibrium is established purely by rationing (see Dreze (1975), Grandmont and Laroque (1976), ...). Almost inevitably such equilibria have been called Keynesian. But they have precious little to do with what Keynes actually wrote. He certainly did not posit fixed prices. Rather the reverse. Nor did he seem to argue that prices change more slowly than quantities, as can be verified in the chapter which tells us why labour cannot control its real wage. It seems to be far less confusing to call such equilibria Drezian or French! We simply have to live with the fact that Keynes never managed to get his micro-theory to mesh properly with the rest of what he had to say" (Hahn (1977)), p. 35. Furthermore, "the, assumption in the current non-cartesian theory is the rationing of the short side at given prices. Thus if the demand for shoes, before any quantity constraint is perceived, exceeds
the supply of shoes being the demand side will be rationed
(see Aarho & Grossman (1971), Benassy (1976)). In
Keynesian economics suppliers of shoes lose inventories
and demands are satisfied... This mistaken interpretation
of Keynesian economics goes with a methodology which takes
prices as fixed during a short period and misses an
important insight into Keynesian economics due to Falder
(1939). He argued not that prices were fixed because
agents think about price only on Mondays, but because
'normal' price expectations combined with inventories
prevented prices from changing by much" (Hahn, ibid, p. 36).

The second reason for neglect is that, as Professor Hicks
remarked at the IEA conference on the 'new' disequilibrium
economics: 'with [this] new mathematical economics he had to think several
times before he saw what was meant. Then he often found himself saying
'But that was quite obvious!'" (Harcourt (ed.), (1977), p. 86). But for
those interested in these developments good surveys and critiques are
provided in Weintraub, and in Hahn (1977), whilst Hahn (1980) provides
a devastating critique of monetarist theory and policy insights even within
a full rational expectations Walrasian equilibrium framework.

Part III of this paper deals with policy dilemmas that have
appeared twice in the 70's as a result of the OPEC price rises of 1973-74
and 1978-80. In this context a critique of monetarist policy proposals
(in particular of their constant money supply growth rule) is provided by
exposing the basic assumptions underlying their view that money is (or
can be made to behave) like 'hard' commodity or metallic money, whose
supply is exogenous. Once it is recognised that most modern economies
and the world economy (particularly since the move to floating exchange
rates) have moved towards becoming closer to pure credit economies
where the money supply becomes endogenous, no practical sense can be made
of laying down a target for an elusive quantity which can no longer be directly controlled by the authorities. An alternative instrument of monetary control for a pure credit economy as advocated by Hautrey, namely the short-run rate of interest is then considered, and a plea is also made for reconsidering the role of fiscalism in Keynesian economics. International aspects are also considered briefly for a world economy which is a pure credit economy without a Central Bank.1/

Finally, some recent simulations by Perry (1980) for the U.S. characterised by a wage-determination procedure which incorporates an "inflationary norm", are presented to counter some popular monetarist propaganda that inflation offers an easy way out for most OECD countries to lower President Carter's 'discomfort index', namely the sum of the inflation and unemployment rates. Thus I would still stand by many of my earlier proposals (see Lal (1977) Chapter V) of learning to live with inflation, but now put greater emphasis on rectifying the various distortions (many of them the result of the middle adherence to fiscalism has created for the allocative and equity functions of the government budget), which would improve the supply side of the economy. In this sense perhaps, in the 1980's, a return to promoting the classical virtues of productivity, profitability, and thrift, and the resultant improvements on the supply side of the economy are more relevant than the demand management problems emphasised by both Keynesians and monetarists.

1/ A fuller consideration of international economic issues including an evaluation of the 'monetarist' challenge in this sphere will be found in Lal (1980).
I - THE INSTITUTIONAL CLASSICAL MACROECONOMICS AND INELASTIC CONTRACT THEORY - THE
EVOLUTION AND OUTCOME OF RECENT THEORETICAL ARTICLES

It had long been recognised that the price-theoretic underpinnings
of the General Theory were pretty weak.1 The phillips curve type theory as
propounded by Lipsey seemed to provide a theoretical underpinning to "Phillips'
statistical relationship, along which (in the grey zone where the aggregate
supply curve in price-output space was neither horizontal nor vertical)
aggregate demand policy (monetary and/or fiscal) could tradeoff a reduced
unemployment rate against an increased inflation rate.

(1) The Natural Rate of Unemployment Theories - The First Charge of the
Monetarist Brigade.

The first major attack on this Keynesian position was provided by
Friedman and Phelps. They argued that there is a natural rate of unemployment
due to frictional and structural factors which cannot be reduced in the
long run by raising aggregate demand, without an accelerating increase in
the price level. Thus whilst in the short run there maybe a negatively
sloped Phillips curve due to the money illusion of workers, in the long run
the Phillips curve is vertical.

On this natural rate hypothesis the authorities were able to
"fool" workers with adaptive expectations, suffering from money illusion,
in the short run. So that by generating an inflation rate greater than their
expected rate (which was based on extrapolating the past), workers would
implicitly be accepting a cut in real wages and hence employment would increase.

1/ There is the famous remark attributed to Gerald Shove that Keynes never
took off the small amount of time which he would have needed to grasp
contemporary microeconomics.
However, in the long run, workers seeing that their real wages had been cut would demand and get a restoration of their old real wage, with its accompanying (original) level of employment, at the natural rate level of unemployment. Thus in the long run there would be a vertical Phillips curve.

Furthermore, any reduction in unemployment below the natural rate following a once-for-all increase in the inflation rate would soon be nullified as workers 'saw through' the cut in their real wage it entailed. To ensure the lower rate of unemployment it would be necessary for the authorities to generate an accelerating inflation which, because of the lag in the process of expectation formation, would continually fool workers to accept the required cut in real wages.

(2) Rational Expectations (RE) - The Final Assault and Victory?

However, once it is realised, as was emphasized by Nash, that the above adaptive expectations formation process is irrational because, if workers have the same information, and make the same assumptions about the working of the economy as the government and its economic advisors, then they will immediately realise that, an increase in say the money supply, implying more inflation, will mean a cut in their real wage. They will therefore correctly predict the future course of prices flowing from anticipated government policy and hence charge the nominal prices under their control to maintain the existing (and unchanged) equilibrium real values. Hence, public policies of expanding demand will lose their potency in altering the unemployment rate below the natural rate, even in the short run. Both the short and long run Phillips curves would be vertical. The difference between the 'rational' price expectations and actual prices will be due entirely to forecast errors. So that, it is only by "surprise", that is by doing the unexpected
that monetary policy can affect real variables such as the unemployment rate in the economy.\footnote{1}

These are powerful results which have been extended and applied by numerous monetarist authors to argue both for the impotency of any feedback type of monetary policy rule which they argue will be fully anticipated by 'rational' agents, as well as the desirability of the fixed money growth rule, advocated by Friedman (1968). (See Burro (1976), Lucas (1972), Sargent-Wallace (1975)).

Two separate sets of issues are raised by this full scale and seemingly successful monetarist counter-attack on the Keynesian position. The first concerns the validity of the assumption of rational expectations. The second, whether even if the assumption of rational expectations is allowed,

\footnote{1}{More precisely the rational expectation hypothesis states that price expectations of inflation (\( \hat{p}_t \)) formed at date \( t-1 \), are unbiased predictors of the actual inflation rate \( p_t \) given all the available information at date \( t-1 \), that is

\[ p_t^e = E(p_{t-1}^t) \]  

The actual inflation rate will differ from the expected one purely by an error term \( u_t \), which is not correlated with anything known at \( t-1 \). For any such correlation would be part of \( p_{t-1}^t \), and could be used to improve the forecast \( p_t^e \). Hence

\[ p_t^e - p_t^e = u_t - E(p_t^t | t-1) = u_t \]  

Moreover, using the standard Phillips type relationship between the rate of inflation and unemployment, namely;

\[ p_t = a \cdot p_t^e + f(U_t - U^N) \]  

where \( U_t \) and \( U^N \) are the actual and natural rate of unemployment we obtain

\[ U_t = U^N + f^{-1}(a U_t) \]  

the policy conclusions about the short run neutrality of money follow. I will not deal with the latter in this paper as it seems pointless to consider outcomes in work with full-coded rational expectations; if, as I argue below, such a world is unlikely to be relevant for most industrial countries. (But see Nash (1977), (1980), and Weintraub for critical surveys of the neutrality of money in a rational expectations but so-called "disequilibrium" economics framework).

The effective power of the notion of rational expectations derives from its validity in a number of important real world markets - these are the well-organised markets for primary commodities, foreign exchange and common stocks. These markets are characterised by the following Gordon, (1976) the neutral policy effects of anticipated changes in money supply namely that they only effect the price level and not employment within the RE framework can be shown as follows. Suppose that the natural rate Phillips curve is:

$$ P_t = P^e_t - a(U_t - U^N) \quad (1) $$

The monetary growth rate (m*) required to yield the constant 'natural' rate of unemployment is given by the quantity theory identity:

$$ m^* = P_t + q^*_t - v_t \quad (2) $$

where q* is the growth rate of potential "full" (or natural rate) employment real output, and v* is the exogenously given velocity growth. Then if changes between the actual and natural rate of unemployment are determined by deviations of the actual rate of growth of money (m) from the full employment growth rate (m*), that is:

$$ U_t = U_{t-1} - b(m_t - m^*) \quad (3) $$

then from (1), (2), and (3) we get:

$$ P_t = \frac{[P^e_t + ab(m_t + V_t - q^*_t)]}{(1+ab)} \quad (4) $$

With rational expectations economic agents would know the structural form (4) and the best estimates of its parameters, so that Pt = P^e_t, then it follows that:

$$ P_t = P^e_t - a(U_t - U^N) \quad (5) $$

From (3) and (2) it follows that a one percent change in m, reduce P_t and hence m, by a percentage point, and hence from (3), there is no change in U_t.
"flexprice" features which have commonly been ascribed to all markets in the text of a Walrasian general equilibrium model. These organised markets as Hicks (1977) explains are markets which work by rules, "but the rules are rules of a club. Access to the market must be restricted, to those who promise to keep the rules. and who are willing to pay the cost of administering them (dealing for instance with disputes about them). The club, if it chooses can employ a Walrasian functionary, or it can organise dealings in other ways. Organised markets commonly appear when a group of traders have become habituated to trading with one another. They are formed because it is discovered that to work under rules diminishes the costs of making transactions." (p. x).

The brokers are the key elements in these organised markets (such as are the merchants and traders in the unorganised markets which still categorise developing countries' markets for goods). They lower or raise prices whenever arbitrage is possible, and keep the markets atomistic. In such organised markets, moreover, at least when they are not impossibly "thin", participants are able to indulge in constant recontracting. This means that market participants can act on the basis of the latest available and continually changing information both about the real world, and the expectations of other market participants as revealed through their current actions, in determining the relevant spot (or future - if future markets exist) prices. In these markets, (partly because the market price also reveals the expectations of other markets participants), price adjustments to emerging information will be rapid and hence the information thus will be rapidly disseminated. As such, behaviour on these flex price or auction markets will conform to the rational expectations hypothesis; the price changes in these markets will also reflect the characteristic of so-called efficient markets.
that price processes in such markets are... will nearly randomly walk.  
'(See Fama (1970), Samuelson (1972), Little and Rainer).  
The efficient prices established in such markets will be equilibrium prices which are conditional on the available information when such prices are set. Furthermore, it will not be possible to improve the 'stability' of the prices set in these markets, given the underlying random walk nature of the fluctuations these prices reflect, unless there is an omniscient agent who can foretell the future better than current market participants. If such an agent (say the government) existed, he or she could make large profits in these markets at the expense of the other more ignorant participants. Hence public policy aimed at stabilizing prices in these markets must imply that the government has access to 'better' information which enables it to profitably speculate in these markets. 
Even if this were so, it might be better for the government to disseminate its information, rather than profit from it at the expense of some of its citizens. But it is unlikely that governments have better information and that stabilizing public speculation is likely to be either feasible or desirable. (see Henderson and Lal for arguments on this line against UNCTAD's Common Fund for stabilizing commodity prices, and Lal (1980) for the implications of this argument to the market for foreign exchange and the debates on rules for floating). 
There is considerable evidence that these auction markets are efficient in the sense defined above. (see Fama, Poole, Mishkin).

The essential point therefore is that, if all markets in an economy were of the above flex-price kind in which the rational expectations hypothesis was valid, then its major conclusion on the impotency of stabilization policies could be justified.\textsuperscript{1} However, the essential Keynesian insight is that in most

\textsuperscript{1} But see Hahn (1980) for exceptions even in this world.
industrial countries, apart from the organised markets listed above, most other markets and in particular the labour market are not flex price but rather fixed price markets. That this is a Keynesian (or rather Hicksian) insight and not Keynes' due to his muddying the water in his chapter on "Long Term Expectations" in the General Theory, where his peroration on the stock market has left the impression on innumerable readers that behaviour on it (and by implication on other organised areas) is irrational. Many have hence concluded that in the face of the irreducible uncertainty, so eloquently characterised by Keynes in this chapter and in his 1937 CJE article, behaviour on all markets is 'irrational' in the sense of not conforming to the portulates of rationality underlying the Walrasian general equilibrium construct.

The truth, as most often is likely to lie between the extreme rational expectations hypothesis as applying to all markets as held by current monetarists, or none as seemingly advanced by Keynes and some of his followers. For our purposes, it is sufficient if reasons can be found why the rational expectations hypothesis maybe inapplicable to labour but apply to primary commodity, foreign exchange and stock markets. For that would be sufficient to salvage the major Keynesian insights and remedies from the new classical counter-attack.

(3) - Implicit Contracts - A successful 'Keynesian' Counterattack?

It may be thought that, given the above distinction between the two sets of markets (in terms of fixed versus flex price), providing good reasons for expecting the labour market in modern industrial countries to be a fixed price rather than a flex price market, would be sufficient to contradict the policy conclusions flowing from the rational expectations hypothesis. The recent so-called "implicit contracts" theories (see Azardias,
Bailey, Gordon) are relevant in this context.

The essential insight of these theories is that, if workers are more risk averse than producers (because for instance the latter may have access to more perfect capital markets), then in the face of given demand fluctuations, it may be in the interests of producers to offer and workers to accept fixed wage contracts, as the latter provide an element of risk shifting (insurance) from the more risk averse workers to the less risk averse producers.

Thus consider the following simple model. We assume that each firm has a pool of homogeneous workers, all of whom can be employed when the firm is working at full capacity. However, there are random fluctuations in the demand (price) of the firm's output, which can be described by a probability distribution of expected outputs (prices) of the firm. This means that the value marginal product of labour (vmp) will be fluctuating over the cycle.

Now consider various alternative labour contracts. The first is the traditional spot contract, where all the workers are employed at a wage equal to their fluctuating (vmp). The utility level of risk averse workers (see 1) will then be given by the level $U$, which corresponds to that associated with the expected wage $w$. They however, would be equally happy with the certainty equivalent lower fixed wage $\bar{w}$. An alternative fixed wage contract at wage $\bar{w}$, would also be preferred by risk neutral producers, whose average wage payment will then decline from the mean of the fluctuating vmp, of $w$ to $\bar{w}$. Thus it would be in the interests of both employers and employees to accept a fixed wage contract, in which wages are fixed at the level $\bar{w}$ say, but employment
fluctuations in the case of the spot contract.\footnote{Thus assume that there are \( n_1 \) workers in the firm's labour pool. There is a probability \( p \) that during the relevant period (say a year) only \( n_0 \) \((n_0 < n_1)\) of these workers can profitably be employed. Hours per worker are assumed fixed. The value marginal product of a worker employed in the two states of nature are \( V_0 \) (when employment is \( n_0 \)) and \( V_1 \) (when it is \( n_1 \)). During the period when \( (n_1 - n_0) \) workers are unemployed, the workers are laid off at random. Then consider two alternative labour contracts from the viewpoints of both employers and workers.
}

This could be taken to provide the underpinning for Keynesian type of employment fluctuations and an economic justification for both the ensuing wage-rigidity and Keynesian type policies to stabilise aggregate demand and hence employment.

(1) Fluctuating Wage and Employment

The employed workers are paid a fluctuating wage equal to their value marginal product in the two states of nature, whilst unemployed workers receive nothing. Firms are risk neutral; workers are risk averse. The profit maximizing expected wage bill of the firm \( E(W) \) is then given by:

\[
p \cdot V_0 n_0 + (1 - p) V_1 n_1 = E(W) \tag{E1}
\]

As the probability of any worker being laid off and receiving no income if state of nature \( n_1 \) prevails is \( p \) \([1 - n_1/n_0]\) his utility over the year with a fluctuating wage and employment level, \( U(V) \) is:

\[
U(V) = p \left( (1 - n_0/n_1) U(0) + (n_0/n_1) U(V_0) \right) + (1-p) \left( U(V_1) \right)
\]

or

\[
U(V) = p \left( n_0/n_1 \right) U(V_0) + (1-p) U(V_1) \tag{L1}
\]

(assuming \( U(0) = 0 \)).

(II) Fixed Wage and Fluctuating Employment. Suppose next that, instead employers offer a fixed wage but fluctuating employment contract, at a fixed wage rate \( \bar{w} \) less than the expected wage in (I), namely

\[
\bar{w} < pV_0 + (1-p) V_1,
\]

so that their expected wage bill \( E(\bar{w}) \) is given by

\[
\left( p n_0 + (1-p) n_1 \right) \bar{w} = E(\bar{w}) \tag{E2}
\]

As \( E(\bar{w}) < E(W) \), employers stand to gain from offering such a contract. The workers utility is now given by

\[
U(\bar{w}) = U(\bar{w}) \left[ p \frac{n_0}{n_1} + (1-p) \right] \tag{L2}
\]

As \( U'(\bar{w}) > 0 \), \( \bar{w} > 0 \), \( U(\bar{w}) \geq U(V_0) \) \( \forall \bar{w} \) \( U(V_1) \), and hence from

(1) and (2) there will be some \( \bar{w} \), for which \( U(\bar{w}) > U(\bar{y}) \), and workers too will prefer a fixed wage (less than the expected wage) and fluctuating employment contract.
However, as was soon perceived (see Barro (1977), Solow) and subsequently formalised (see Akerlof and Miyazaki), the above fixed wage – variable employment contract though Pareto – superior to a variable wage – employment contract is nevertheless Pareto – inferior to a fixed wage cum fixed employment contract. For in the previous case, risk averse workers would still have a finite probability of being laid off, when ex hypothesi their utility level would fall to zero (we discuss the difference that a positive reservation wage makes to the argument below). They would therefore accept a contract with a yet lower wage (lower than \( \bar{w} \)) but which guaranteed their employment in all states of nature, to the variable employment and fixed wage \( (\bar{w}) \) contract. Moreover, risk-neutral employers too would be willing to offer this contract as they are merely concerned with their total wage bill, which would go down with the new lower wage – fixed employment contract.\(^1\) Thus, even with demand uncertainty, and differing degrees of risk aversion between workers and employers, though wages would be rigid during the cycle, unlike the Keynesian case there would now be full employment at all times. Thus, as in the rational expectations model, we once again get automatic full employment assured, with a rigid wage (and long term contracts) even in this supposedly Keynesian type model!

\(^1\) We now consider an alternative contract –

(III) Fixed Wage Employment – Employers now offer a fixed wage \( w^* \) and full employment. They will be indifferent or better off than under contract II, as long as the expected wage bill,

\[
E(w^*) = w^* n_1 \leq \left[ pn_0 - (1-p) n_1 \right] \bar{w} = E(\bar{w}) \quad (E3)
\]

Workers will prefer this third type of contract as long as

\[
U(w^*) \geq U(\bar{w}) \left[ \frac{pn_0}{n_1} + (1-p) \right] \quad (L3)
\]

As the term in square brackets is less than one, they will prefer the contract offered with \( w^* \leq \bar{w} \).
This is not because of the more gross simplifying assumptions that have hitherto been made, in particular that the effective utility function of workers is strictly concave over its whole range. It might be thought if there is a reservation wage (corresponding in Fig. 1, to a utility level \( U \) to wage level \( w_o \)) or else an alternative income through unemployment insurance that, as the effective utility function becomes non concave (\( U \), \( U \)), fixed wages and fluctuating employment would again become the Pareto superior policy in the face of demand fluctuations. It can be readily shown (see Akerlof and Miyazaki) that as long as the utility and profit maximizing fixed wage associated with the fixed employment contract is greater than the reservation wage \( w_o \), the former will still be adopted. It is only if the fixed wage associated with full employment is less than \( w_o \), that there will be some variability in wages and lay offs and voluntary unemployment when the marginal product of labour falls below \( w_o \). But this latter result offers no consolation to Keynesians, as the resulting unemployment is in essence no different from that arising in the alternative Walrasian, variable wage, spot contracting case, when labour has a reservation wage. In fact the levels of such voluntary unemployment predicted by the implicit contracts theory would be lower than those under spot contracting (see Akerlof and Miyazaki, op. cit.).

(4) Irreducible Uncertainty and Keynesian Disequilibria - The Missing Battalion in the Keynesian Counter-attack.

Thus whilst the implicit contracts theory is of importance in explaining certain features of the structure of wages (and their relative rigidity) in industrial economies, within the traditional utility and profit maximizing framework, it clearly cannot provide an explanation for Keynesian type cyclical unemployment. The reason
why we have spent some time in spelling out this case is that it exemplifies an important insight of Keynesian economics, which attempts at explaining Keynes' type unemployment within an 'equilibrium' framework must miss. This is that Keynes unemployment, as well as the trade cycles with which it is associated are disequilibrium phenomenon in the sense that there are profit opportunities available which agents do not take in a slump. This in turn as Keynes emphasized is due to the nature of the uncertainty that economic agents face, in particular when considering their investment decisions.

The implicit contracts theory is within the 'equilibrium' framework as it reduces all uncertainty to risk (in the Knightian sense). If this can be done (so that there is a rational basis for numerical probability estimates of the relative frequency kind to be assigned to states of nature) then the economy will most likely end up in a rational expectations equilibrium, without any Keynesian unemployment. This has been explicitly recognized by one of the progenitors of the rational expectations hypothesis in macroeconomics, Lucas, who writes:

"Unfortunately, the general hypothesis that economic agents are Bayesian decision makers has, in many applications little empirical content; without some way of inferring what an agent's subjective view of the future is, this hypothesis is of no help in understanding his behaviour... John Muth (1961) proposed to resolve this problem by identifying agents subjective probabilities with observed frequencies of the events to be forecast, or with "true" probabilities, calling the assumed coinccidence of subjective and "true" probabilities rational expectations. Evidently, this hypothesis will not be of value in understanding psychotic behaviour. Neither will it be applicable in situations in which one cannot guess which if any, observable frequencies are relevant: situations which Knight called "uncertainty". It will most likely be useful in situations in which probabilities of interest concern a fairly well defined recurrent event, situations of "risk" in Knight's terminology. In situations of risk, the hypothesis of rational behaviour on the part of agents will have usable content, so that behaviour may be explainable in terms of economic theory. In such situations, expectations are rational in Muth's sense."
In cases of uncertainty, economic reasoning will be of no value.” (Lucas (1977), p. 13)

But Keynes emphasised (as can be seen from the following extended quotation from his QE defense of the General Theory) that the uncertainty which he thought lay at the heart of the processes explaining cyclical fluctuations (caused by the changing "animal spirits" of entrepreneurs) was the irreducible uncertainty of Knight's. Thus, the author of "A Treatise on Probability", in his defense of the General Theory in the QE 1937 wrote:

"It is generally recognised that the Ricardian analysis was concerned with what we now call long-period equilibrium... more recent writers like their predecessors were still dealing with a system in which the amount of the factors employed was given and the other relevant facts were known more or less for certain. This does not mean that they were dealing with a system in which change was ruled out, or even one in which disappointment of expectation was ruled out. But at any given time facts and expectations were assumed to be given in a definite and calculable form; and risks, of which, though admitted, not much notice was taken, were supposed to be capable of an exact actuarial computation. The calculus of probability, though mention of it was kept in the background, was supposed to be capable of reducing uncertainty to the same calculable status as that of certainty itself... Actually, however, we have as a rule, only the vaguest idea of any but the most direct consequences of our acts. Sometimes we are not much concerned with their remote consequences, even though time and chance may make much of them. But sometimes we are intensely concerned with them, more so, occasionally, than with the immediate consequences. Now of all human activities which are affected by this remote preoccupation, it happens that one of the most important is economic character, namely, wealth. The whole object of the accumulation of wealth is to produce results, or potential results, at a comparatively distant, and sometimes an indefinitely distant, date. Thus the fact that our knowledge of the future is fluctuating, vague and uncertain renders wealth [by this Keynes presumably means reproducible fixed capital] a peculiarly unsuitable subject for the methods of the classical economists. This theory might work very well in a world in which economic goods were necessarily consumed within a short interval of their being produced. But it requires, I suggest, considerable amendment if it is to be applied to a world in which accumulation of wealth for an indefinitely postponed future is an important factor; and the greater the proportionate part played by such wealth accumulation the more essential does such amendment become."
"By 'uncertain' knowledge, let me explain, I do not mean merely to distinguish what is known for certain from what is only probable. The game of roulette is not subject, in this sense, to uncertainty; nor is the prospect of a Victory bond being drawn. Or, again, the expectation of life is only slightly uncertain. Even the weather is only moderately uncertain. The sense in which I am using the term is that in which the prospect of a European war is uncertain or the price of copper and the rate of interest twenty years hence, or the obsolescence of a new invention or the position of private wealth owners in the social system in 1970. About these matters there is no scientific basis on which to form any calculable probability whatever. We simply do not know. Nevertheless, the necessity for action and for decision compels us as practical men to do our best to overlook this awkward fact and to behave exactly as we should if we had behind us a good Benthamite calculation of a series of prospective advantages and disadvantages, each multiplied by its appropriate probability waiting to be summed" (Keynes, vol. IV p. 112-114).

Like Lucas, Blaug too thinks that if such irreducible uncertainty is allowed then: "It involves the abandonment, not only of equilibrium theorising, but also of model-building of all kinds, including models based on disequilibrium trading. Once we give full scope to the role of uncertain expectations, we give up the idea of providing any determinate model of how the economy functions at the aggregate level, and in particular we give up the age-old belief that economics can make definite predictions about the likely effects of alternative policies...In a world of pervasive uncertainty, the very notion of adjustments to equilibrium is meaningless because the state of expectations, on which any equilibrium depends, has itself no rational basis. Whether anything called scientific macroeconomics can be rescued from this rather depressing picture is of course a different question. The point is that the indeterminate nature of economic behaviour under the influence of uncertainty is part and parcel of what Keynes meant, or at any rate it is one of the two or three central messages of Keynes' General Theory." (Blaug, p. 633).
What both Lucas and Blaug have in mind, I suspect, when they talk of "economic theorising" or "scientific macroeconomics", is the application of what Hicks (1979) has termed the static method to the problems of sequential causation—the form of causation, which must underlie explanations (and thence prediction) of genuine real-world dynamic processes, in which ignorance (and not mere risk) of the future forms an integral part, as emphasised by Keynes. They are both right in stressing that the static method cannot be used to reduce these processes into mechanical analogies from which macroeconomic models can be estimated. But, if aspects concerning irreducible uncertainty are a major part of the explanation for trade cycles, it is surely illegitimate to ignore these aspects because the static method is thereby made unusable. Nor does it mean that economic theorising, which is not so narrowly identified with the application of the static method, need cease. Keynes and the later...

For Keynes' own scepticism on the usefulness of econometrics in estimating cyclical models see his review and exchanges with Tinbergen in volume XIV of Keynes' Collected Works pages 283-320. Lucas' argument that because trade cycles occur, trade cycle phenomena can be reduced to Knightian risk ignores the irreducible uncertainty still attaching to the timing and amplitude of any particular cycle. Moreover, as Modigliani has noted, Keynes was perfectly aware that if in the real world rational expectations ruled, then the classical model would hold. Thus in the General Theory he states:

"If, indeed labour were always in a position to take action (and were to do so) whenever there was less than full employment, to reduce its money demands by concerted action to whatever point was required to make money so abundant relatively to the wage-unit that the rate of interest would fall to a level compatible with full employment, we should, in effect have monetary management by the Trade Unions, aimed at full employment instead of the banking system", (Keynes 1936 p. 267).

As Modigliani colourfully remarks "the only novelty is that the macro-rational-expectations hypothesis replaces Keynes' opening "if" with a "since."

(Modigliani, p. 6)
Hicks exemplify how even if irreducible uncertainty is taken seriously, economic analysis can yield qualitative policy conclusions (which however must be rooted in the actual histories of particular economies). Nor, despite Blaug's assertions, does the resulting analysis have to be based on irrational behaviour of economic agents unless 'rational' is reduced to actions based on estimates of numerical probabilities.

As 'it is primarily labour market behaviour during the trade cycle which is of importance in the on-going debate between Keynesians and the New Classicalists, it will be appropriate to sketch an outline of a simple economic model which builds on Keynesian insights, those implicit in the implicit contracts theories, the later Hicks, and recent analyses of so-called 'dual' or internal labour markets. This model, sketched in the next section, though not formalised and unlikely to provide a short run econometric model, which can be estimated by conventional econometric time series techniques, nevertheless, will yield Keynesian type results, for which the qualitative policy remedies of Keynes may still be relevant.
II - A SKETCH OF A KEYNESIAN PROCESS IN INDUSTRIAL LABOUR MARKETS

One of the essential building blocks for a Keynesian type outcome in industrial labour markets is the recognition of the importance of firm specific training for most modern industrial firms, which makes labour a quasi-fixed factor of production for them (see Oi). This implies that labour ceases to be a purely variable input which can be hired and fired at will in an auction market, like many of the raw material inputs which also enter the firm's production process. It becomes rather like the fixed physical capital of the firm, whose value depends (in part) upon the expected quasi rents (profits) that the firm hopes to recoup from the firm specific human capital embodied in its workers. The reason why this firm specific capital cannot be traded on auction markets, is that its existence creates the small number bargaining problem associated with bilateral monopoly: thus controverts the large numbers assumption required for the functioning of auction markets.

For a worker with firm specific capital is from the viewpoint of the firm differentiated from other workers (with equivalent general skills). Whilst the worker's value to his present employer is greater than that to other employers.

The existence of this firm specific human capital entails that there will be a rental element in the cost of using labour service (as with machines) which will in part be inversely related to the time the firm can

---

The following is an amalgam of ideas to be found in a number of recent writings on the labour market (together with the "prisoners dilemma" type process in money wage determination which I had outlined in chapter III of Lal (1977)). The writings I have drawn on are these of Oi, Azardis, Baily (1974), (1976), D.F. Gordon, Phelps-Calvo, Hitc. (1965) (1976) (1979), Baily and Lillien, Akerloff - Mizayaki, and Solow, and the neo-classical explanations of dual-labour market phenomenon in Williamson et. al and Wachter, which are surveyed in Lal (1979).
utilise this capital (for any given level of wages that are paid to the worker). The firm will thus have an incentive to "tie in" the worker to the firm through various well known devices to reduce turnover and to lengthen the tenure of the worker. For the worker too, there is an incentive to stay with the firm as his alternative income in another firm will be lower as his value marginal to fact there will be lower (at least till he has received the specific training required in that firm). Moreover, for the type of risk-aversion reasons emphasised in the implicit contracts theory discussed above, the worker and the employer will prefer some fixed wage - fixed employment contract given the "rationally expected fluctuations in future

As there will be a whole spectrum of specific training embodied in different types of workers required by the firm, there is likely to be an equivalent spectrum of fixed wage contracts associated with each "grade" or "type" of labour. However, now as we must take account of irreducible uncertainty, the firm and the workers must know that the "full" expectations on which they will base the terms of the contract, must also take account of the fact that it is quite likely that the expectations maybe disappointed.

Thus following 01, suppose the workers marginal product without training at date t is \( M_t \), and the specific training raises it by \( \Delta M_t \), then if the fixed investment costs of providing this specific human capital are \( C \), and the wage paid is \( W_t \), profits of the firms are maximised when the discounted costs equal the discounted benefits of this trained worker, that is;

\[
\sum_{t=0}^{\infty} \left( (M_t + \Delta M_t) - W_t \right) (1 + r)^t = C \quad (1)
\]

or writing the rental element \( R \) in the cost of using labour

\[
R = \frac{C}{\sum_{t=0}^{\infty} (1+r)^t}
\]

and assuming that \( M_t, \Delta M_t \) and \( W_t \) are constant, we have

\[
M + \Delta M = W + R \quad (2)
\]
Putting the point differently though, as we have seen, the risk-type
probabilities associated with the "normal" (in the Marshallian sense)
fluctuations in demand would yield fixed wage + fixed employment contracts,
now the contracts must embody an essential feature of the real world that there
maybe unforeseeable and hence unforeseen deviations from this normal "band".

With irreducible uncertainty it can never be optimal for the firm to
guarantee employment in every conceivable state of nature, for one of these
unexpected states could be bankruptcy. The difference in the nature of
the irreducible uncertainty which this reflects, as opposed to the risk
modelled by rational expectations, can best be seen if we differentiate
the different notions of probability that underlie the possibly subjective
"estimates" of these uncertainties. In the mathematical-economic models as
those of rational expectation, the probabilities are numerical probabilities
of the relative frequency sort. In the kind of irreducible uncertainty to
be found in much economic phenomena, a wider notion of probability
is in order. This has been succinctly expressed recently by Hicks (1979).

In fig. II, "A is the field where probabilities are unquestionably numerical-
the classical field of games of chance and of random experiments (or
observations of what is accepted to be the same phenomenon). The ring B
is that in which probabilities are orderable, but not expressible as numbers.
The ring C is that in which they are not even orderable or not completely
orderable... (thinking of an analogy with the indifference curves of utility
theory, an indifference curve may be thick)... [Then]... (1) Even in ring C
probability judgments can sometimes be made, and they can be rational
since it is conceivable that they could be improved by additional evidence
(2)... the field of economics has the character of the shaded area, some part
of it being in A, some in B, and some in C." (Hicks (1979), p. 114, 115).
A firm in this environment will be concerned with optimising the variable hours in the production process of its labourers. Its decision variables will be variations in hours per worker differentiated by 'types' of labour. Types of workers for whom the optimum hours of work from the firm's viewpoint are zero, will be laid off (either temporarily or permanently). As these decisions about variable hours will also determine the utility levels of workers, clearly the contracts will have to specify the hours worked per worker when demand for the firm's product deviates from the 'normal' band.

If it were unambiguously clear to workers when and to what extent demand had deviated from the "normal" band, they would once again as in the pure risk-type implicit contract theory, be willing to accept wage cuts with full employment, as long as the resulting wage was not less than their reservation wage (which includes any unemployment insurance benefits).

However, for much of the output of manufactured goods it will not be possible for workers to monitor these output changes accurately, and this in turn will entail problems of moral hazard on the part of producers. The reason for the former assertion is that, the basic reason why most manufactured goods prices are 'fix price' and not 'flex price' is because "normal" stock-holding of the relevant output can smooth 'normal' fluctuations in demand. This 'normal' level of stock-holding, despite the impression created by mechanical stock-adjustment rules built into mathematical models, is not by any means a technological datum (see Hicks (1965)). Hence it will always be open to dispute whether or not a particular fluctuation in stocks represents a deviation from the 'normal' band. The moral hazard problem then is that the workers will rightly fear that employers might use a phony rise in stocks above what they claim is the normal level to force a general wage cut on its employees. The latter will therefore prefer an alternative form of
contract in which this moral hazard on the part of producers is reduced.

In such a contract (with the given fixed hours per worker), the workers would accept temporary (or permanent) lay-offs when demand was unexpectedly below 'normal' but no cut in money wages. The fact that the firm was laying off workers would be a genuine signal that in fact "bad times were here again!"

What is more, given the different amounts of firm specific human capital embodied in its workers, there would be a clear profit maximising pattern to the layoffs. Assuming (unrealistically) some substitutability amongst the members of its work force, the workers with less firm specific human capital will be laid off first.¹/

But given this pattern of layoffs which will be predictable, why should the workers with the least specific human capital, not cut their

¹/ Thus using the equation from the Oi model in the previous footnote, we have the "long run equilibrium", profit maximising condition for any labour type i, whose expected marginal product is Xi, firm specific investment costs are Ci, fixed wage Ni and length of expected attachment is T, namely

\[ M_i = W_i + R_i \]

(whence as before \( R_i = \frac{C_i}{T} \frac{1}{(1 + r)^T} \))

If the derived demand in some period falls below the expected demand, then short run profit maximisation will entail use of the labour type i, till the point were the short run marginal product (\( \bar{M}_i \)) is equated to the wage. The rental cost does not now enter in, as the fixed costs these represent are sunk costs, and the use of this quasi fixed factor is still justified (as for a capital good) if it yields enough to cover its variable costs. Hence in the short run

\[ \bar{M}_i = W_i \quad \text{(1)} \]

For any type of worker, i, the likelihood of being laid off will depend upon whether

\[ M_i - \bar{M}_i \geq W_i - (W_i + R_i) = R_i \]

that is for any given fall in the value marginal product of type i worker (fully employed), their specific human capital Ri is lowest.
wages when they are about to be laid off, thereby making it profitable for them to be employed by undercutting the wages of those with more specific human capital. If this were the case, we would again be back to full employment with all workers in the firm accepting the requisite wage cuts.

It is here, that the important insight of Keynes that workers whilst willing to accept real wage cuts caused by a general rise in the price level, will not accept the same cuts brought about by a cut in money wages, needs to be brought in. Remembering that, because of the specific human capital of its workforce it is in the interests of both parties in the labour market to maintain a fair degree of permanency in their relationship, ceteris paribus workers will have joined a particular firm on the expectation that their long term prospects in the particular firm to which they are going to be attached (on a fairly long term basis), are at least as good as those of their peers with similar general skills, who have joined other firms. If the derived demand for their labour in the firm they have joined falls, it will not be apparent to them whether this is a fall in the overall demand for the general skills they have, or merely for the firm specific human capital they have acquired. For their current value marginal product will reflect both the return to their general skill, whose value will depend upon the overall demand and supply for that skill, as well as their share in the increase in their marginal product (over and above that associated with the general skill) which has been made possible by the investment of the firm (or jointly by the worker and the firm) in their specific human capital. If they were certain that it was the demand for their general skill which had fallen, they might be willing to accept a wage cut. But what they observe (assuming they can) is a fall in the joint marginal product of their general and specific skills.
At least part of the fall in the latter should be borne by the employer. The only way they can judge whether the fall in their value marginal product is due to a decline in demand for their general rather than specific skills, or if money wages cuts have been accepted by workers in comparable occupations, and with comparable degrees of seniority, which maybe taken as a crude surrogate of the amount of embodied firm specific capital.

This of course is just a special case of the more general argument that lacking a Walrasian auctioneer, it is difficult for workers to determine instantaneously whether or not the local fall in demand for their particular services is a general fall in the demand for that class of labour as a whole. Even the workers with little or no specific training will then not at first be willing to reduce their reservation money wage when they are laid off. It is only through a process of search (as emphasised in the so-called new microeconomic foundations literature (see Phelps et al)) that they will revise their expectations.

Thus, workers may be concerned about relative real wage differentials (in their money wage bargaining) not because, as is traditionally argued, relative wages (because of envy) are an argument in their utility functions (see Leontief, below), but because such comparisons are an important signal when workers cannot accurately assess whether the fall in the local demand for their services (in the firm to which they are attached) is an overall decline in the value marginal product of their general or merely their firm specific human capital.

The above sketch shows how in labour markets where firm-specific human capital is of importance and irreducible uncertainty is passive, spot price labour market behaviour with the observed Keynesian type cyclical movements of employment in the face of changing aggregate demand may be observed.
Furthermore, since the importance (and rationality) of these relative wage comparisons is allowed in the labour markets of industrial countries, then the lack of an economy wide auctioneer or co-ordinator to call out the 'equilibrium' wage, can also lead to a "prisoners dilemma" type of inflationary process without any obvious excess demand. (see Lal (1977)).

Thus, say the price of imported food rises and is expected to continue to rise, and hence the workers current and future cost of living rises. Workers concerned for the above reasons, with real wage differentials and who are bargaining with their employees for the next year's wage will have to take a view as to whether or not the other workers who form their reference groups, will try and offset the increase in the past cost of living, as well as any expected increases in the future cost of living. For the latter, they have to form expectations about the likely extent of the rise in prices expected in the future by other workers. Thus in order to prevent the erosion of their differentials they are all likely to negotiate money wage rises which correspond to the highest expected future price increase, even if they would all be willing to accept a real wage cut if the differentials could be maintained.

Finally, if for the above reasons, money wages are sticky in these labour markets, any relative wage changes which maybe required on resource allocation grounds, in the face of long run changes in the demand and supply of different types of labour, can only come about through a rise in the money wages in the sectors experiencing a medium run shortage of labour. For these reasons, modern industrial labour markets are likely to have an inherent inflationary bias, which of course can always be exacerbated by incautious and unwarranted demand expansion. It is time, however, to turn
III - POLICY OPTIONS

1. Increased Unemployment and Inflation - Can the Rising "Discomfort Index"
   Be Tamed by Inflation?

   In the last section we may have succeeded in rescuing the major Keynesian
   insights concerning the labour market from the rational expectations onslaught.
   These are the stickiness of industrial money wages, as well as the paradox that
   workers maybe willing to accept a cut in real wages through a rise in the
   general "price level, but not through cuts in their money wages. These
   insights were obviously of great practical significance in the Depression Years
   when the General Theory was formulated, and its central message that aggregate
   demand should be expanded, valid. Does it still have policy relevance in the
   current problems of stagnation in OECD countries?

   Keynes explicitly recognised (see Keynes (1936)) that the
   aggregate supply schedule would most likely have the shape in Fig. III
   That is before his full employment barrie could be reached money wages and
   prices would start to rise. It is in this nether region that the OECD world
   has lived for most of the post World War II period.

   Since the early 1970's, as is now recognised even by monetarists
   (see Friedman's Nobel lecture), the two massive OPEC oil price rises of
   1973-74, and 1975-76 have shifted this aggregate supply curve upwards.
   Governments have then faced the unenviable choice of either maintaining
   existing levels of employment but accommodating the oil price rise through
   a rise in the general price level (or its rate of change) or else by
   reducing employment in order to maintain the old price level (or its rate of
   change). They have usually chosen some unemployment along with some inflation.
   The observed movement from X to X', then gives the impression that they have
moved along a positively sloped Phillips curve.\footnote{1} But this is an optical illusion, for it is composed of a shift in the aggregate supply curve and the normal Phillips type short-run cyclical movements along the new curve.

Some statistical confirmation of this process which would yield the stagflationary trends witnessed in most OECD countries in the 1970's is provided in a model of wage inflation estimated for the US by Perry. This distinguishes between a norm rate of wage increase, and the usual cyclical Phillips curve. Perry shows that this model works pretty well in explaining wage inflation trends in the US in the 1960's and 1970's. The 'norm' around which the Phillips relationship works has shifted up substantially during the 1970's as compared with the 1960's. This shift in the 'norm' of wage increase is not entirely due to the oil price rise but according to Perry was initiated by the effects of higher inflationary expectations engendered by the excess demand created to finance the Vietnam war.\footnote{2} Perry then simulates the

\footnote{1} This is the new hypothesis introduced by Friedman in his Nobel prize lecture, but I find his rationalisations of it in terms of the response to increasing variance in the inflation rate, unconvincing. As he now admits (in the same lecture) the possibility of "cost-push" inflation from the rise in oil prices, the above sample and more obvious explanation of the seemingly positively sloped Phillips curve is preferable. It should be noted that this is not to say that there is now a positively sloped Phillips curve, but only that with the shift in the aggregate supply schedule, and the policy tradeoffs made it appears as if there has been a movement along a positively sloped curve.

\footnote{2} This would seem to provide a validation for the "change in gears" type expectational process outlined by Fleming.
the reason see out in litt (1977). However, many of the social cases
which have contributed many explanations to make a better in interaction,
the top, I present uncommitted by the various horror sources about interaction
and uncommitted losses associated with an uncommitted case of any for
interaction are tremendous of a large to be sanulion about the real outcome
case, the reality our better that the case of an extra four percent of
point, and the operation of a continuing uncommitted rate which is secure the outcome
can be lowered in the best assumptions by more than among its percentage
satisfaction also show that, it is unlikely interaction (at least in the &)
appear from illustrating the complete decay passed, these
vitamin a month neither and fails to talk with a month neither 5 years.
face of this interaction falls to 8/3, and then slows back again to 0.5.
therefore faster, so that it is 6/3 after the same time, the
recession in which the uncommitted case grows to 6/3 in two years, and
a month neither, and two with the month neither. It increased there to a
5 for 5 years, the rate of this interaction is reduced to 0.5 adding the
a significant recession in which the uncommitted case is maintained at
by the full change in the case after your case (Garrison, 1977). When
the two years, by these-renovation of the change in the case after 2 years, and
shut the door, even half the changes in the case of this interaction
assumptions (a) that change in no change in the which more (b) that is
relevant. The assumption that the rate of this interaction can be determined
recession and one in which over 2 years change is both a recession and
recession in which (Garrison, 1977) and corresponds to the assumption of a sustained
interaction in which (Garrison, 1977) and connects to the assumption of a sustained
the clear exceptions of 1977, but the assumptions (a) that change in no change in the
very connection, we begin with the assumptions that the interaction in response of vice interaction to a deep recession, which is consistent
(chiefly distributional) arising from unanticipated inflation can be offset by promoting general indexation, where the index is the GDP deflator.

The latter form of indexation (which does not 'lock in' the economy in the face of 'real' shocks, as would happen if the index chosen was the consumer price index) and which is the index assumed in most discussions of indexation (see those in Lundberg 61) might also mitigate some of the 'money wage push' based on the 'prisoners dilemma' type argument sketched in the last part.

For it could moderate the inflationary expectations in 'atomistic' money wage bargaining, as long as the expected rate of inflation is higher than the realised rate (as seems all too likely when the highest expected rate of inflation becomes the wage norm of workers concerned with relativities).

2. 'Supply Side' Economics - Does Keynesian fiscalism need revision?

In addition, the various aspects of policy which can improve the 'supply' side of the economy by raising overall productivity as well as increasing the flexibility of the economy to adjust to shocks, could also ease the stagflationary pressures of the 1970's. The most important of these are a commitment to maintain open economies, help rather than hinder the accompanying adjustment in traded good industries by eschewing subsidies to declining industries, and above all in ensuring that energy price rises are speedily passed on to consumers. The various restrictions on ecological grounds to the development or exploitation of alternative energy sources also need to be eased. Restrictions imposed by subsidised housing policies which restrict labour mobility could be lifted.

Many of these measures of the so-called 'supply side' economics concern the reversal of various inefficient microeconomic interventions that have mushroomed in the past World War II years in most OECD countries, as a result of the increasing politicisation of economic policy to serve the often mutually conflicting interests of diverse sectional groups in these
...
and currency schools on the nature of "money." The differences can be put most simply (as Michell did) in terms of the alternative types of monetary structures. The first is one in which there is only metallic money, or else a hundred percent reserve requirement on banks, or else a fixed and unchangeable reserve requirement on banks linking their credit in a fixed proportion to some 'hard money' base. In this type of monetary system it is not difficult to show that the classical quantity theory will hold (see Michell, Hawtrey, Hicks) and also that direct control of the exogenous monetary base will be feasible.

The second type of monetary system is a pure credit system which has no metallic money (or fixed rule based link with a metallic reserve base). The promissory notes of the various traders and the banks which form the Banking System, are the 'bank notes' or currency of this system (see Hawtrey, Chp. 1, and Hicks (1977) Chp. III, for a clear account of the workings of a pure credit economy). In such an economy, it can also be shown that quantity theory type results will no longer hold. For suppose, following Hawtrey, we have a pure credit economy in which the IOU's of market participants are the medium of exchange. Bankers are dealers in debt. Moreover these debts can be expressed in an accounting unit. "The debts of the whole community can be settled by transfers in the banker's books or by the delivery of documents, such as bank notes, representative of the banker's obligations." (Hawtrey, p. 4). The possible instability of the resulting credit economy is graphically described by Hawtrey as follows (p. 13)
"Suppose some of the merchants, in the hope of extending their business, give increased orders to the manufacturers. The manufacturers will forthwith borrow more than usual from their bankers. They will urge on the business of manufacture, will pay more to their employees, and will receive greater profits in proportion to their greater output. They and their employees will have more to spend; the retailers will dispose of more goods, and will take over more from the merchants; the merchants will give yet further orders to the manufacturers. The manufacturers, finding their productive capacity over strained, will quote higher prices to the merchants; the merchants, being unable to supply the retailers fast enough or to maintain their stocks of goods, will raise prices to the retailers, and the retailers will raise prices to the public. The general rise of prices will involve a proportional increase of borrowing to finance a given output of goods, over and above the increase necessitated by the increase of output. This increase of borrowing, meaning an increase in the volume of bank credit, will further stimulate activity.

This process is what is commonly called an inflation of credit. Where will it end? An indefinite expansion seems to be in the immediate interest of merchants and bankers alike. The continuous and progressive rise of prices makes it profitable to hold goods in stock, and the rate of interest which the merchant who holds such goods is prepared to pay is correspondingly high. Thus the merchant and the banker share between them a larger rate of profit on a larger turn-over. The credit created for the purposes of production becomes purchasing power in the hands of the people engaged in production; the greater the amount of credit created, the greater will be the amount of purchasing power and the better the market for the sale of all kinds of goods. The better the market the greater the demand for credit."
But, if the logical possibility of a pure credit economy with its obvious endogenity of the money supply is conceded, surely it must be a question of institutional fact, whether or not a particular economy's monetary institutions are better described as being closer to the "hard money" (whether in terms of a pure metallic or metallic exchange or fixed immutable rule reserve based) system or to that of a pure credit economy. Moreover, human institutions themselves are not immutable so that over time, "money" may evolve from a "hard" to pure credit money. This is likely, given the inexorable drive of profit maximising economic agents to substitute cheaper means of payment. Thus, historical evidence based say on the operations of a 'hard money' system will be inappropriate if the current and future system is going to be one of the pure credit sort.

The most casual empiricism will show that industrial economies have moved closer and closer towards becoming pure credit economies. The consequent difficulty of describing such a system in "hard money" terms is vividly shown by the great difficulties increasingly encountered in defining some exogenous monetary base which as in a 'hard money' system can be taken to determine the quantity of 'money' in the economy. "The creation of a 'substitute hard money' by control over the quantity of some sort (or sorts) of money is continually defeated by human ingenuity in the invention of other sorts... Hawtrey and Keynes were surely right in holding that they were dealing with a system that had no automatic stabiliser; a system which needed to be stabilised by policy" (Hicks, ibid, p. 120).
However, the monetarists may be forgiven for reading into the Keynesian theory of liquidity preference an implicit hard money, "reserve based" type monetary system, in which the money supply is exogenous. It is the ineffectiveness of money supply changes because of the liquidity trap, and the presumed interest inelasticity of investment, which make a monetary policy of changing the money supply or interest rates ineffective policies for altering aggregate demand. The route is then left open for fiscal policy, as the major instrument for changing aggregate demand.

4. The Instrument of Monetary Control - Was Haußey Right After All?

But Keynesian revisionist Hicks, however, has questioned the assumption of the interest inelasticity of investment, by going over the debate between Haußeey and Keynes! The interest rate that Keynes saw as affecting investment was the long run rate of interest, as he rejected Haußey's doctrine that it was the short term rate of interest on bank lending, summarised by the Bank Rate in the UK (to which such short term rates were tied) which "had a direct effect on the activity of trade and industry; traders, having more to pay for credit, would seek to reduce their stocks, being therefore less willing to buy and more willing to sell" (Hicks (1977) on Haußey, p. 120). Keynes concerned as he was with the

Thus Hicks (1977) in his brilliant review of different theories of money states: "It will be noticed that the Keynesian monetary model...does not seem to differ so very much, (at least formally) from the classical model...[of a pure hard money system]. It does appear to be more like the classical model than it is like the Wicksell model (of a pure credit economy).... so long as the supply of money is determined exogenously, there still is a ceiling of the classical type. As in the classical case, the system does not have to be on its ceiling; positions (which Keynes would call equilibria) that are below the ceiling are possible and indeed likely. Even in the classical model...the existence of a floor is hard to demonstrate; on this matter, notoriously, Keynes had greater doubts than his predecessors." (Hicks (1977), p. 79-90).

Even logically, the Keynesian theory of liquidity preference and the inference drawn there from by Keynesian authors that productivity and thrift do not determine interest rates, and thence that increased investment through the expansion of income will call forth its own required savings, is open to serious objection. Friedman's work in one sense can be taken as an attempt to repair this flaw, but as Tsiang shows neither Friedman nor Keynes' route works and that once the "missing finance" motive in liquidity preference is allowed, it is Robertson's loanable funds theory which after all is the correct theory of interest rate determination for a quasi-hard money economy.
propensity to invest in fixed capital rather than changes in the willingness of traders to hold stocks, is a primary cause of economic fluctuations, was not much impressed by Hawtrey’s arguments. But as Hicks rightly notes, “it does not follow...that a direct operation upon the decision whether or not to undertake fixed capital investment (the kind of effect which Keynes – at least in his first phase – thought to be capable of being exercised through the long rate of interest) is a convenient or even, a practicable way of exercising control.

There are few expansion plans, even though they are to be mainly financed from retained profits, or from long term capital raised upon the market, which do not depend upon the availability of bank credit at some stage of the process.
The availability of bank credit can still affect timing. It is the sense of the importance of timing which is expressed, in Hawtrey’s model, by his emphasis on the short-term rate of interest.” (Hicks (1977) p. 12).

If, through the Bank Rate mechanism, the Central Bank can affect expectations about the likely course of future short term rates of interest, and thereby the availability of credit in the economy, there is a stabilisation instrument available which is not as blunt and unwieldy as changing the size and composition of the government budget. This instrument maybe particularly effective, if we are moving (as we seem to be) to a pure credit type international monetary system in the OECD world, where (most importantly) exchange rates are flexible. For now, each national monetary authority is nothing more than a member bank in the pure credit international banking system. It maybe thought that in such a system with capital mobility, any member bank would not be able to effect its national short term rate of interest. This is not so, if exchange rates are flexible, and market participants (who are now international) have some expectations about the ‘normal’ level of a country’s exchange rate. If the country’s central Bank were to raise short term interest
rates, to stem a boom say (or to engineer a slump), the exchange rate would rise above its 'normal' level, thus restoring international interest-rate parity and also choking off any capital inflows (as the exchange rate would be expected in time to depreciate to its 'normal' level - a process which would also be aided by the trade balance effects of the exchange rate appreciation). The high domestic short term interest rate and exchange rate would have the requisite depressive effects on aggregate demand but also in its composition as the high exchange rate would penalise the traded goods sector, as seems to be happening currently in the UK. Conversely in order to engineer a boom, the reverse set of policies could be followed.

In all this, remembering that this is a pure credit economy, the money supply can not be directly effected and need not even be a policy target. Though, of course, indirectly the restrictive credit policy (if it works) will affect the total supply of bank money. But this also means that, though the Central Bank can be given directional instructions about the movement in interest rates in the light of particular conjunctures, precise mechanical rules cannot be provided. The "feel" of the market emphasised by 19th century writers on money (such as Thorntor) is of importance because it emphasises that the important point is how the existing market sentiments, based on changing judgments about an irreducible uncertain future, can be changed.

Since Ricardo, however, there have been those who have wished to control credit money by some device which would make it behave like metallic money. The modern day monetarists are merely following in their footsteps. But, if
our argument is right, any mechanical rule based monetary policy (in a pure credit economy) is a wild 'e' the way, and this applies equally to the SMR.

However, Hawtrey's Bank Rate or some such policy instrument could be devises to manage national credit economies in a world wide credit system, with flexible exchange rates between different national "monies", then the conflicting pressures currently exercised on the government budget could be eased.

5. The Budget and Promotion of Social Efficiency - The End of Fiscalism?

The government budget essentially deals with the 'real' side of the economy, namely equity (through transfer payments) and allocative efficiency (through taxes and subsidies). The micro-economic public interventions which are justified in order to correct or adjust (in a second best way) to the distortions that make laissez-faire outcomes socially sub optimal in any real world economy, are to a large extent reflected in the structure of taxes and subsidies and the provision of public good through the government budget. The criteria for judging the desirability of such interventions, their form and size,

1/ This may be the appropriate place to state the reason why the so-called empirical econometric evidence cited by monetarists has not been discussed in this paper. Most of this evidence consists of various reduced form regressions of time series of various economic aggregates. There are deep problems concerning causality, in the use of the standard econometric apparatus in determining mechanical laws of motion, (as these authors seek to do) of the economic system. For a critique by an economist see Hicks (1979), and of the rising doubts even amongst econometricians about what their time series regression show, see Zellner. Whilst for an extended discussion of why economic processes moving through historical time cannot be reduced to mechanical analogues, to which they must, if the statistical theory based on the probability calculus is to be applicable, see the Introduction in Georgescu-Roegen. Finally, Kaldor may be seen for a step by step demolition of the so-called empirical evidence Friedman has cited in support of his "theories". His reply as Kaldor in his rejoinder rightly notes does not answer Kaldors criticisms but merely states that Friedman had himself acknowledged that his 'evidence' could be read both ways!
should be based in the principles of welfare economics. One of the more serious muddles that the identification of Keynesianism with fiscalism has led to is the mixing up of these essentially welfare economic considerations with those of monetary stabilisation. As such, instead of assessing the relative social costs and benefits of different types of public expenditure, these have often been judged primarily by their effects on short-run conjunctural problems. The "supply side" inefficiencies that have increasingly hardened the economic arteries of OECD countries are partly due to the relative neglect of social efficiency considerations in the design of fiscal policies.

This does not mean that the government's actions in terms of its budget, and more particularly its borrowing will not have monetary effects. What it does mean is that, in the design of budgetary policy, the desirability of borrowing should be judged by the social rates of return to the uses made of such borrowing and not by its effects on the "money" supply or aggregate demand. The latter effects should be the concern of the Central Bank. But if it is to act as a true bank in a pure credit economy, it must not be the government's creature, extending unlimited credit to its masters at less than market rates. The government's credit rating will undoubtedly be better than many other market participants because, if nothing else, of its exclusive power to exact tribute from its subjects in the form of taxation. If it is thought necessary to affect credit in the economy, the instrument chosen (say influencing the structure of short term rates of interest) should also affect the cost of borrowing by the government and its agents in the wider public sector.

6. Does International Credit Need To Be Stabilised?

What of the international economy? Will not a pure credit international monetary system also be inherently unstable and what is the monetary instrument  

1/ This 'separation of powers' as Hicks (1973) p. 132, terms it might appear inefficient if we abstract from the political processes in OECD countries. Once these, however, are allowed, then from a second-best viewpoint such a separation might be second-best optimal.
that could be used to stabilise it and who will wield the instrument? It
would seem that a world central bank is called for. But this is infeasible
given the existing reluctance of nation-states to relinquish what they
consider to be an essential element of their sovereignty, the right to
influence the levels of activity within their economies. (see Lal (1980).

We have already seen that, in a world of floating exchange rates, each
national monetary authority should be able to affect the levels of economic
activity during the cycle, even though no mechanical rules can be prescribed
for their policy actions. Similarly, through the well-established lender of
last resort functions of a Central Bank, the adverse effects of banking panics
which may be expected to strike any pure credit economy, particularly at the top
of an unsustainable boom, can be mitigated.

But with the vast growth of international banking, and the large OPEC
oil surpluses which it is called upon to recycle, is there not a similar
danger of a banking panic on the international scale? The danger most
often cited by many faint hearted observers of international capital markets
is the simultaneous default by a number of economically shaky developing
countries of their increasingly large loans from the international commercial
banks. Might not such a default trigger an international banking panic?
If it does, where is the lender of last resort on the international scene?
(see Kindleberger for a detailed account of past national banking panics,
and fears about future international ones).

The major feature of banking panics and the consequent disastrous
destruction of credit, thence liquidity, and then output and employment, they
lead to is that, in such a crisis, loans to perfectly credit worthy borrowers are
also called in at the same time as from those whose future prospects are
more shaky. To stem the panic it is necessary to assure the financial
markets that credit will still continue to be extended to those whose 'real' future prospects remain good. The rule which Keynes laid down for a lender of last resort was "that loans should be granted to all on the basis of sound collateral" (Kindleberger, p. 171). But this makes the terms as well as the bills which the Central Bank is willing to discount, to halt the run out of real and illiquid financial assets into money, a matter of judgement. Who will perform this rediscounting and form the necessary qualitative judgments in the face of an international banking panic?

The answer to the first question is that the rediscounting must ultimately be done by the member Central Banks of the international banking system in whose national jurisdictions the international banks are domiciled. Moreover, if it is largely the fear of developing countries defaulting which sets off the panic, the so-called conditional lending of the IMF provides an adequate mechanism for exercising the judgment about the future prospects of the 'borrowers', enforcing measures which improve those prospects and arranging for a rescheduling of their debts which prevents the liquidify of the international system from being eroded. Thus in effect there already exist in the world-wide credit economy means for preventing an international banking panic. But as an essential element of this mechanism is the "conditionality" of IMF borrowing by a country, which then unclogs the international credit mechanism, it is vital that this 'surveillance' function of the IMF not be eroded by the extant political pressures by Third World countries to abolish such conditionality.
7. Conclusions

We have by now covered a lot of ground. As is obvious, the problems we have dealt with can be illuminated by many Keynesian insights, but not surprisingly some (particularly those concerning the use of the budget as a stabiliser) need to be amended. The policy debate raked up by the monetarists, however, we have argued is in many ways a phony debate. Of course money matters. But "money" itself is not an immutable "thing". It is an institutional artifact whose nature changes with economic evolution. The current day monetarists hanker after a credit system that can be made to work like a "hard money" system by some mechanical device. This we have argued is infeasible, unless the efficiency losses which would be associated with a going back to some "hard money" type system are accepted, and such a monetary system is in fact established. When, as in the current pure credit system (in both the domestic and international spheres), money is endogenous, it is illusory to hope to directly control some "exogenous" monetary aggregate. The use of the short run interest rate instrument avowed by Hayek but eschewed by both Keynesians and monetarists alike, perhaps needs to be revived. But even if some such effective instrument for indirectly controlling credit "money" can be found, it is unlikely, given the inflationary bias in industrial country labour markets, accentuated by the recent massive increases in oil prices, that much faith can be placed

Moreover, as Rahn (1980) notes, for monetarists "the main conclusion is not only that money does not matter unless its stock is changed randomly, but also that inflation resulting from a systematic monetary policy does not matter. This, paradoxical as it may sound, is the strict monetarist view. For Keynesians, on the other hand, money always mattered to the extent that different money stocks went with different interest rates." (p. 16).
on winning the war on inflation, through politically acceptable definitions. Whilst for those who correctly argue that some (large enough) dose of deflation would halt inflation in its tracks, one can only ask, but what is gained? at what cost? and once economic recovery takes place, why should the inflationary bias of industrial labour markets disappear? The gravest disservice the monetarists may have done is to have fuelled a belief that there are simple answers to the current stagflationary conjuncture, which if adopted will not require any of the above questions to be answered.

As any acute reader of this paper will be aware, in this third part, I have been merely putting together or refurbishing many of the insights of a distinguished interpreter of Keynes, who lives by the Cherwell, Sir John Hicks. If I have had little to say about the views of Keynes' self-appointed successors, the so-called Post-Keynesians who live by the Cam, this is only in part because of my upbringing! It is rather because their recent policy views, as expressed for instance by the collective noun "New Cambridge", are in my view illogical, and I have attempted to substantiate this elsewhere (Lal (1979a)).

If the essential long term cure for the West's current problems is to remove the plaque from its economic arteries, a protectionist policy of turning inwards and (in some versions of the alternative strategy) substituting a market by a command economy can only spell disaster for the future levels of living of the West's workers. Though it maybe best to learn to live with unavoidable 'cost-push' type inflation, in the long run the answer must lie in easing the current conjunctural straitjacket, by working on policies to improve the supply side of the economy. It is in this sense that, the most basic revision of Keynesian doctrine required maybe to bring
back an appreciation of the continuing importance of productivity, 
profitability and thrift - factors which for too long seemed to have 
been camouflaged by Keynesian modes of analysis. Demand management, 
whether of the Keynesian or monetarist sort, may in this context be of 
secondary importance than the replenishing of these springs of enterprise 
and of reaffirmation of a positive attachment to change, which have been 
the ultimate mainsprings of the extraordinary secular boom we have witnessed 
in the two decades after the Second World War. (see Lal (1973)). The 
doubt cannot be suppressed that, besides the effects of rising prosperity and 
the accompanying decline in the marginal utility of income, Keynesianism, 
through its relative neglect of supply side factors and emphasis on 
economic security, may also have contributed to sappling the human motive 
forces underlying progress. If the 1970's are to be a mere faltering in 
the spectacular post war secular boom, it may therefore be necessary not 
mere to denounce false prophets, but also to question some of the gods to 
whom we have made obeisance in the past.


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Economic activity is a complex and multifaceted field. Understanding economic policies and their impact on various sectors can be challenging. This page appears to contain references to various economic theories, policies, and research studies. The text seems to discuss the implications of economic policies and their role in shaping economic outcomes.

Some of the key terms and concepts mentioned include:
- Economic activity
- Financial markets
- Monetary policy
- Fiscal policy
- Trade balances
- Economic growth
- Employment
- Inflation
- Interest rates

The references cited in the text likely provide further details on these topics. The page seems to be a rich source of information for those interested in economic studies and policies.


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