

Keynes, the Neglected Theorist

Notwithstanding Keynes's reputation, very little of his magnum opus, *The General Theory*, has been received into modern economics. The investment-saving identity is perhaps the only original concept which has been fully accepted into the canon and while his name is most closely associated with aggregate demand and the multiplier, neither of these really originated with Keynes (Laidler, 1999). Furthermore, 'Keynesian' economics was rightly criticised for its lack of explanation of its assumption of sticky prices, including wages.

In this chapter, I will argue that Keynes's theoretical contribution, neglected by followers and opponents alike, was to restate the Marshallian theory of value (based on competitive, *flexible* prices) in a form which took full account of the nature of time and incorporated the theory of money. Keynes showed that perfect competition could not deliver full employment and that sticky wages were the consequence, not the cause of this failure. In doing so, he introduced some highly original concepts, which still have not been fully appreciated and should be, if macroeconomics is ever to progress beyond the Classical orthodoxy to which it has currently reverted. This theoretical neglect has also limited the impact of Keynes on policy, notably in the areas of labour markets, the international monetary system and financial regulation.

Underlying Keynes's approach is an awareness that money plays no essential role in the Classical theory of value and that a proper treatment of a monetary economy (meaning any industrialised economy) requires a theory in which the nature of time and money are taken seriously. There are three key areas in which *The General Theory* offered new insights which require far-reaching change in economic theory and policy: the meaning of competitive equilibrium in a monetary economy, the central role and nature of expectation and the consequent meaning of liquidity. All of these insights have been unduly neglected, even by Post Keynesian theorists, and are now addressed in turn.

COMPETITIVE EQUILIBRIUM IN A MONETARY ECONOMY

Income in a productive market economy, characterised by a division of labour, is intrinsically monetary. Both output and capital are heterogeneous and it is an error to treat vectors of 'incommensurable collections of miscellaneous objects' as scalar variables: an index will not serve for causal analysis. Yet this is precisely the approach, not only of Classical, but also of most Post Keynesian macroeconomists. Despite Keynes devoting 38 pages (nearly 10% of *The General Theory*) to the problem of defining income and its relation to saving and investment (*G.T.* pp. 37–40, 52–85), Hansen states: 'The section on Income is of no great importance for an understanding of *The General Theory* and may quite well be omitted if the student so wishes.' (Hansen, 1953, p. 54). Then he, and nearly everyone else since, proceeds to write Y for real income, without realising that they are thereby committed to a 'corn model' in which, under perfect competition, involuntary unemployment is impossible. This is entirely different, of course, from deflating money-income by the wage-unit as numeraire to give a measure of real income 'in some sense' (*G.T.* p. 91).

If output were truly homogeneous, the central argument of *The General Theory* would fail. Keynes's principal policy aim was to discredit the prescription of wage-cuts as a remedy for unemployment and his argument hinges on the distinction between money and real wages. If employers and workers bargain in real terms, e.g. over quantities of corn, there can be no denying that if workers are prepared to accept their marginal production of corn as their wage, they can all be profitably employed. The corn might pile up in the employers' granaries rather than being eaten by landlords, but since there can be no difference between saving and investment, there can be no failure of Say's Law.¹ Keynes's point is that employers and workers bargain in money terms and that, even under perfect competition, the real wage is not determined in the labour market. When output is heterogeneous, the real wage is not a causal variable, it is simply the resultant of the money-wage and an arbitrary index of product prices.

Under what conditions might the assumption of homogeneous output be a harmless abstraction in a monetary economy? All firms would have to be producer co-operatives, in which labour was paid according to the sales value of its output. In a co-operative or self-employed economy, given competitive product markets, the exertion of labour to produce saleable output will generate revenue. If the product price is low, the revenue may not be worth the effort and leisure may be preferred. The difference between an economy

of self-employed households in perfect competition and Robinson Crusoe lies only in the division of labour.

By contrast, what we observe in practice is the existence of a wage-dependent labour force. Employment in this context means wage labour, the hire of labour for a sum of money, and not merely occupation or self-employment. A theory of employment is then a theory of the decisions of employers to hire labour and of employees to offer their services. In a theory of self-employment, there is no hiring decision. The payment of a money-wage under an employment contract brings money directly into the production process so that it becomes more than a medium of exchange for finished output.

The General Theory does not consider the weighty question of why a wage-dependent labour force exists. For Keynes, the distinction between entrepreneurs (employers) and workers (employees) is essential, as in Marx, Marshall and Pigou, but not in Walrasian general equilibrium models. Entrepreneurs alone, and not workers, sell to product markets and decide what, and how, to produce. It is tempting to argue that the division between employers and workers is a consequence of uncertainty but Keynes does not claim this directly: aware, no doubt, that there are many other human, technical, social and political factors that consign most of us to the status of employees.

In a 'monetary production economy' labour cannot insist on being employed, even if its marginal revenue product and real wage exceed the marginal disutility of that amount of employment (*G.T.* p. 291). Entrepreneurial firms exist, not to hire labour, but to make profit. By definition, wage-labour does not make the hiring decision, and the primary purpose of *The General Theory* is to explain how firms can find it unprofitable under competitive conditions to employ more labour, even though unemployed labour is for hire at the going rate. At the root of this problem is that both workers and employers are necessarily concerned with income, in the form of money wages and profits respectively. Neither workers nor shareholders can be paid in kind.

This discussion of the nature of income has been necessary in order to address Keynes's use of equilibrium analysis. In summary, Keynes's definition of competitive equilibrium in terms of the choices of entrepreneurs, investors and consumers, which he calls the principle of effective demand, is radically different from the Classical concept of the preferred allocation of factor services. The owners of factors *per se* do not make hiring decisions. The principle of effective demand is therefore a concept of the equilibrium of industry as a whole which supersedes the

Classical full-employment equilibrium. Since the term 'general equilibrium' has become inextricably linked to the Classical concept, it may be better to use the term 'system equilibrium' as the still more general case, encompassing both Walrasian general equilibrium and Keynes's equilibrium of industry as a whole, with or without full employment.

Keynes's concept of system equilibrium is superior to the Walrasian, partly because it reclaims the use of equilibrium analysis for the explanation of the level of employment at any time, whether or not there exists involuntary unemployment. The Walrasian concept is applicable only to full employment, and either involuntary unemployment must be denied (as in New Classical theory) or if unemployment is admitted (as in New Keynesian theory), it is a matter of disequilibrium or departure from full-employment equilibrium. The very concept of disequilibrium implies corrective forces working to restore equilibrium, if they are not impeded. Keynes, by contrast, offers a theory of employment as in equilibrium at any time, even if the position of equilibrium may change from day to day.

Keynes's formal device for expressing this is the employment function $N = F(D_w)$, which relates the level of employment to the level of effective demand (expected money-income, expressed in wage-units). Any given level of aggregate employment may be associated with an indefinitely large number of distributions of employment across industries. This idea is captured by the concept of a production possibility surface, defined for any given set of factors of production including labour. For Keynes, there are many production frontiers nested inside one another, like electron shells, each representing all the possible distributions of employment that correspond to any given level of aggregate employment offered by entrepreneurs, while by contrast the Walrasian model considers only the full employment frontier. In Walrasian terms, the employment function introduces the preferences of households contingent upon any given level of income, thus picking out the point on the particular production possibility shell for any given level of employment that entrepreneurs expect to be preferred by consumers and investors: the point of effective demand.

It is worth noting, as an important aside, that Keynes's neglected employment function is the answer to Sraffa's critique (1926) of the Marshallian theory of value and is the key to a Marshallian macroeconomics. Just as the Walrasian general equilibrium approach does not consider the distribution of output between individual firms but considers the production possibilities of the economy as a whole, so Keynes works 'top down' from the aggregate supply and demand functions of industry as a whole. Having established the point of aggregate effective demand, the distribution of

effective demand between industries and firms is then endogenous, based on the physical conditions of supply, consumer and worker preferences and (of course) aggregate income. An important implication (which has not generally been understood by the Post Keynesian school) is that Keynes's construction depends on—not merely accommodates—perfect competition: imperfect competition cannot be introduced at the aggregate level without indeterminacy (*G.T.* p. 281). The degree of monopoly cannot be derived from the demand curve. The theory of monopolistic competition is necessarily an exercise in partial equilibrium analysis.²

Thus both Keynes and the Walrasian school offer expressions of competitive system equilibrium in which preferences, technology and endowment combine to determine a set of prices and quantities. The difference is that in the Walrasian system the resource constraint is the endowment alone, while in Keynes's, the endowment may not be fully employed: his system is over-determined, by an additional constraint in the form of the level of effective demand (Ambrosi, 2003). An important corollary is that in Keynes's system, factor prices are not market-clearing prices, as are the prices of new goods. The money-wage and the money-rents of land and other existing capital-goods: none of these are equilibrium prices in that sense. The Classical reader may be reluctant to accept Keynes's definition of an equilibrium excluding factor markets, yet it is the inevitable consequence of involuntary unemployment: in the Classical system, factors in excess supply are free goods and their prices should drop to zero. Only if we are prepared to let go of the Classical concept of equilibrium, can we release equilibrium analysis to explain a monetary economy.

It is interesting (revealing?) that the early Hicks refused to accept aggregate income as a causal variable, arguing that income is an unnecessary concept and that economic theory can do quite well without it (1939, p. 180). It is true that modern general equilibrium theory (unlike macroeconomic theory) has, at one level, accepted Keynes's critique of the concept of homogeneous real income and manages to construct an equilibrium of heterogeneous prices and quantities without once referring to aggregate income. Yet our argument has shown that it can do so only by ignoring the possibility that effective demand may constrain the employment of the endowment; the use of effective demand requires the proper definition and recognition of money-income as a causal variable in a monetary economy.³

EXPECTATION

The General Theory extends Classical competitive equilibrium analysis so as to incorporate money into the theory of value. This extension of Marshallian analysis falls into two main areas, the definition of system equilibrium appropriate to a monetary economy, and the understanding and treatment of time. Keynes takes time seriously, as a one-way, irreversible sequence of historical events, and recognises that decisions are always made in the present, based on the unchangeable past and the unknown future. It is time which gives money its 'essential and peculiar' character, and makes a monetary economy

... one in which changing views about the future are capable of influencing the quantity of employment and not merely its direction. But our method of analysing the economic behaviour of the present under the influence of changing ideas about the future is one which depends on the interaction of demand and supply, and is in this way linked up with our fundamental theory of value. We are thus led to a more general theory, which includes the Classical theory with which we are familiar, as a special case. (*G.T.* p. xxii)

The understanding of time as irreversible has profound implications for equilibrium analysis. If today's decision to produce, consume or invest is to be described as an equilibrium outcome, the competitive forces bringing about this equilibrium must also act today, in the present. Past decisions and future outcomes are strictly irrelevant.

For Marshall, the present corresponds to the market period, during which a given stock of finished goods and endowment of factor services are traded, and the supply and demand for the product of each industry are held in equilibrium by competition. However, most production takes time. The decision to employ labour or invest in a capital-good today depends on the market prices that are expected to rule in the future (the 'expectations'), when the final output resulting from these decisions is finished and ready for sale.

One formal Walrasian response to time is to postulate the existence of complete markets, so that the price of future finished output at any date and in any state of the world can be determined today by the balance of supply and demand. Under these strong conditions the future is reduced to the present, time disappears, and equilibrium remains a meaningful, but ideal, concept. No-one disputes that not all futures and insurance markets exist, so the real question is whether competitive equilibrium theory can explain any important aspect of the world as we find it.

In the absence of a forward contract, decisions must be made on the strength of an expectation, something which already plays an important part in Marshall's system. Marshall's market prices are qualitatively different from his Normal prices, the expectation of which in the short period induces firms to produce goods in a particular quantity, and in the long period induces investors to order new capital equipment. Marshall does not suggest that Normal prices as such are directly observable, but he does assume that competition tends to bring market prices into line with Normal prices in both the short and long periods, and conflates this process of convergence through time with the determination of Normal prices as equilibrium prices. Keynes accepts for theoretical purposes that market prices tend to converge towards Normal prices; but he changes the definition of the equilibrium periods in terms of calendar time, as well as the concept of a stationary or steady state that is necessary for this process of convergence also to generate Normal values as equilibrium prices. While Marshall's stationary or steady state refers to a physical allocation of resources, Keynes will allow only a given *state of expectation* that is independent of the physical parameters. Furthermore, Keynes makes an important distinction between short-term expectation, which governs the level of production and employment, and long-term expectation, which governs the investment decision.

Walrasian general equilibrium theory denotes as a 'temporary' equilibrium (not to be confused with Marshall's usage, to mean market-period equilibrium) an equilibrium based on expectations rather than complete markets. In terms of realism, this is an improvement over the complete markets assumption, since it limits knowledge to the present configuration of endowment, technology and preferences, all of which are open to change. Today's temporary equilibrium may be superseded tomorrow, given change in the parameters. However no distinction is made in Walrasian models between short- and long-term expectation, between on the one hand, expectations of the prices of goods producible today and on the other, expectations of the future goods producible in turn with the capital-goods producible today. This amounts to making the state of expectation endogenous and postulating some nexus (*G.T.* p. 21) that co-ordinates expectations in such a way as to ensure full employment of the endowment.

Post Keynesian theorists have placed great emphasis on the state of long-term expectation and this will be addressed in the next section. However, the consensus interpretation of the state of short-term expectation, stemming mainly from Kregel (1976), needs revision. It has become common to assert that Keynes tacitly assumes the fulfilment of short-term expectations in *G.T.* Chapter 3. By this assumption, it is argued, he avoids the need to model the

formation of expectations as a process over time. On the contrary, there is no need to read in extra assumptions and implicitly disparage Keynes's capacity for theoretical reasoning. The principle of effective demand is itself a theory of the formation of short-term price expectations by the equilibrium of supply and demand.

In order to substantiate this claim, first consider again Keynes's conception of system equilibrium. He offers a theory of the level of employment at any time as an equilibrium value. His method of equilibrium analysis is static, but forward-looking. The analytical framework is a direct extension of Marshall's supply and demand apparatus for use at the macroeconomic level. The aggregate demand function (D) relates the total money-income expected by industry as a whole to the total level of employment (N), where the direction of causation runs from employment to income. The aggregate supply function (Z) relates the total expected money-income to the total level of employment (N), where the direction of causation runs from expected income to employment. The intersection of the aggregate demand and supply functions determines as equilibrium values the effective demand (let us call it D^*) and the level of employment (let us call it N^*).

The principle of effective demand is part of the theory of value and, in moving from the consideration of the individual industry to industry as a whole, there is no suggestion by Keynes that supply and demand have ceased to determine the prices and quantities of each product. Apart from improvements such as the introduction of user cost to deal with the element of supply price attributable to the use of existing capital-goods, Keynes's theory of value remains essentially that of Marshall and Pigou. However, the principle of effective demand solves the problem that supply and demand in each industry depend on the output and income of industry as a whole, and brings precision to Marshall's claim that short-period and long-period *expected* prices, and not only the spot prices of the market period, can realistically be treated as determined by the equilibrium of supply and demand.

There are major difficulties with Marshall's treatment of time and his theoretical distinction between periods, which Keynes refers to in his biography of Marshall (C.W. X) as unfinished business and takes pains to address in *The General Theory*. The principal difficulty resolved by Keynes is how the equilibrium periods should relate to real or calendar time. In *The General Theory*, both the market and short periods correspond to the same period of calendar time, the 'day'. Whereas Marshall distinguishes between them in terms of the length of time ('several months or a year') over which production and employment can adjust so that market prices become equal to

normal short-period supply prices, for Keynes the difference between the market and the short periods is that between realised and expected prices: between income and effective demand.

The production and employment decision involves two separate units of calendar time, which Keynes defines as the *day* and the *period of production*, which is a number of *days*. The day is Keynes's quantum unit of time, 'the shortest interval after which the firm is free to revise its decision as to how much employment to offer. It is, so to speak, the minimum effective unit of economic time' (*G.T.* p. 47, n1); the primary concern of *The General Theory* is the employment decisions of firms. This definition of a day is also the definition of the technical short period, in which entrepreneurs adjust the aggregate employment of labour associated with a given aggregate capital equipment to maximise their expected profits. The correspondence of the day with the market period again follows from the definition of the day, since it is the maximum interval for which the supply of finished output is limited to the stock on hand or producible on demand. Keynes's day need not correspond to a terrestrial day, but it does no harm to think of it as such, if only because the hours of over-time working can be, and often are, varied at such short notice. The *period of production* is the number of *days* 'notice of changes in the demand for [a product that] have to be given if it is to offer its maximum elasticity of employment' (*G.T.* p. 287). This definition is the macroeconomic counterpart of the period between starting and finishing an individual production process (*G.T.* p. 46), or *production period*.⁴

Keynes defines the long period in a unique and strictly *short-term* technical sense, to define the equilibrium on which the employment of labour and capital-goods will in theory converge if a new state of expectation persists for the full length of the period of production, allowing in particular for the production or depletion of raw materials and work-in-progress in line with the new pattern of production. This is very different from Marshall's concept of the long period ('of several years'), during which capital-goods are accumulated to the point where no new capital-good (and not only the marginal investment on a given day) yields more than the rate of interest, in a stationary state (or at least in a steady state of growth in line with secular growth in population and territory).

It is perhaps helpful to follow Joan Robinson in thinking of the terms market-period, short-period and long-period mainly as adjectives rather than substantives (Harcourt, 1995). That is not to deny the importance of their connection with intervals of calendar time. Each equilibrium period refers to a different type of adjustment: the market period mainly to market clearing, and income; the short period to the employment of labour and the other

factors of production (including existing capital-goods), and effective demand; the long period to the employment of new capital goods, and the capital stock. Thus we need to distinguish the nature of the adjustment from the interval of time in which it takes place, as well as from the time horizon of the relevant expectations which prompt adjustment. The market-period adjustment of the demand for and supply of current output and existing stocks takes place 'instantaneously', on a single day, cleared by spot market prices – this is fairly standard. The short-period adjustment of employment also takes place on a single day but refers to short-term expectations of income that will arise at the end of the various production periods for different goods. The long-period adjustment of the capital stock takes place as a dynamic process over the period of production, and is contingent upon a given state of expectation.

Many have been puzzled by the definition of aggregate demand as 'the proceeds which *entrepreneurs* expect to receive from the employment' (*G.T.* p. 25, emphasis added see also *G.T.* pp. 28–9, 89), rather than in terms of the expenditure of consumers and investors, the aggregate demand of 'Keynesian' economics. Yet this paradox is already implicit in Marshall's claim that Normal prices, which are prices expected by entrepreneurs *today*, are determined by the equilibrium of supply and demand. The answer is that Keynes's entrepreneurs must be understood as fulfilling two separate functions on either side of the market, as employers of labour on the one hand, and as wholesale and retail dealers on the other (see Marshall 1920, p. 283; *C.W.* XIII, p. 616). Employers are specialised in managing the risks of production, and dealers in managing the risks of marketing finished goods; a division of enterprise commonly observed in practice. In this construction, production takes place when an employer receives an order, usually from a dealer or another employer. Production to order implies, under perfect competition, the existence of a set of forward markets, for each good that is producible today, for delivery at the end of its production period. Competition between employers establishes a unique supply price for any given quantity, and competition between dealers, whatever their individual expectations about future spot prices, establishes a demand-price at which each dealer's demand is in equilibrium. If any speculation about future spot prices by employers is treated as a dealer activity, the equilibrium forward prices of current output become shared short-term expectations, which permits unique definition of 'the' state of expectation.⁵

The point of effective demand is a short-period equilibrium position, meaning that entrepreneurs as a whole adjust their employment of labour to maximise their expected profit with a given aggregate stock of capital-goods.

Since Keynes's short period relates to his day, and the day is the quantum unit of time, this means that aggregate demand and supply are in static equilibrium at all times (every day); the equilibrium process of finding the point of effective demand described at *G.T.* p. 25 takes place on a single day, the present day. The equilibrium price of the output of each industry corresponding to *today's* aggregate employment is determined *today* as the price which clears the supply offers by employers and the demand bids by dealers in the forward market for delivery at the end of the production period. Each day employment moves directly to the equilibrium position corresponding to the set of forward prices, so that within the quantum limit of the day as the unit of time, employment is in continuous equilibrium.

The set of equilibrium expected prices that determines effective demand corresponds to the state of short-term expectation (*G.T.* p. 46), so that it can properly be said that expectation determines output and employment, the title of *G.T.* Chapter 5. In modern terms, Keynes's short-term expectations are 'rational expectations', or in his own words, based on 'judicious foresight'. Although he recognises that in practice expectations may be formed by trial and error, from the perspective of economic theory 'the main point is to distinguish the forces determining the position of equilibrium from the technique of trial and error by means of which the entrepreneur discovers where the position is' (*C.W.* XIV, pp. 182–3).

By contrast, the state of long-term expectation is an entirely different matter. Keynes does not assume long-term expectations are fulfilled even in his long-period equilibrium (where they are merely unchanged), and indeed considers disappointment more than likely when expectations are not based on the rents of natural resources or monopoly. The problem is the durable nature of capital-assets: if the expectations upon which the investment was based prove mistaken, it is not possible, either to reverse the investment today, or to go back in time, adjust the original investment decision, and then check the revised results in the present, in order to find the equilibrium position. It is only in a stationary or steady state that adjustments made today might (given stable dynamics) be expected to have the same effect in the future as the same adjustments, made in the past, would have had today. So, the convergent feedback mechanism, which would be necessary to generate in practice a set of long-term equilibrium prices as the basis of prospective yield, is absent in any economy subject to unforeseen change, such as the one we inhabit. The period over which competitive equilibrium analysis is of scientific value relates directly to the time horizon within which expectations can reasonably be treated as determinate. The method cannot be applied to

the long term, thus wholly undermining the Classical concept of long-period competitive equilibrium, whether static or dynamic.⁶

To assume 'rational expectations' in the long term is heroically to assume a very unheroic world, in which the future can reliably be predicted from knowledge of the present and the past. The state of long-term expectation is as exogenous in *The General Theory* as the endowment and other Classical system parameters, meaning that it is beyond the reach of equilibrium analysis. It is a close cousin to the propensity to consume and the preference for liquidity, both of which also reflect the historical nature of time. These three psychological states represent rational (by which here I mean reasonable, not optimal in some objective sense) responses by purposeful individuals to the problems of time, in the real world where the Classical long-period equilibrium is logically unattainable, and therefore an objectively optimal response is physically impossible.

LIQUIDITY

Much has already been written by Post Keynesian economists about the state of long-term expectation, including the notion of conventional valuation represented by the famous beauty contest of *G.T.* Chapter 12. The inescapable fact that there is no such thing as 'fundamental value' (except with hindsight) has been driven home forcibly by recent events. Yet less attention has been given to what Keynes means by 'liquidity' and indeed most Post Keynesians accept the common understanding of liquidity as ease of conversion into money. Most have missed that Keynes wrote about something quite different, perhaps encouraged, once again, by Hansen's statement that 'not much would have been lost if [*G.T.* Chapter 17] had never been written' (1953, p. 159).

Keynes distinguishes between the attributes of convertibility and liquidity; there is more to his conception of liquidity than convertibility. In principle, an asset with low convertibility may have high liquidity, and *vice versa*, however counter-intuitive this may now seem. Liquidity is intimately related with expectation in *The General Theory*, and its meaning is fundamental to the understanding of the book as a whole. Kaldor notes that

Mr Keynes, in certain parts of *The General Theory* appears to use the term 'liquidity' in a sense which comes very close to our concept of 'perfect marketability'; ie goods which can be sold at any time for the same price, or nearly the same price, at which they can be bought. Yet it is obvious that this attribute of goods is not the same thing as what Mr Keynes really wants to mean by 'liquidity'. Certain gilt-edged securities can be bought on the Stock Exchange at a price which is only a small fraction higher than the price at which they can be sold; on this definition therefore they would have to be regarded as highly liquid assets. In fact it is very difficult to find satisfactory definition of what constitutes 'liquidity' – a difficulty, I think, which is inherent in the concept itself. (Kaldor, 1939, p. 4, n5)

The paradox of *The General Theory* is that Keynes so emphasises the liquidity of money within a theoretical framework, based on perfect competition, in which *all* assets are equally marketable or convertible. Why does he then discuss *degrees* of liquidity (*G.T.* p. 226) and, furthermore, suggest that in certain historic environments *land* has 'ruled the roost' in the hierarchy of liquidity (*G.T.* p. 241)? If the assumption of perfect competition is to be qualified in practice so that differences in the liquidity of assets are allowed, as a function of their degree of convertibility, this suggestion is startling. Land can never have been preferred for its convertibility, let alone as the medium of exchange. Keynes claims that historically it has possessed high liquidity, despite low convertibility. Conversely, in his discussion of organised investment markets, which come closest in practice to the ideal of perfect competition in terms of transaction costs and uniformity of price, he treats their 'liquidity' (note the inverted commas) as an illusion and something distinct from true liquidity. Listed equity securities have high convertibility, but low liquidity.

Keynes's implicit definition of liquidity is the degree to which the value of an asset, measured in any given standard, is independent of changes in the state of expectation. Liquidity risk is therefore the possible (*not* probable or expected) loss of value as a result of a change in the state of expectation, which includes the state of confidence. In *The General Theory*, there is a hierarchy of liquidity risk, in which bonds are superior to capital-goods, and money is superior to bonds. This hierarchy is of crucial importance to Keynes's division between consumption and different types of investment decisions, which later theory has neglected. Keynes's conception of liquidity is intimately bound up with his conceptions of the state of expectation and of the historical nature of time. Liquidity has value only because the future is unknown, and its value increases with our fear of what might happen that we cannot prevent or insure against. In *The General Theory*, money is *the* liquid

asset and dominant store of value, as well as the standard of value, and money's liquidity is the foundation of its non-neutrality.

Keynes comes closest to defining liquidity from first principles in his discussion of a situation where the standard of value (perhaps the goat to which he refers in *A Treatise on Money*, C.W. V, but certainly not land) does not have the normal character of money:

In [a non-monetary] economy capital equipments will differ from one another (a) in the variety of the consumables in the production of which they are capable of assisting, (b) in the stability of value of their output (in the sense in which the value of bread is more stable through time than the value of fashionable novelties), and (c) in the rapidity with which the wealth embodied in them can become 'liquid', in the sense of producing output, the proceeds of which can be re-embodied if desired in quite a different form. (*G.T.* p. 240)

Liquidity is firstly a function of the degree to which a capital-asset can be used in the production of different consumables, so that a change in prospective yield based on production in one line can be met by switching to another line. The prospective yield on the second line is lower than originally expected from the first, but higher than now expected from the first after the change in expectations, reducing the impact of the change on the value of the asset. Keynes then refers to the importance of the stability of the value of the consumables produced. Stability in this context means independence from changes in the state of long-term expectation (*e.g.* bread is not a fashion item). The third element of his definition is the 'turnover period', the period over which the asset can be converted through production into consumable output. The shorter the period, the less likely is it that a change in the state of long-term expectation will arise during the life of the asset. Clearly Keynes is here thinking in aggregate terms: although an individual investor can always exchange an asset for money under perfect competition, its convertibility for the community as a whole depends on its conversion into consumption-goods through production and not just exchange.

For the various rather complex reasons set out in *G.T.* Chapter 17, the standard of value tends to be the asset whose value in terms of consumable output is the most stable with respect to changes in the state of long-term expectation. Thus when Keynes refers to liquidity he really does mean money, including short-term bank and state debts whose value is not sensitive to changes in the rate of interest because of the short period to redemption. Keynes treats capital-assets as fully convertible but not liquid, and mentions, almost as a footnote to the above definition (*G.T.* p. 240), the need for a premium to compensate for their liquidity risk relative to bonds. The rate of

interest on bonds, where there is no 'risk proper', is entirely compensation for liquidity risk from unexpected changes in interest rates. From this it is clear that Keynes regards capital-assets as less liquid than bonds, in the sense that their value is more sensitive to changes in the state of long-term expectation, since the value of capital-assets depends on expectations of both the interest rate and the prospective yield. On this definition of liquidity, money and bonds dominate capital-assets in terms of both 'risk proper' and liquidity risk. The first step in the portfolio decision is to choose between money and the next most liquid and safe class of assets, i.e. bonds; only then does the choice arise between capital-assets and bonds. Thus liquidity risk is the criterion for placing different categories of asset in separate compartments, and the demand for liquidity cannot be satisfied by assets other than money (i.e. the set of assets convertible on demand into means of payment at a fixed price in terms of the standard of value).

This 'hierarchy of liquidity' is central to the causal structure of *The General Theory* that Keynes describes in his 1937 summary. Stage 1: 'The rate of interest is the factor which adjusts at the margin the demand for hoards to the supply of hoards'. Stage 2: 'The owner of wealth, who has been induced not to hold his wealth in the shape of hoarded money, still has two alternatives between which to choose. He can lend his money at the current rate of money interest or he can purchase some kind of capital asset ... This is brought about by shifts in the money prices of capital assets relative to the prices of money loans': so bonds (money loans) dominate capital assets. Stage 3: 'If the level of the rate of interest taken in conjunction with opinions about their prospective yield raise the prices of capital assets, the volume of current investment ... will be increased': thus the supply price and output of new capital assets rises to meet the demand price. Stage 4: 'The amount of consumption goods it will pay entrepreneurs to produce depends on the amount of investment goods which they are producing': investment determines total employment and consumption through the multiplier relation. 'This that I offer is, therefore, a theory of ... employment because it explains *why*, in any given circumstances, employment is what it is' (C.W. XIV pp. 112–122).

It is of the greatest importance to realise that in *The General Theory* individuals do not choose between (say) consumption-goods on the one hand and bonds or capital-assets on the other (Fisher and Hicks); nor between money and consumption-goods (Pigou and Friedman), or even money and capital-assets (Minsky). Keynes does not accept the Classical axiom of gross substitution, he insists upon a causal sequence: first, liquidity-preference must be satisfied and the prices of bonds adjust in response; secondly, the

prices of capital assets must adjust to the prices of bonds. Finally aggregate income, employment and consumption adjust to the rate of investment in new capital assets. Without a clear understanding of liquidity, Keynes's one-way causal sequence appears arbitrary and inferior to a treatment in which direct trade-offs exist between all classes of goods and factor services.

RELEVANCE TO POLICY

After a long period in the wilderness, Keynes is back in fashion. 'Keynesian' demand management policies made an overnight resurgence in response to the 2008 financial crisis and government deficits have been running at levels unprecedented in peace-time. Nevertheless, just as Keynes's impact on academic economic theory has been minimal, three examples will suffice to show that key policy areas remain largely immune to his influence.

Recent developments have so far left intact the doctrine of so-called 'flexible labour markets' as the remedy for unemployment. Underpinning this is the theoretical concept of the 'natural rate' of unemployment, which corresponds to the rate consistent with frictional and voluntary unemployment (on Keynes's definitions in *G.T.* Chapter 2). These are matters of great importance, of course, and of particular relevance to productivity growth and social welfare. There is much to be said for policies that make it easier for workers to retrain and move between occupations and industries as the pattern of demand changes. Equally, it is important that employment and welfare policies do not create perverse incentives, preventing a rational reallocation of labour in the long-term interests of both workers and the economy as a whole. However the flexible labour market is often simply a euphemism for an attack on organised labour, employment protection rights and welfare benefits. Leaving aside the partisan motives of the business class, the public interest case for such policies is based on the Classical theory of employment and

'the conclusion, perfectly logical on their assumption, that apparent unemployment (apart from the admitted exceptions) must be due at bottom to a refusal by the unemployed factors to accept a reward which corresponds to their marginal productivity. A classical economist may sympathise with labour in refusing to accept a cut in its money wage, and he will admit that it may not be wise to make it to meet conditions which are temporary; but scientific integrity forces him to declare that this refusal is, nevertheless, at the bottom of the trouble.' (*G.T.* p. 16)

Thus the doctrine of flexible labour markets, in the form in which it is generally promoted, wholly ignores Keynes's careful demonstration that it is the level of employment which determines the real cost of labour and that not only does the opposite not hold, the real cost of labour is not a causal variable and certainly not proxied by money wages or benefits. Wide movements in the 'natural rate' are interpreted as having their roots in shifts in productivity or labour practices, based on a partial reading of the empirical evidence (Galbraith, 1997; Nickell, 1997), and no credence is given to the idea that these variations in the unemployment rate reflect, in great part, movements in the level of effective demand.

The second area of policy is the reform of the international trading and monetary system. Although Keynes is often given credit for the Bretton Woods system, the institutions which emerged were a pale imitation of his own proposals and were empowered and have survived only insofar as they have served the interests of Anglo-American hegemony. The downfall of the pegged exchange rate system and the end of 'Keynesian' demand management in the 1970s coincided with the counter-reformation in economic theory and was followed by the era of financial liberalisation. Yet even during the 'Keynesian' era, policy-makers failed to distinguish between aggregate and effective demand and sought to maintain full employment by demand management with insufficient attention to the need for demand to become effective, ie matched by supply. The most important aspect of this is the balance of payments constraint on employment and growth which plagued countries, such as the UK under Bretton Woods, that tended towards full-employment trade deficits. Keynes had offered two alternative approaches to this problem: managed trade and surplus country adjustment. The idea of managed trade was anathema and the idea that payments and exchange rate adjustment should fall on surplus countries, as embodied in Keynes's original plans for an International Clearing Union, has always been opposed by large surplus countries (the US in the 1940s, West Germany and Japan in the later 1960s and early 1970s, China today). Since in political terms it is these surplus countries that determine the outcome in negotiations over the international monetary system, it is unsurprising that no progress has been made.

So we find that global demand is still constrained by an excessive propensity to save, in the form of trade and payments surpluses intended to promote domestic employment, combined with a propensity to hoard in the form of central bank reserves to protect exchange rates from the depredations of international speculation. The era of 'financial liberalisation' sold an image of smoothly adjusting capital and foreign exchange markets allocating

capital efficiently across the globe, diversifying risk, promoting stability and freedom. The reality has been a massive loss of democratic sovereignty over domestic policy, forcing states either into monetary union or into amassing war chests against the next financial crisis. The natural linkage between monetary and political union, perhaps desirable in itself, combined with an inability to regulate an independent exchange rate, has forced states into premature membership of the European Union and the euro-zone. The Union has been enlarged hastily, without putting in place an adequate political or fiscal mechanism for dealing with intra-union regional imbalances, placing severe strains on peripheral countries that may yet break the union and in any case quite likely to leave generations of unemployed in the poorer regions. The choice faced by Keynes, between the fetters of the Gold Standard and the anarchy of the inter-war period, remains before us still, in a new form, and the world remains deaf to pleas for a more rational way of organising the international financial system.

One of the fundamental obstacles to the reform of international finance has been financial liberalisation itself, particularly the free movement of financial capital across borders. Keynes correctly understood such capital movements to be incompatible with an orderly exchange rate system and the world has chosen 'freedom' over order. The removal of cross-border exchange controls on portfolio investment were among the first fruits of liberalisation and have been followed down the years by a change in the nature of the regulation of financial institutions from a 'structural' to a 'prudential' approach. Structural regulation makes a link between form and activity, defining different types of financial institution and limiting each to a particular kind of activity and creating 'fire-walls' between them: the Glass-Steagall Act is an example. Structural regulation conflicts with the competitive ethos of liberalization and fire-walls appear to the liberalizer simply as obstacles to competition and enterprise. Prudential regulation, by contrast, is intended to allow integrated financial institutions the freedom to pursue any activity provided they meet various conditions, notably capital adequacy. While the intention of the new approach was to promote competition and innovation at the same time as protecting the system from risk, regulators have proved no match for the larger financial institutions and have imposed an increasingly oppressive compliance burden on smaller ones, while the Basle II regime itself has proved pro-cyclical and destabilizing. The implicit acceptance by the state of responsibility for the effectiveness of this kind of regulation has led to the almost universal government guarantee of retail deposits in the face of the failure of the regulatory system in 2008. It

has not escaped public notice that bank shareholders and managers have thereby succeeded in transferring the cost of their failure to the state.

As in the case of unemployment and the ‘natural rate’, underpinning financial liberalisation is another theoretical concept, the ‘efficient markets hypothesis’. Based in turn on the concept of long-term rational expectations, this is another example of the refusal of policy-makers to accept the core implications of Keynes’s thought. Keynes would, I think, have been horrified by financial liberalisation and by the blind faith of policy-makers and regulators in the stabilising ability of speculative market forces to identify fundamental value. The failure to recognise that there is no such thing as fundamental value (except with hindsight) has left policy-makers wide open to the larger failure to recognise the destabilising power of speculation when:

‘the energies and skill of the professional investor and speculator are mainly occupied ... not with making superior long-term forecasts of the probable yield of an investment over its whole life, but with foreseeing changes in the conventional basis of valuation a short time ahead of the general public ... Moreover, this behaviour is not the outcome of a wrong-headed propensity. It is an inevitable result of an investment market organised along the lines described’ (*G.T.* pp. 154–155).

Furthermore the financial sector has long lost touch with its primary social justification as a source of finance for industrial investment, i.e. the production of new capital-goods. It is a commonplace in the City of London that the City does not exist to finance industry, industry exists to finance the City. The hypertrophy of financial instruments over the last decade, fuelled by sophisticated, if theoretically ill-founded, mathematical alchemy and computer technology, converting some underlying piece of lead into gold, exemplifies the elevation of rentier capitalism to an end in itself and has met its Nemesis in the failures of Lehman Brothers and AIG.

The credit crunch itself has been an object lesson in the importance of liquidity preference. With a significant proportion of bank depositors switching to foreign banks or sovereign debt, UK and US banks themselves became reluctant to lend to each other in order to protect their dwindling reserve assets. Each bank was torn between the need to hoard reserves against the possibility of a run and the high cost of doing so. Keynes’s definition of money became strikingly relevant:

Without disturbance to this definition, we can draw the line between “money” and “debts” at whatever point is most convenient for handling a particular problem. For example, we can treat as money any command over general purchasing power which the owner has not parted with for a period in excess of three months, and as debt what cannot be recovered for a longer period than this; or we can substitute for “three months” one month or three days or three hours or any other period; or we can exclude from money whatever is not legal tender on the spot. (*G.T.* p. 167, n. 1)

At the height of the crunch, ‘money’ moved right to the end of this spectrum, as exemplified by the unparalleled spread of inter-bank interest rates over central bank rates (e.g. Bank of England, 2009, p. 15). The emergency measures (such as guarantees of inter-bank lending, extended discount facilities and quantitative easing) were successful, not because they addressed long-term bank solvency in the sense of capital adequacy, i.e. the *probability* of loss (which had been addressed separately), but because they removed the *possibility* of default on short-term inter-bank deposits through further bank runs. Keynes’s theory of interest was mainly concerned with interest rates on long-term bonds, since fundamental uncertainty about the spot value of debts is normally a property of long time horizons, yet during the period of the financial crisis, the reality of liquidity preference became searingly clear, even at the short end.

Yet still, after all we have been through, the conventional wisdom remains that interest rates are determined by the supply and demand for loanable funds and the case for cutting public deficits is partly that an increase in national saving will reduce interest rates:

Shadow Chancellor George Osborne rightly believes cutting spending allows interest rates to remain lower than they would otherwise be. Indeed, this is what textbook macroeconomic models suggest. The Bank of England believes much the same. (Financial Times, 2010)

In darker moments, one is inclined to fear that the conventional wisdom, together with the mainstream macroeconomic theory from which it derives, is impervious to reason or experience.

CONCLUSION

I have argued that Keynes’s direct influence on economic theory and policy has so far been minimal. This, perhaps surprising, conclusion does not discount the importance of the policies of demand management associated

with his name, it merely emphasises that he gave cogency, respectability and authority to policies advocated by many others. Nevertheless, while such a conclusion may be disappointing in relation to the hopes that were entertained 75 years ago, it is actually cause for considerable hope for the future. Economic policy is ultimately rooted in economic theory, consciously or not. The first attempts to articulate the Keynesian revolution in theory have failed. In the case of the 'Keynesian' neoclassical synthesis, Keynes's distinctive innovations were rejected so that his message could be assimilated into the mainstream of economics as the economics of rigidity, now represented by a 'New Keynesian' economics that should really be called 'New Pigovian' economics. The Post Keynesians, for the most part, rejected Keynes's Marshallian framework as an attempt to pour new wine into old wineskins and many have moved outside the mainstream of economic theory based on the competitive equilibrium of supply and demand. Keynes himself, by contrast, sought to redefine the very mainstream itself.

The research programme initiated by Keynes has not failed or degenerated, it has barely begun. The history of science suggests that it can take several generations of academic scholarship for truly original ideas to be received. Scientific progress involves many wrong turns and dead ends. I have tried here to show that future theoretical research must start from three key propositions about *The General Theory*:

- A valid macroeconomic theory of a competitive monetary economy cannot begin from the assumption of homogeneous output. Competitive corn models are ineluctably Classical. Production in a monetary economy involves the hiring of labour by the payment of a money-wage. The principle of effective demand represents accordingly the conception of competitive system equilibrium relevant to a monetary economy and supersedes the Classical conception of general equilibrium as the preferred allocation of factor resources. This invariably means that factor markets do not clear and factor prices are not equilibrium values.
- The principle of effective demand is itself a theory of the formation of the state of short-term expectation (which determines employment at any time) by the equilibrium of supply and demand. In short, it is a restatement of the Marshallian theory of value so as to take proper account of time and money. The concept of what we now call 'rational expectations' was well understood by Keynes under the name of 'judicious foresight'. The key distinction he drew was between short-term expectation, relating to currently producible goods, and long-term expectation, relating to the investment decision. While the method of

rational expectations can validly be applied to the short term, the long term is an entirely different matter.

- The causal structure of *The General Theory* cannot be understood without the recognition that liquidity for Keynes is far more than a matter of convertibility and is intimately related with the state of expectation. Liquidity means for Keynes stability of value in the face of changes in the state of expectation, so that in certain circumstances an asset such as land can be a liquid asset and stock market securities are generally illiquid for society as a whole.

As for policy, the doctrines of labour market flexibility and efficient markets have their roots in Classical theory. The former leads to cruel and futile attempts to remedy involuntary unemployment by creating insecurity and poverty through cuts in employment rights and benefits. The fruits of the efficient markets hypothesis have been a financial crisis of unprecedented scale and a plunge in global activity which has, perhaps, been countered only by the single-minded application of 'Keynesian' demand management policies in the teeth of an academic orthodoxy that largely denies their potency. Finally, we are unlikely ever to see a world of human flourishing, free from the scourge of involuntary underemployment, without radical reform of the international monetary system in the teeth of an economic and political ideology committed to financial liberalisation. Such reform will only become conceivable if and when the intellectual substrate of the conventional wisdom finally comes to terms with the message of *The General Theory*.

NOTES

1. There is also a clear connection between corn models and the under-consumption (i.e. over-production) theories of Malthus, Marx and Hobson, who noted, in effect, that there must be a limit to the accumulation in granaries.
2. This is not to deny that the concept of effective demand can be expressed in quite different terms such as Kalecki's or Sraffa's, by introducing an exogenous mark-up over average cost. In these alternative constructions, prices are not determined by supply and demand. For an explanation of the difference between the degree of monopoly and Keynes's degree of competition see Hayes (2008).
3. The 'fixed-price general equilibrium' approach introduces a similar over-determining constraint on employment of the endowment. The difference is that Keynes's own concept of effective demand retains market-clearing in new goods markets with factor demand as a residual (see Malinvaud, 1985, p.31, footnote 28). The problem is that 'in the long run', if prices are flexible, Malinvaud's conception of equilibrium reverts to the Classical.
4. The consensus about Keynes's use of time periods, from which I depart, is that Keynes's day and production period coincide, and correspond to a Hicksian week (Chick, 1983; Amadeo, 1989), an equation which tacitly assumes a uniform production period for all

goods. Daily employment thus differs, for these authors, from the short-period employment equilibrium in which expectations are fulfilled.

5. Chick (1983, 1992) offers perhaps the most sophisticated development of the received idea that the equilibrium point of effective demand is discovered by the fulfilment of expectations. She distinguishes between D^e , aggregate demand in terms of entrepreneurial expectations (which may be entirely individual to each firm, and thus does not permit definition of a unique and common state of expectation), and D , meaning aggregate demand in terms of expenditure. The point of effective demand is then defined by the intersection of Z and D^e , but equilibrium is not reached in terms of fulfilled expectations until (if ever) D^e coincides with D . A difficulty with her interpretation is that it leaves no room for Keynes's long-period employment, which various other authors have also found problematic.
6. Harrod did not accept that our ignorance of the future made long-term equilibrium theory pointless and regarded the absence of dynamic equilibrium from *The General Theory* as a weakness. He envisaged (and subsequently contributed to) the development of a theory 'concerned not merely with what size, but also what rate of growth of certain magnitudes is consistent with the surrounding circumstances. There appears to be no reason why the dynamic principles should not come to be as precisely defined and as rigidly demonstrable as the static principles' (1937, p. 86). This is also the view ultimately embodied in modern Classical dynamic general equilibrium theory based upon the concept of long-term long-period equilibrium that Keynes fundamentally rejected. Theories of accumulation and technical change are possible but they should not be based on competitive equilibrium.