MONEY AND THE REAL WORLD[1]

" MONEY," Hicks has declared, " is defined by its functions . . . ' money is what money does,' " [8, p. 1]. Harrod notes that " Money is a social phenomenon, and many of its current features depend on what people think it is or ought to be " [7, p. x]. " Money," Scitovsky adds, " is a difficult concept to define, partly because it fulfils not one but three functions, each of them providing a criterion of moneyness . . . those of a unit of account, a medium of exchange, and a store of value " [15, p. 1].

While economists have probably spilled more printers' ink over the topic of money than any other, and while monetary theory impinges on almost every other conceivable branch of economic analysis, confusion over the meaning and nature of money continues to plague the economics profession. Pre-Keynesian neo-classical economists tended to emphasise the medium of exchange aspect of money, as the early quantity theorists stressed a strict relationship between the money aggregate and transactions (or income). In a neoclassical world of perfect certainty and perfect markets, with a Walrasian auctioneer assuring simultaneous equilibrium at a given point of time, it would of course be irrational to hold money as a store of value as long as other assets provided a certain positive yield [14, pp. 122–4]. In the absence of uncertainty, neoclassical theory had no room for the store of value function in its definition of money; nor would money play any more important role than peanuts in a neoclassical world. The *tâtonnement* process implies that no transactions occur until equilibrium is attained (*i.e.*, recontracting is essential); hence, anyone holding money either during the auction or till the next market period is irrational. Why hold money if it is really not needed for transactions, since in equilibrium goods trade for goods, and since the present and the future value of all economic goods can be determined (at least in a probability sense) with complete certainty?[2] The essential nature of money is disregarded in all Walrasian general equilibrium systems since there is no asset whose liquidity premium exceeds its carrying cost.[3] As Hahn has recently admitted " *the Walrasian economy that we have been considering*, although one where the auctioneer regulates the terms at which goods shall exchange, *is essentially one of barter* " [5, p. 3].

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[2] The introduction of production into a Walrasian model requires that all future prices of all possible quantities that could be bought or sold be known with certainty; otherwise, production involves an irreducible uncertainty since there must be a current contractual commitment to hire resources to produce products which will be available to the market at some future date.

[3] See Keynes' definition of a non-monetary economy [11, p. 239].

Keynes was the first important economist bluntly to accuse the neoclassical view of the nature of money as foolish. Keynes wrote:

> Money, it is well known, serves two principal purposes . . . it facilitates exchanges . . . In the second place, it is a store of wealth. So we are told, without a smile on the face. But in the world of the classical economy, what an insane use to which to put it! For it is a recognised characteristic of money as a store of wealth that it is barren . . . Why should anyone outside a lunatic asylum wish to use money as a store of wealth? [10, p. 186–7]

His answer to this rhetorical question was clear and unequivocal: " our desire to hold money as a store of wealth is a barometer of the degree of our distrust of our own calculations and conventions concerning the future . . . the possession of actual money lulls our disquietude " [10, p. 187]. Distrust? Disquietude? These are states of mind which are impossible in a world of certainty.

It is in the Keynesian world where

> expectations are liable to disappointment and expectations concerning the future affect what we do today . . . that the peculiar properties of money as a link between the present and the future must enter. . . . Money, in its significant attributes, is above all a subtle device for linking the present to the future [11, pp. 293–4].

This link can exist only if there is a continuity over time of contractual commitments denominated in money units. It is the synchronous existence of money and money contracts over an uncertain future which is the basis of a monetary system whose maxim is " *Money buys goods and goods buy money; but goods do not buy goods* " [1, pp. 207–8].

Despite the victory of the Keynesian Revolution for many practical short-run employment policies, subsequent developments in monetary theory by Patinkin, Friedman, Tobin and others have regressed on this crucial aspect of uncertainty. These modern monetary theorists, some who have been labelled neoclassical, some Keynesian, but all right-of-centre, have ignored Keynes' insistence that certain propositions were so uncertain in principle as to be incapable of having any numerical value; and they have instead substituted the concept of quantifiable, predictable risk for uncertainty.[1] At the same time, these modern monetary theorists have swung

[1] Risk can, *via* probability statements, be reduced to a certainty; uncertainty cannot. Modern monetarists fail to detect this crucial difference. Keynes, on the other hand, insisted that uncertainty was the sole intelligible reason for holding money, and by uncertainty he meant that there " was no scientific basis on which to form any capable probability whatever. We simply do not know " [10, pp. 184–5]. Thus, true uncertainty, in the Knight–Keynes sense, does not obey the mathematical laws of probability. Keynes, who spent a substantial part of his early years studying and analysing the concept of Probability, believed that certain propositions (or events) were incapable of possessing a measurable value in terms of probability statements or decision weights [6, pp. 653–4]. Nowadays, Shackle comes closest to expressing the Keynesian view when he indicates that uncertainty involves doubt or disbelief of all conceivable outcomes; the complete set of subjectively

with the Keynesian pendulum towards emphasising the extreme opposite view of the primary function of money from that which the pre-Keynesian neoclassicists held. For these monetary theorists it is, paradoxically, the store of wealth function of money which is highlighted in their models of complete certainty. Thus, for example, Tobin declares " The crucial property of ' money ' in this role is being a store of value " [17, p. 833], as he emphasises asset choice or portfolio balance among a menu of assets all with *certain* yields. Friedman defines money as " anything that serves the function of providing a *temporary abode for general purchasing power* " [2, p. 186], while simultaneously assuming that in equilibrium there is no uncertainty since all " permanent " anticipated real values are unchanged during the period under analysis, *i.e.*, all changes are foreseen from the beginning [4, p. 223] [also see 3, pp. 326–9].

Similarly, the well-known real balance effect of Patinkin's model is based on the store of value aspect of money. The flexibility of money wages and prices, which is essential to the generation of a real balance effect and the equilibrium position, requires certainty conditions [13, p. 275] and therefore removes the need for money as a store of value.[1] Patinkin succinctly epitomises the modern monetarist view of money being concerned " with the *utility of holding money*, not with that of *spending* it. This is the concept implicit in all cash-balance approaches to the quantity theory of money; and it is the one that will be followed explicitly here " [13, p. 79]. Furthermore, Patinkin continues

> our concern . . . is with the demand for money that would exist even if there were perfect certainty with respect to future prices and interest. Uncertainty does play a role in the analysis, but only uncertainty with respect to the timing of payments. Thus one by-product of the following argument is the demonstration that dynamic or uncertain price and/or interest expectations are not a *sine qua non* of a positive demand for money . . . The general approach of the following argument is in the Keynesian spirit of analysing the demand for this asset as one component of an optimally chosen portfolio of many assets [13, pp. 80–1].

But how can an analysis of portfolio decisions which irretrievably dispenses with uncertainty and faulty expectations—as does much of what passes for advanced monetary theory in the current literature, be in the " spirit of Keynes? " The music of this lively if mislabelled " Keynesian " gavotte which emphasises portfolio balance in a world of certainty may be the melody to which most modern monetarists trot, but surely it is not attuned

determined eventualities need not have decision weights that sum to unity or any particular total. Nor is it necessary when changing decision weight for one eventuality or recognising the possibility of a new and different outcome to alter the weights of the other events [18, pp. 9–10].

[1] Patinkin permits uncertainty to enter the front door *via* the assumption that during the " period " the individual is uncertain as to when he receives payments or is required to make payments, while simultaneously kicking uncertainty out of the back door by asserting synchronisation of payments by the end of the period, in equilibrium (e.g., 13, pp. 14, 80].

to Keynes' majestic monetary dirge for Say's Law. It is only in a world of uncertainty and disappointment that money comes into its own as a necessary mechanism for deferring decisions; money has its niche only when we feel queasy about undertaking any actions which will commit our claims on resources on to a path which can only be altered, if future events require this, at very high costs (if at all).

Recognition of this desire to avoid the commitment of claims on resources provides the insight necessary to describe the social institutions associated with money as well as the elemental and peculiar properties which are necessary to fulfil the two equally important functions of money, namely, a generally accepted medium of exchange, and a store of value in a modern, monetary, market-oriented, but uncertain world.

These necessary properties of anything which will fulfil the functional definition of money are:

(1) a zero (or negligible) elasticity of productivity, so that if individuals, uncertain about the future, want to defer additional commitments of resources, their increased demand for money as a mode for postponing action will not encourage entrepreneurs to employ additional resources in the production of additional quantities of the money commodity:

(2) a zero (or negligible) elasticity of substitution, so that if individuals want to preserve additional options for action for the future, the increase in the price of money induced by an increase in the demand for money as a store of value does not divert people into substituting other assets, which have high elasticities of productivity, as a store of value. Hence the demand for a store of value, in an uncertain world, does not generate the demand to commit resources. Thus the virtuous interaction between supply of resources and the demand for resources which is succinctly expressed *via* Say's Law is broken:

(3) the cost of transferring money from the medium of exchange function to the store of value function or *vice versa* must be zero (or negligible) so that individuals do not find it expensive to defer decisions or to change their minds. Minimising their transactions costs requires the existence of at least two economic institutions: (*a*) offer and debt contracts denominated in money units and (*b*) legal enforcement of such contracts. An additional contribution to the minimising of such transactions costs is the presence of an institution, namely a clearing system, which permits using private debts in the settlement of transactions as long as it is expected that the private debt can be promptly converted into the form of money which is enforceable in the discharge of contracts.

In sum then, in an uncertain world, a monetary system is associated with at least two and usually three institutions—namely, contracts, enforcement

and clearing. The thing which becomes the money commodity will have two properties, a zero (or negligible) elasticity of productivity and a zero (or negligible) elasticity of substitution between it and any other good which has a high elasticity of productivity.

It is a failure by many able but wrong-headed economists to comprehend the importance of these three institutions and two properties which are peculiar to money in a monetary economy, which has led to the shunting of much of modern monetary analysis on to a wrong line.

Any model of a monetary, market-oriented economy which attempts to provide insights about the real world should have the following characteristics:

(1) Decision making by firms and households who are fully aware that human judgment is fallible.

(2) The existence of contractual agreements, enforceable by acceptable legal institutions, which permit the sharing of some of the burdens of uncertainty between the contracting parties.

(3) Different degrees of organisation of spot and future markets for all sorts of real goods and financial assets. In many cases, either only a spot or a future market exists for a particular item because of difficulties of organising a market in a world of incomplete information; and even in markets which do exist, there may be significant and increasing transactions, search and information costs.

(4) Money buys goods in these markets, and goods can buy money, but except for some relatively small—but not necessarily unimportant—markets, goods never buy goods.[1] As an immediate corollary to this condition it follows that demand involves want plus the ability to pay and therefore financial conditions can affect real markets.

(5) The various institutions which develop in organising a market can affect the price path in the market as it reacts to a disequilibrium situation.

(6) There is a generally available clearing mechanism for private debts which permits the existence of a fractional reserve banking system. There are also non-bank financial institutions which, because they lack a generally available clearing mechanism independent of the banking system, cannot create a medium of exchange. Nevertheless, these financial intermediaries can affect financial flows and hence market demands.

(7) There is " confidence " in the monetary and financial system.

Thus the main characteristics of a real world monetary economy are Uncertainty, Fallibility, Covenants, Institutions, Commerce, Finance and

[1] Goods should be interpreted as including financial assets as well as real commodities and services. In some markets such as organised exchanges, assets may clear against assets, without resort to money as a medium of exchange [Cf. 1, pp. 207–8].

Trust. These are the Seven Wonders on which the Modern World is based. Simultaneously, these are the sources of the outstanding faults of a modern monetary, free market economy, namely " its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes " [11, p. 372].

The Nature And Importance Of Money

Hicks has observed that although " monetary theory is less abstract than most economic theory, it cannot avoid a relation to reality " [8, p. 156]. Yet, much of the current literature on monetary theory, based on Walrasian general equilibrium foundations (to which Professor Hicks has provided much impetus), is unrealistic. In the real world, money is not created like the manna from heaven of a Patinkinesque world or dropped by helicopter as in Friedman's construction. In the real world, money " comes into existence along with debts, which are contracts for deferred payment, and Price-lists, which are offers of contracts for sale or purchase " [12, p. 3]. Contracts are therefore essential to the phenomenon of money, and the existence of institutions which can enforce the discharge of contractual commitments for future action are essential in providing trust in the future operation of the monetary system. Thus, the existence of institutions, normally operating under the aegis of the State, provides assurances of the continuity between the present and the future which is necessary if one is going to hold money as a store of value. It is with the development of such State sponsored institutions that the government appropriated to itself the right to define what is the unit of account and what *thing* should answer that definition. Thus the State " claimed the right to not only enforce the dictionary but also to write the dictionary " [12, p. 5]. Only if the community loses confidence in the ability of State institutions to enforce *contracts*, does the monetary system break down, and the community reverts to barter practices. For a developed interdependent economy where production takes time and contractual commitments for the hiring of resources must occur some time before everyone can possibly know how valuable the outcome will be, barter practices are so wasteful of resources, and so costly, that most members of society will cling to any ray of hope in the government's ability to enforce contracts in the future. Hence most communities reveal a preference to use even a crippled monetary system rather than revert to barter. It is only when the situation has deteriorated to such an extent that everyone is completely uncertain of the meaning of contractual commitments, that a catastrophic breach in the continuity of the system is inevitable. Such a catastrophe, by wiping out all existing contracts simultaneously, provides a foundation for developing a new monetary unit of account which can be utilised in denominating new contractual commitments.

Thus, as Keynes insisted so many years ago, money and contracts are

intimately and inevitably related. Money as a numeraire is *not* merely a device to help the neoclassical economist specify the relationship among diverse goods—it is not merely a lowest common denominator. The very institution of money as a unit of account immediately gives rise to at least two types of contracts—contracts which offer to provide goods and services in exchange for money (*i.e.*, offers to buy money *via* the production and delivery of goods at some moment of time after the offer is made) and offers to provide money for goods (*i.e.*, offers to deliver money at some point of time after the offer is made). If money was simply a neoclassical numeraire, then goods could buy goods without the intermediation of money.

> The numeraire is not money; it is not even a partial money; it is not even assumed that it is used by the traders themselves as a unit of account. It is no more than a unit of account which the observing economist is using for his own purpose of explaining to himself what the traders are doing [8, p. 3].

It is the synchronous existence of money as a unit of account and the presence of " offer contracts " and " debt contracts " which are denominated in money units which forms the core of a modern monetary production economy. Money is and must be the thing which is ubiquitously involved on one side or the other of all contracts if these contracts are to be enforceable in a viable monetary system. Money is that thing that by delivery discharges contractual obligations. Money can function as the medium of exchange only because it is a general tenet of the community that acceptance of the monetary intermediary as a temporary abode of general purchasing power involves no risks (only uncertainties), since the State will enforce enactment of all future offer contracts which may be entered into, in terms of the unit of account.

In a world of uncertainty where production takes time, the existence of money contracts permits the sharing of the burdens of uncertainties between the contracting parties whenever resources are to be committed to produce a flow of goods for a delivery date in the future. Such contractual commitment (*e.g.*, hire contracts and forward contracts) are, by definition, tied to the flow-supply price. Ultimately, underlying the flow-supply price is the relationship between the money-wage rate and productivity phenomena. If individuals are to utilise money as a temporary abode either because they expect to accept delivery of reproducible goods in the very near future, or because they desire a vehicle for transferring immediate command of resources to the more remote and indefinite future, then these economic units must have *confidence* that no matter how far the current spot price for any producible good may be momentarily displaced by spot market conditions, the market price for the good will not be above some expected level at a future date.

As long as the flow-supply prices are expected to be sticky,[1] coherent and continuous, each individual " knows " he can, at any time, accept a contract offering future producible goods at a delivered money price which does not differ significantly from today's flow-supply price. Moreover, in an economy where production is going on, sticky flow-supply prices imply relatively stable forward prices of producible goods since the latter will never exceed (and will normally equal) the flow-supply prices associated with the same delivery dates.[2] Since these forward prices reflect the best current expectations of the spot prices at the future delivery dates [20, pp. 446–7], they are the best estimates of the *future* costs of buying such goods either by currently accepting a contract for forward delivery or by waiting until the future date to buy them spot. Hence, the current set of forward prices (and therefore flow-supply prices) are the best measures of the purchasing power of money at any future date; they are the prices individuals will use in calculating the *real* balances they wish to hold. Ultimately, then, in a viable monetary-production-specialisation economy, expectation of sticky money wages combined with the public's belief in the sanctity of contracts for future performance encourages the public to accept, as a temporary abode of purchasing power, either the thing the State terms as money, or any private debt contract for which there is a clearing mechanism and for which there is public confidence in the ability of any individual to convert it immediately into legal money without costs.[3]

Any economy which uses such a medium of exchange has a tremendous advantage over a similarly endowed hypothetical economy which permitted only barter transactions—for the cost of anticipating the needs of trading partners and then searching out such partners greatly exceeds the resources used in bringing buyers and sellers together in a money economy. It is only the presumed existence of the costless Walrasian auctioneer which permits general equilibrium models to reach a Walrasian equilibrium solution [8, pp. 6–7]. The assumption of zero transactions costs, Hicks reminds us,

[1] Sticky flow-supply prices means that the annual rate of change in the money-wage rate relative to the rate of change in productivity is expected to be comparatively small.

[2] By definition the price that buyers are offering to pay for forward delivery can never exceed the flow-supply price since the latter is the money-price required to call forth the exertion necessary to produce any given amount of the commodity for any given delivery date [cf. 9, pp. 34–35]. If for example, the public suddenly changes its views about the rate of inflation in future flow-supply prices and if people act on the basis of such anticipations, they would immediately bid up the current spot price of all durables *and* they would place additional orders for forward delivery (of producible goods) at the current flow-supply price associated with the greater production flow. In other words, changes in the expected rate of inflation of producible goods will affect the current spot prices of all assets and the marginal efficiency of capital goods [cf. 11, pp. 142–3, 231], while the resulting forward price of output will *not* exceed the current flow-supply price associated with the induced greater effective demand.

[3] " In other words, expectation of a relative stickiness of wages in terms of money is a corollary of the excess of liquidity-premium over carrying-costs being greater for money than for any other asset " [11, p. 238].

> is hopelessly misleading when our subject is money. Even the simplest exchanges are in fact attended by some costs. The reason why a well-organized market is more efficient than a badly organized market . . . is that in the well-organized market the cost of making transactions is lower [1] [8, p. 6].

The desire on the part of rational economic men to minimise all costs—including transaction costs—leads to the discovery that while the introduction of a medium of exchange reduces transaction costs over a barter system, the process of clearing titles to money rather than taking delivery of the intermediary commodity itself can lower transaction costs even further.

Bank money is, of course, simply evidence of a private debt contract, but the discovery of the efficiency of "clearing," that is the realisation that some forms of private debt can be used in settlement of the overlapping myriad of private contracts, immensely increased the efficiency of the monetary system. Three conditions are necessary in order for such a private debt to operate as a medium of exchange:

> (1) the private debt must be denominated in terms of the monetary unit;
>
> (2) a clearing institution for these private debts must be developed; and
>
> (3) assurance that uncleared debts are convertible at a known parity into the legally enforceable medium of exchange.

The development of an institution to clear specific types of private debts and an institution to prevent the misuse of these private debt facilities not only permits but assures—because of the lower costs of transactions—that these private debts will replace state enforced legal money as the main medium of exchange in most transactions. Thus any form of private debt can become a medium of exchange if institutions are created which permit increases in clearings while preventing misapplication of these private debt facilities. What prevents other kinds of private debt (*e.g.*, trade credit, commercial paper) from becoming part of the medium of exchange is either the absence of a specific clearing institution that deals in the specific type of debt under consideration, or if such an institution exists its facilities are not available for most of the transactors in the community.[2] Thus, for example, the ability of businessmen to enlarge their demand for the hire

[1] What Hicks fails to realise is that, in an uncertain world, there will only be an accidental matching of buyers and sellers in any spot market at any point of time—no matter how well-organised. Thus, unless there is a residual buyer or seller who is willing to step in and make a market whenever one side or the other of market temporarily falls away, the spot price can fluctuate violently. Such fluctuations are incompatible with individuals' desires to hold such items as a store of value.

[2] Of course, some forms of private debt may discharge commitments for small closed subsets of transactors within the community *via* a clearing mechanism, if there is a large number of continuous offsetting flows of goods and debts traded restricted to this subsector, *e.g.*, stock market clearings. Nevertheless this private debt is not generally acceptable and therefore is not money.

purchase of capital goods by arranging for increased clearings of debts outside the banking system is, in the short run, extremely limited, and hence financial constraints on investment demand may restrict investment purchases even when the present value of additional capital goods greatly exceeds the flow-supply price of these goods. Thus the lack of a sufficient quantity of the medium of exchange can restrain the economy even when there are owners of idle resources who would be willing to enter into offer contracts at the going money wage rate.

What permits money to possess purchasing power is, ultimately, its intimate relationship to " offer contracts " in general and contracts involving labour offers specifically. Thus it is the money-wage rate, that is the number of units of the money-of-account which labour is willing to buy for a given unit of effort, which is the anchor upon which the price level of all producible goods is fastened. It is the fact that changes in the quantity of money are inevitably tied to changes in the stock of existing contracts, and that the offer price for a contractual commitment for the forward delivery of all reproducible goods is, *when money buys goods*, constrained by money flow-supply prices whose principal component is ultimately the money wage rate, that causes changes in the quantity of money, changes in the level of employment of resources, changes in the money-wage rate and changes in the price level to be inevitably interrelated.

It is only in the Walrasian general equilibrium world where the quantity of money is (*a*) conceived to be independent of the level of contracts [1] and (*b*) provided to the community like manna from heaven, that the general equilibrium theorist finds no secure anchor for the level of absolute prices which are indeterminate in his system. Having cut the connections between money, labour offer contracts and flow-supply prices, these modern Walrasians conclude that the level of prices is whatever it is expected to be, for if it were not, money holders would, with the co-operation of the ubiquitous Walrasian auctioneer, simply bid up or down the price level until the purchasing power of money was at the level they wanted it to be, while resource utilisation (full employment) would be unaffected [2] [cf. 13, pp. 44–5; 8, pp. 9–10; 16, p. 105].

In the real world, money is among the most ancient of man's institutions. Barter economies are more likely to be the figments of economists' minds, than the handmaiden of human transactors. A description of activity in a barter system may be useful as a benchmark for observing the effects of money on the system, but the results of such comparative anatomy should never be taken seriously as indicative of real world alternatives. The barter transactions implicit in the Walrasian approach can only be meaningful as an analysis of the immediate exchange of pre-existing goods. The majority

[1] Since recontracting is not only permitted but is required for Walrasian equilibrium to occur.

[2] Thus many modern neoclassicists are in essence providing a bootstrap theory of the price level of goods in place of a bootstrap theory of the price level of bonds.

of important transactions in a modern mass production economy, however, involve the contractual commitment of resources for the production of goods and services to be delivered at a future date. Modern neoclassical monetarists, finding that the real world does not possess perfect certainty, or a fixed quantity of labour hirings, or flexible wages and prices, or the ability to recontract of their theoretical framework, " resemble Euclidean geometers in a non-Euclidean world who, discovering that in experience straight lines apparently parallel often meet, rebuke the lines for not keeping straight—as the only remedy for the unfortunate collisions which are occurring " [11, p. 16].

Money, Financial Institutions, And Economic Growth—An Overview

In the absence of a money with the requisite zero elasticities, each income receiving unit would have to plough its savings into commodities, for without such a money the decision of what reproducible thing to buy with the thing being sold cannot be postponed. In such a mythical neoclassical economy, income-receiving units must store value in those physical goods which they believe are most " productive." Even if decision-making units are ignorant about the future they must " override and ignore this ignorance " [19, p. 290]. Say's Law prevails, and the allocation of resources between consumption and capital goods will depend entirely on the savings propensities of the income-receiving units.

With the existence of a non-reproducible money and appropriate financial institutions for clearing, a mechanism is provided which permits (but does not require) the efficient transfer of current command over resources (as long as resource offer contracts are denominated in terms of money) from economic units that wish to spend less than their income to those units that wish to spend more. Moreover, the existence of a clearing system which permits private debt to discharge contracts makes it possible for those who want to spend more than their income to obtain immediate claims on resources, while those who wish to spend less do not have to surrender their immediate claims. Such a system, however, does not guarantee that the abstaining economic units will be able to obtain command, in the future, over as much of the services of resources as they have decided not to use at the present time. Nor does it require that those who abstain gain title to the increment of real wealth which such abstinence permits.

If abstinence exceeds the desire of other units to spend in excess of their income, and if savings can be stored in a form which does not require resource utilisation, *i.e.*, the item which is utilised as a store of value has a zero elasticity of productivity, then the potential services of some real resources will be wasted as their offer contracts are not accepted. If, on the other hand, the aggregate desire to spend exceeds abstinence when resources are already fully employed, then the creation of additional units of the

medium of exchange by financial institutions can permit some decision-makers to outbid others in accepting resource offer contracts; as a consequence, some income recipients may be forced to relinquish command over real resources involuntarily. These questions of voluntary and forced abstinence, the ownership of titles to real wealth, and the ability to make economic provision for the future are fundamental aspects of the problem of economic growth.

Since the creation of private debt by financial institutions does not by itself require the use of resources, jobs are not created merely by the process of increasing certain forms of private debt such as bank money. Job creation will depend on what the increment in bank money is used for. The immediate (first round) purpose will, of course, depend on why individuals were willing to go into debt. If individuals desired more money either to hold as a store of value or to demand other things that have a zero elasticity of productivity (*e.g.*, titles or other non-monetary forms of private debt), then this increment of money is immediately enmeshed in the " financial circulation " [1] and though it may change hands from time to time it will not create jobs unless it moves (in a subsequent round) into the " industrial circulation " where it will be used to accept offer contracts for new production.[2]

If, on the other hand, the initial user of the increment of bank money desired it to *increase* his acceptances of offer contracts for new goods and services—the finance motive for demanding money—then new jobs will be created on the first round and on subsequent rounds as portions of the increment of money remain in the " industrial circulation " as the income generating multiplier process works its way through the economy. The increment of money that remains in the industrial circulation is often referred to as " active balances " to distinguish it from the money in the financial circulation which is somewhat misleadingly labelled as " idle balances " since the latter nomenclature suggests a zero velocity. Financial balances may still change hands while remaining in the financial circulation if individuals alter their bear position, while the community maintains its position.

In a monetary economy, many financial non-bank intermediaries evolve which provide links between the financial and industrial circulation. These non-bank financial intermediaries can affect the level of aggregate demand

[1] Since organised security exchanges develop institutions which permit the " clearing " of securities for securities among a close set of transactors, the stock of money involved in circulating financial balances is kept to a minimum and the volume of such " active " balances will be relatively independent of the activity involved in the churning of the security portion of individual portfolios. Nevertheless, since certain financial institutions maintain money balances in order to " make a market " in securities, it is possible that the quantity of money needed to maintain such markets may rise slightly with expansion of the securities market (especially with geographical distance between transactors).

[2] It may move into the industrial circulation by improving financial conditions and/or reducing interest rates and thereby inducing entrepreneurs to increase their demand for fixed capital, or by increasing the demand for delivery of working capital goods thereby calling for additional supplies.

either by removing the medium of exchange from the bear hoards of abstaining households or by borrowing newly created money from commercial banks, and then making these funds available to economic units who want to accept offer contracts for new goods and services in excess of their current incomes.

These non-financial intermediaries are able to extract the medium of exchange either from bear hoards, and/or directly from commercial banks by providing a store of value in the form of a debt contract which promises

(1) a greater yield than money;

(2) greater confidence in the reliability of the intermediary to meet its obligation when it comes due than the confidence that would be generated by the debt contract of the economic unit which wishes to spend in excess of its income;

(3) greater confidence in the future parity between the intermediary's debt and the medium of exchange (if conversion is required before the maturity date of the debt contract) than is expected from other securities and

(4) very low transactions costs in converting the non-bank intermediary debt into the medium of exchange at any date in the future.

The difference between the liabilities of non-bank financial intermediaries and commercial bank liabilities is that clearing institutions exist for the latter which permit them to be a perfect substitute for legal money both as a medium of exchange and as a store of value, while no such similarly accessible clearing institution exists for the former. Hence liabilities of non-bank financial intermediaries, while being a good substitute for money as a store of value, cannot be used in settlement of an obligation. As a consequence there will always be some transaction costs involved in converting non-bank financial intermediary liabilities which are used as a store of value into the medium of exchange—a cost which does not exist for legal money or bank money.

In sum then, therefore, the difference between non-bank financial intermediary liabilities and commercial bank liabilities is that although both are evidence of private debt, only the latter can be generally used to discharge a contract. Accordingly, given the stock of money, increases in non-bank financial intermediaries' liabilities can raise aggregate demand for new goods and services only to the extent that (*a*) they replace existing legal money or commercial bank liabilities in the bear hoards of economic units and (*b*) these balances which are released from bear hoards are channelled to potential buyers who have the want, but without these channels of finance would not have the ability, to accept the offer contracts that are available in the market place.

Any increase in commercial bank liabilities, on the other hand, because of the existence of clearing institutions, provides either an additional store

of value or an additional medium to settle debts and contracts—a costless option for the holder. To the extent that these bank debts are made to potential buyers of additional goods and services, aggregate demand is, of course, expanded.

As long as full employment is a social objective, and as long as a " work requirement " is a condition for earning income for propertyless households so that full employment becomes a humanitarian as well as an economic objective, then monetary policy should always be geared to increasing the supply of money available to all potential buyers of producible goods who are willing to spend in excess of their income, as long as the point of effective demand is less than full employment. If, and only if, effective demand exceeds full employment volume, then monetary policy should, as a matter of fairness, become restrictive in order to thwart potential buyers who have preferential access to bank facilities from forcing abstinence on other income recipients, whose monetary income is relatively fixed and who do not have similar ease of access to bank credit.

A simple rule for expanding the money supply will not permit the efficient operation of such a monetary policy because exogenous changes in the desired portfolio composition between money and other financial assets will alter the quantity of money available to the industrial circulation; and, in a monetary economy, only money can buy goods, and goods can buy money. Any " shortage " of money from the industrial circulation can be viewed as either frustrating potential buyers from obtaining goods, or preventing sellers from finding takers for their offer contracts.

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