Money in Economic Activity

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Money is a social relation. Like the meaning of a word, or the proper form of a ritual, it exists as part of a system of behaviour shared by a group of people. Though it is the joint creation of a whole society, money is external to any particular individual, a reality as unyielding to an individual’s will as any natural phenomenon.

To understand the system of social relations of which money is a part, it is necessary to adopt a comparative and historical perspective. Only by seeing the phenomenon of money in contrast with systems of social relations that do not involve money can we get a sense of the characteristic peculiarities of money. Marx’s (1867) analysis of commodity production provides such a perspective.

People in every society must produce in order to survive and develop, but their production can be organized through different systems of social relations. An important dimension of these social relations is the degree to which the products are controlled by individual owners acting in their own interests. In a system of commodity production, a product at its creation is the property of one owner, who can exchange it for the products owned by others.

Money appears in systems of commodity production. Because any commodity can be transformed into any other through exchange, commodities appear to be equivalents. It is possible to evaluate any collection of disparate commodities by multiplying the quantity of each one by a price, where the ratio of the prices of any two commodities expresses the ratio in which they exchange, and adding up. Because exchange determines only the ratio of the prices, the units in which value is measured are arbitrary. A similar situation exists in measuring the mass of physical objects. By weighing one mass against another one can establish the proportion of one to another, but to express weight in absolute terms it is necessary to establish a conventional standard (like the kilogram or pound). In a commodity-producing society some system evolves for measuring and transferring value separated from particular commodities, the money form of value. Monetary units such as the dollar, franc, pound, mark, or yen, measure value separated from particular commodities.

Although the money form of value is a universal characteristic of commodity systems of production, different specific forms of money have evolved in different times and places. The earliest form of money is commodity money. One particular product, often a precious metal such as gold, takes on the role of measuring the value of all other commodities. In a commodity-money system the monetary unit, for example the dollar, is defined legally as a certain amount of gold. Since gold exchanges at a particular ratio with every other commodity, this definition establishes a dollar price for every commodity as well.

It is also possible for commodity systems to operate with an abstract unit of value, a monetary unit implicitly defined by prices negotiated by buyers and sellers of commodities. In this situation, the dollar is not defined as a particular quantity of some commodity, but commodity producers, knowing at any moment how much value the dollar represents, continue to establish prices in terms of dollars. Commodity money systems are subject to instability because the exchange ratios of the money commodity against other commodities constantly change. Abstract unit of account systems are subject to instability because the prices producers choose may drift upward or downward over time.

In a commodity money system agents may issue promises to pay a certain amount of money at a particular time in the future, or on demand. These promises to pay, liabilities for the issuer and assets for the holder, if they are credible, can take the place of the money commodity in many situations. For example, if a producer agrees to sell his product for a certain money price, he may accept a credible promise to pay gold instead of gold itself. Likewise, if an individual needs to hold a stock of money to provide for contingencies, she may decide to hold widely acceptable promises to pay rather than gold itself, if that is more convenient. The same thing can happen in an abstract unit of account system. Promises to pay pure value may be acceptable in transactions, and used as stores of value.

In systems where credit is highly developed, what does it mean for one agent to promise to pay money? How can this promise be fulfilled? In a commodity money system, payment ultimately means delivery of a certain quantity of the money commodity. In an abstract unit of account system, payment normally means delivering a third party’s promise to pay, where the third party’s liability is more acceptable than the debtor’s. For example, private producers may pay each other by transferring the liabilities of banks, deposits. Banks in turn may pay each other by transferring the liabilities of the State, bank reserves or currency. In a commodity money system every agent faces an ultimate requirement to pay in the money commodity. In an abstract unit of account system, however, the State does not have to pay its liabilities by transferring something else.

It is surprising how little difference there is in the day-to-day practice of systems with and without a money commodity. For most individual agents there is one type of highly acceptable liability (bank deposits, for instance) in which the agent must settle its accounts. The same thing is true in a money commodity system. The fact that at the top of the pyramid of agents whose liabilities are more and
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more socially acceptable the State has to pay in gold in a commodity money system, and does not have to pay any particular thing in an abstract unit of account system makes no difference to the individual agents. Even in a commodity money system, the development of a pyramid of agents whose liabilities have different degrees of acceptability insulates most of the agents in the system from the money commodity itself. Only in periods of crisis, when the State faces severe difficulties in maintaining the convertibility of its liabilities into the money commodity, will the money commodity influence the financial decisions of individual agents.

Liabilities of high social acceptability, like currency issued by the State, or bank deposits, may come to be preferred as the means of payment for individual transactions, though in almost all commodity producing societies other liabilities also perform important payment functions. For example, endorsed bills of exchange of private traders have often circulated as widely accepted means of payment among firms in capitalist societies. Furthermore, the issuers of liabilities of high acceptability find that agents are willing to hold them even when they pay a lower rate of return than other assets. If the issuers of these liabilities can exercise some monopoly power, as banks organized under the leadership of a State-sponsored central bank can, they will restrict the interest paid on their liabilities to a minimum. This minimum may in some cases reach zero, so that the most socially accepted liabilities pay a zero interest rate. Agents continue to hold these liabilities as their assets because of their wide acceptability as payment, and because they serve very well as a reserve against the contingency that the agent will not be able to borrow.

From this examination of the nature of money as a social relation, we can draw several important conclusions on which to base a discussion of money and economic activity. First, the money form of value, value separated from a particular commodity, is inherent in the organization of production through exchange. Second, the emergence of money takes place simultaneously with the growth of exchange itself. Third, while the money form of value is a universal characteristic of commodity production, the forms of money are diverse and changing. In particular, the liabilities, or promises to pay, of economic agents can serve in place of a money commodity, and can take the place of the money commodity altogether. Fourth, whether there is or is not a money commodity, there tends to develop a hierarchy of liabilities of different degrees of acceptability. Payment for agents at one level of this pyramid requires their delivery of liabilities of agents at the next level up. The existence of this pyramid creates considerable flexibility in the financing of economic activity.

The relation between money and economic activity is two-sided. Money forms of value are a reflection of the particular organization of economic activity through commodity production. The liabilities that serve to finance economic activity are created in the course of financing economic activity itself. From this perspective it is tempting to argue that money is a reflector of economic activity, and that monetary phenomena are determined by the independent development of economic activity. As we shall see, this is an important theme in the development of monetary theory.

But money also serves as a regulator of economic activity, because it is the link between the individual producer and the social character of production. In order to undertake production, an agent must finance it by getting control of an acceptable monetary asset. If an agent does not already own a sufficient quantity of these assets, it must convert its own liability into a liability of higher acceptability by borrowing. The terms on which agents can make this transformation regulate their initiation of production in two senses. First, financing determines which agents will be able to carry out their plans. Second, financing determines the total volume of economic activity that can be initiated. In its role as regulator of economic activity, money appears, especially from the perspective of the individual economic agent, to be the independent factor to which economic activity has to adapt itself.

Theories of money can be seen first in terms of which of these aspects of the relation between money and economic activity they emphasize as their starting point, and second in terms of the way they account for the final synthesis of the two points of view. Those theories that posit an independent role for money in determining economic activity have some level at which money is itself determined by economic activity, and those theories that emphasize money as a reflector of economic activity also envision circumstances where money regulates and influences the scale of economic activity.

In the 18th and early 19th centuries, the writers who had the most influence on the later development of monetary theory, Hume, Smith, Ricardo, and Marx, all place the main emphasis on money as a reflector of levels of economic activity determined by non-monetary factors.

David Hume (1752) makes two, somewhat contradictory, arguments concerning the reasons why the quantity of money has no lasting effect on the levels of economic activity. The first is that the money prices of commodities are proportional to the quantity of money in a country. As a result, the real quantity of money, correcting the quantity of money for the level of money prices, is endogenous. Since the real quantity of money is relevant for economic decision making, and particularly for decisions regarding the initiation of economic activity, once prices have adjusted, the physical quantity of money commodity in the country makes no difference. But in a second essay Hume argues that in fact the physical quantity of money in a country is also endogenous, here implicitly assuming that the gold prices of commodities are determined by non-monetary factors, essentially by world prices. Here his argument is that a country with a relatively small quantity of money commodity will have low prices relative to the rest of the world, which will create a balance of trade surplus and attract the money commodity to that country. This process will continue until the price level in the country has risen to the level of world gold prices. There are two processes of adjustment in Hume's argument, a middle run in which money prices of commodities are proportioned to the quantity of the money commodity,
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of the problem of the price of gold bullion in terms of pounds during the Napoleonic Wars, when the Bank of England suspended the convertibility of its banknotes into gold. During this period the market price of gold bullion rose to a substantial premium over the official, mint price of gold. This prompted a debate over the reasons for the premium and the appropriate policy to deal with it. A number of people argued that the premium reflected real factors, such as poor harvests, that had created a balance of trade deficit for England, and had driven the pound to a discount against foreign currencies defined in terms of gold. Ricardo insisted, instead, that the premium reflected an overissue of banknotes by the Bank of England. He claimed that this overissue put more notes in the hands of the public than it wanted to hold, and that in attempting to get rid of the excess, the public tried to buy gold bullion and drove up its price. For Ricardo, the policy appropriate to the situation was one of restricting the issue of banknotes as a prelude to resuming conversion of notes into gold. He further argued that any impact of real factors, like bad harvests, on the price of gold bullion must take place by way of monetary changes. In other words, in the absence of an overissue of paper currency, and a consequent rise in the price of bullion, a bad harvest would lead to a rise in other commodity exports to pay for the import of grain, not to a depreciation of the pound in terms of gold.

Ricardo’s discussion raises a new question, which has great importance for the later development of monetary systems. This is the question of the effect of the issue of banknotes that, unlike Smith’s convertible notes, are not convertible into the money commodity at a guaranteed rate of exchange. The broad thrust of Ricardo’s argument is that the issue of such notes has no effects on the economy, because overissue simply leads to a discount of the notes against the money commodity. Once again, the quantity of real money has become endogenous, now not through changes in the prices of commodities in terms of the money commodity, but through changes in the discount of paper banknotes against the money commodity.

Ricardo later goes considerably further than this analysis and explicitly argues for the independence of levels and directions of economic activity from monetary factors. Because he believed that the only rational end of economic activity was consumption, Ricardo argued, following Say, that every commodity offered for sale represented a demand for some other commodity, and thus, that in the aggregate the value of commodities offered on the market equalled the demand. Thus money is purely a medium for the exchange of commodities against each other, and has no independent role in determining economic activity; money is a veil.

Karl Marx (1867) develops his theory of money as a critique and correction of the ideas of these earlier writers. He has three important themes of correction in his approach to money. First, he argues that the prices of commodities in a commodity money system are prior to the quantity of money, so that the quantity of money theory of the price level is mistaken. Second, he rejects Ricardo’s espousal of Say’s Law on the ground that the movement of money into and out of hoards may create a discrepancy between the aggregate supply of commodities

and a long run in which, because prices of commodities are determined by world prices, the quantity of the money commodity in the country adjusts.

But Hume makes yet a third remark about the relation of money to economic activity, which raises an important theme for later writers. He argues that there is a short run in which increases in the quantity of money in a country do directly increase the level of economic activity because commodity prices have not fully adjusted to the quantity of the money commodity. Later writers attempt to flush out this argument by specifying the exact mechanism through which changes in the nominal quantity of money can affect the level of economic activity.

Adam Smith (1776) emphasizes quite a different aspect of the relations of money to economic activity. Smith’s discussion of credit and banking centres on the idea that the substitution of credit, particularly banknotes, for precious metals as a medium of circulation can free social capital tied up in stocks of the money commodity to set production in motion. In this perspective credit has a significant effect on the level of economic activity. Smith is concerned to enunciate rules of banking that will prevent an overissue of banknotes and maintain convertibility of banknotes into the money commodity, rules which are the origin of the real bills doctrine. Smith recommends that banks lend only to real creditors who are already owed money by real debtors as the result of bona fide commodity transactions. Such loans will be automatically liquidated when the real debtor pays real money (that is, the money commodity) to the creditor and the creditor in turn pays the money into the bank. Essentially Smith argues for a system in which borrowers are forced at frequent, periodic intervals to clear their positions and demonstrate their continued solvency. He claims that a banking system that follows these rules will have no difficulty in maintaining convertibility, so that its banknotes will circulate at par against the money commodity, and can replace a certain proportion of the money commodity as a medium of circulation.

Smith views a properly regulated banking system as providing the appropriate amount of money endogenously through the expansion and contraction of credit. There are two levels to Smith’s argument. At the first level, the introduction of banks and credit money have a once and for all effect on economic activity by releasing social capital previously tied up in stocks of the money commodity for production. Once the banking system is in place and functioning to its maximal feasible extent according to the rules of the real bills doctrine, however, the quantity of money and credit, now endogenous to the system, has no independent effect on the level of economic activity (nor, apparently, on prices, which Smith sees as being regulated rapidly by world prices).

Both Smith and Hume are at pains to establish that the quantity of money does not influence the level of interest rates, which they view as being determined by the level of profit rates in a country. In their view there is a conventional relation between the level of profit rates and interest rates. A low interest rate reflects a low profit rate as a result of the healthy development of commodity production in a country and the exploitation of profit opportunities, not an abundance of the money commodity.

David Ricardo’s (1811) thinking on monetary matters arose from his study
and the aggregate demand. Third, Marx argues for viewing the quantity of money commodity as endogenous to the economic system, and insists that a sharp distinction be made between the effects of exogenous issues of nonconvertible paper money, and the endogenous movements of the money commodity. Still, Marx’s overall view emphasizes the primacy of production decisions limited by the accumulation of capital in regulating the level of economic activity, and portrays monetary events as primarily reflecting or communicating forces set in motion at the level of production.

In Marx’s theory the money price of a commodity reflects the relation between the cost of production of the commodity and the cost of production of the money commodity. In the simplest case in which costs of production are proportional to labour times expended, this implies that the money price of a commodity is just the ratio of the labour time expended in producing it to the labour time expended in producing a unit of the money commodity. If, for example, it takes one hour of labour time to produce a bushel of wheat, and two hours to produce an ounce of gold, the gold price of a bushel of wheat will be \( \frac{1}{2} \) ounce of gold. In Marx’s analysis monetary units, like the dollar or pound or franc, are simply conventional names for specific quantities of gold. If an ounce of gold is defined to be equal to 20 dollars, for instance, then the price of a bushel of wheat will be 10 dollars in the example above. In this way, the money commodity takes on the special role of expressing the abstract labour contained in other commodities. But this role depends on the cost of production of the money commodity, not on the quantity of it that happens to be in a certain country at a certain time.

How, then, does the quantity of money adjust to changes in the scale of economic activity? Marx introduces the idea that agents hoard money, so that there are reserves of the money commodity available to be brought into circulation in response to increases in economic activity, and ready to absorb excess quantities of the money commodity if economic activity slackens. Marx’s recognition of hoards is a key distinction between his vision of monetary theory and that of Hume and Ricardo. It leads logically to another important difference in Marx’s treatment of Say’s Law. Because Marx included the possibility of hoarding in his theory, he saw the possibility that the proceeds from sales of commodities might be hoarded rather than spent, thus breaking the close connection between the aggregate supply of commodities and aggregate money demand asserted by Ricardo and Say.

In his discussion of convertible paper money issued by the State in a system based on a commodity money, Marx returns to a position similar to Ricardo’s early analysis of the price of gold bullion. Following Smith, Marx argues that the issue of paper can displace gold without a depreciation of the paper, as long as the quantity of paper issued is smaller than the requirements of circulation. Under these circumstances all the paper will be absorbed by circulation, displacing an equal value of gold, and will circulate at par against gold. If, however, the State issues more paper than this, agents trying to dispose of the excess will bid the paper to a discount against gold. The quantity of money theory of prices holds for convertible paper money in Marx’s view, but only through the mechanism of the premium for gold against the paper money. The quantity of gold itself has no impact on gold prices, because these are determined by costs of production.

In Marx’s view the level of economic activity is regulated primarily by the historical accumulation of value as capital. At any moment the technology in use establishes capital requirements for the production of various commodities. The amount of capital value available from past accumulation sets a limit to the scale of economic activity. Money in normal circumstances adapts passively to this level, either through the adjustment of hoards, or through the expansion and contraction of credit. In periods of crisis, however, the stagnation of money in reserve hoards is for Marx, the mechanism by which aggregate demand is reduced. Marx’s account of the exact relation of economic activity to money in periods of crisis is incomplete. It is clear that he viewed the existence of money, and the possibility of hoarding as preconditions for crisis, and as important channels in the development of crises. He also strongly suggests that the underlying causes of crises lie in the evolution of production itself, for example, in the tendency of rate of profit to fall with capital accumulation and capitalist development of production.

The classical economists and Marx left a well-developed account of the relation of money to economic activity, an account which shaped later thinking in decisive ways. These theorists assumed unquestioningly that they were dealing with a commodity money system. The only exception to this rule is the analysis of convertible paper money issued by the State, and coexisting with a commodity money system. The characteristic theme of classical analysis was the subsidiary importance of money in relation to production. Money was seen as adapting to economic activity, either by automatic adjustments in the quantity of money, or in real quantities of money through changes in the prices of commodities.

The century after 1875 was a period of rapid and thoroughgoing transformation of monetary systems and financial institutions in the industrialized capitalist countries. With the growth of national markets and firms operating on a national and, increasingly, international scale, national markets for credit also developed. Large banks began to play a central role in the mobilization and channelling of national capital funds. Periodic monetary panics, involving external or internal drains of gold from the reserves of banks, began to occur. National banking systems became oligopolized and regulated. Thus the monetary phenomena that Smith, for example, analysed in the context of a largely agrarian and commercial capitalist society came to play a decisive role in the financing and construction of large-scale industrial development.

The important capitalist nations during this period extended their influence over the whole rest of the world in the first wave of capitalist imperialism. The world monetary system came to play a more and more important part in regulating economic activity on a world scale. The rivalries intensified by imperial competition between European powers set off a chain of disastrous social and military crises, beginning with World War I. The world monetary system was fundamentally and irreversibly transformed by these crises. During the war, all...
the participant nations suspended convertibility of their currencies into gold, and erected elaborate systems of control over movements of capital. As a result the link between gold and national currencies became much weaker. The governments of the European powers discovered that their domestic monetary and credit mechanisms depended very little on convertibility for their day to day functioning. They also discovered the enormous latitude for State policies opened up by their abandonment of the promise to convert currency into gold. Although most political leaders expected the gold standard to return after the war, commitments to convertibility turned out to be fragile and temporary. Since 1914, convertibility of national currencies into a commodity money has been the exception rather than the rule, attainable only for short periods as the result of intensive diplomatic compromise.

The earlier monetary theory we have discussed might lead one to predict that under these circumstances national currencies would gradually lose their monetary role in competition with a spontaneously maintained world commodity money standard, so that all the national currencies would find their own discount or premium against gold, which would still function as a commodity money. While something like this did occur between the First and Second World Wars, after World War II a surprising evolutionary development occurred, in which one national currency, the dollar, despite its tenuous and tentative convertibility into gold, emerged as a world monetary standard. When the United States finally abandoned convertibility of the dollar into gold in 1971, it became clear that gold had lost its central position in the world monetary system. The industrialized world functioned with the dollar, an abstract unit of account, whose value in terms of commodities is determined by the pricing decisions of commodity buyers and sellers, as the standard of value.

These historical and institutional developments called into question much of classical monetary theory, which was based on the assumption of a commodity money system. In particular, those theories that argued that the value of the monetary standard was determined by the cost of production of the money commodity were left with the need to propose an alternative mechanism for determining the value of the monetary unit. The development of monetary theory in this period reflects the attempts of economists to grapple with this fundamental problem.

Irving Fisher (1911), writing in the heyday of US trustification about the turn of the 20th century, returned to the simplest formulation of the quantity of money theory of prices put forward by Hume as the starting point for his account of the relation between money and economic activity. Fisher posits the existence of a given amount of money, exogenously determined in the system. Because he assumes that this total quantity of money must circulate (thereby abstracting from the possibility of hoards) at a single exogenously given rate (the velocity of money), Fisher argues that the total monetary value of the transactions in an economy is determined independently of the level of economic activity. If, for example, there exist $100 billion dollars, exogenously supplied, and the velocity of money is five transactions per year on average, then the total transactions of the economy must total $500 billion per year. How can this be reconciled with the actual level of economic activity? Either the volume of transactions at given prices must change so that the total equals $500 billion, or the prices at which transactions occur must change to achieve the same result. Fisher followed Hume in arguing that, while in the short run a change in the quantity of money or velocity might have some impact on the level of economic activity in the society, in the long run the whole adjustment would be made in the prices of commodities. Fisher believed that the market system would lead to a given level of production of commodities determined by available resources and technological possibilities independently from monetary factors. Thus the only remaining variable free to adjust is the level of commodity prices. Fisher resurrects the classical presupposition that monetary factors do not influence economic activity, at least in the long run, on the basis of this analysis.

The monetary theory of John Maynard Keynes (1936) responds to the drastic changes in monetary systems engendered by World War I and the Great Depression. Keynes envisions a monetary system with a central bank at its centre. The liabilities of this bank may or may not be convertible into a money commodity. The liabilities of the central bank serve as the reserves of a commercial banking system which issues deposits. Keynes explicitly allows for the existence of other competing monetary assets, bonds and equities, in this system. Keynes poses the question of how the financial system absorbs the reserves and deposits created by the banking system. He argues that rates of return on bonds and equities must adjust until wealth holders are content to hold these assets and deposits in the proportions in which they are being supplied to the public. Thus a change in the reserve policy of the central bank forces a change in the rates of return to bonds and equities.

Since the rates of return on bonds and equity establish the cost of capital funds to firms, changes in these rates of return alter the incentives for firms to make long term investments. A fall in the interest rate engendered by an expansion of bank reserves encourages fixed investment, and this increase in spending by firms raises the level of aggregate demand in the whole economy, normally by a multiple of the initial increase, because households tend to spend part of their additional income as demand expands. In this view there is a close relation between the reserve creation of the central bank and the level of economic activity, mediated by the interest rate on bonds, the price of equities, and the fixed investment policies of firms.

Keynes presents this theory analytically as a correction of Fisher’s arguments. First, Keynes insists that the velocity of money, the ratio of desired holdings of money to the value of transactions, responds systematically to the level of interest rates. Second, Keynes argues that prices are not the only variable available to adjust the value of transactions, given the quantity of money and the velocity of money. The other variable is the volume of transactions itself, which changes with the level of economic activity called forth by aggregate demand. While Keynes does not rule out the possibility that price adjustments may, under certain circumstances, be involved in reconciling the value of transactions to the quantity...
of money and velocity, he deemphasizes this case in arguing that typically the level of economic activity and hence the volume of transactions adapts. Furthermore, Keynes suggests that the relation between money demand, interest rates, and the level of economic activity (in Fisher’s terms, the velocity of money) is volatile, subject to sharp changes depending on the mood of wealth holders and their expectations and fears about the future.

Keynes couches his theory in quite traditional terms. He shares with Fisher the concept of a demand for money, or velocity, that establishes a relation between the quantity of money the system will absorb and the levels of prices, interest rates, and economic activity. He also shares with Fisher the procedure of eliminating variables one by one as possible equilibrating factors and arguing that the remaining variable must be the one that adapts. Thus his differences with traditional theory turn on which variable he views as predetermined, and on the emphasis Keynes puts on variations in interest rates as mediating the response of the economic system to changes in the quantity of money. Thus Keynes manages to reverse the classical presumptions that money affects prices but cannot alter the level of interest rates or economic activity, without adopting the view that money is largely endogenous to the economic system.

In historical terms Keynes’s theory is a step toward constructing a monetary theory that corresponds to the realities of fully developed industrial capitalism. In his deemphasis of convertibility as a limit on the operations of the central bank Keynes creates a theory that does not depend on the existence of a money commodity. In the place of the traditional emphasis on the money commodity and the relation of domestic money to it, Keynes’s gives the centre of the stage to the problem of the regulation of aggregate demand and investment. Keynes’s vision of the economic system is not that of a self-regulating entity which the economist seeks to understand, but of a complex set of causal linkages that a policymaker seeks to guide.

Keynes’s theory of money establishes the framework within which the most influential post-World War II monetary theorists have worked. The basic elements, a demand for money which is a function of income, wealth, and the rates of return on alternative assets, an exogenously given supply of money, and a connection between money and real activity through changes in the rates of return and prices of nonmonetary financial and real assets, serve as the building blocks for both the new quantity of money theory of prices, and extensions of Keynesian theory. But within this framework, different scholars emphasize one or another element to reach quite different policy conclusions.

In the decade after 1945 Keynesian orthodoxy took the position that ‘money doesn’t matter’, in that spending decisions of consumers and firms were largely independent of asset rates of return, and more responsive to expectation variables. This view was supported by the idea that close substitutes for monetary assets could be produced by banks and other financial actors. Thus any attempt to restrict economic activity by limiting the expansion of bank reserves would be circumvented by the substitution of other liabilities. This extreme nonmonetary interpretation of Keynes fell into disfavour as the advanced capitalist countries in the postwar period began to rely more and more heavily on monetary policy as a tool for regulating aggregate demand and the external value of their currencies.

A strong reaction to this deemphasis of monetary factors in the determination of aggregate demand came in Milton Friedman’s (1956) resurrection of the quantity of money theory of prices within the Keynesian framework. Friedman argued that as a matter of empirical fact the demand for money is a highly stable function of a small number of relevant variables. He accepted Keynes’s idea that the supply of money was exogenously determined by central bank policy, and concluded that changes in the supply of money would have regular and predictable effects on money income and asset rates of return. Friedman also put forward the claim that there are few good substitutes for money (although there has been some uncertainty as to exactly what his theory regards as a monetary asset), so that the demand for money is an inelastic function of the rates of return on competing assets. This implies that changes in the supply of money will be reflected in changes in money income rather than in rates of return. This line of argument leads naturally back to Fisher’s conclusion that the level of real economic activity is determined by real factors independent of money, so that the ultimate effect of changes in the supply of money is entirely absorbed by changes in money prices. This series of empirical hypotheses allows Friedman to restore the claims of Fisher’s quantity of money theory of prices within Keynes’s theoretical framework. Because the new quantity of money theory of prices depends so heavily on empirical claims, it has come under strong questioning as econometricians have attempted to test it with historical data. The demand for money defined in any particular way exhibits more instability than Friedman claimed, and in some definitions a higher elasticity with respect to rates of return on competing assets than is necessary for Friedman’s strong conclusions to hold. While it is possible to redefine the monetary aggregate to improve the statistical evidence for the new quantity of money theory of prices, this path opens up potential criticism of ex post theorizing, that is, choosing the definition of the monetary aggregate to save the theory in its confrontation with evidence.

Another pole of Keynesian interpretation is represented by the work of James Tobin (1982). Tobin also adopts Keynes’s conception of a demand for money, but supplements it with demand functions for all other financial and real assets. In this vision money is one part of a spectrum of financial assets, all of which must find their place in wealth holders’ portfolios through a mutual adjustment of rates of return and assets prices. For Tobin the possible impacts of monetary changes on economic activity are varied and complex, because they depend on the exact response of the whole structure of rates of return on competing assets to the monetary change, and to the possible reactions of these changes in rates of return on decisions to consume and invest. Tobin accepts Friedman’s conclusion that the impact of monetary changes will be absorbed in money prices, but only for a very long run. In the more policy-relevant middle run, there are substantial effects monetary policy can have on the level and direction of economic
activity. An expansive monetary policy, by lowering rates of return on bonds and raising the prices of equities, will encourage investment, thus raising the whole level of economic activity, and shifting the emphasis of production toward investment and growth. A contractionary monetary policy, even if it is offset by expansive fiscal policy, so that the overall level of economic activity remains unchanged, will tend to choke off investment and deter long term growth.

These Keynesian lines of thought have been enriched and somewhat modified by incorporating them into models of open economies, in which trade and capital flows are important, as in the work of Robert Mundell (1971). In an open economy with a convertible currency, the supply of domestic money cannot be exogenous. If the central bank expands the supply of money, it will find the public exchanging domestic monetary claims for international reserve assets to offset the expansion. In this context the main scope for monetary policy is at the international level, in the concerted efforts of all the central banks to expand or contract liquidity. In an open economy with a floating exchange rate, and capital markets open to the world, the rates of return on domestic assets will be pegged to world rates of return. In this situation a change in the supply of money has its main effects through changes in the exchange rate. A central bank can influence domestic economic activity in the short run by expanding the supply of money, driving the exchange rate down, and thus expanding the demand for exports. These effects will dissipate over time as domestic price levels adjust, so that the long run conclusions of the quantity of money theory of prices still hold in the open economy framework.

The new quantity theory’s claim that in the long run monetary policy cannot affect real economic activity has been transferred even to the short run in the theories of Robert Lucas (1981) that apply the concept of ‘rational’, or self-fulfilling expectations to simple, stylized macroeconomic models. In this view the public is very quick to learn whatever systematic rule the central bank follows in formulating monetary policy. Once they have learned it, the public will tend to offset the central bank’s operations with speculative movements of private portfolios, or through instantaneous price adjustments so as to neutralize any real effects of the policy. Unanticipated or unsystematic changes in the supply of money can affect real economic activity precisely because the public cannot distinguish these changes from changes in the underlying parameters of tastes, technology and resources that are thought to determine real decisions. Thus money itself can have short run effects on economic activity, but the rational expectations school argues that these possible effects can never be used for policy ends in a systematic fashion. It is unclear how general these results are, especially in circumstances where there are important differences in information and beliefs in different segments of the public, and where costs of learning the true structure of the economy (if such a structure actually exists) are significant.

The research of Don Patinkin (1965) and Kenneth Arrow and Frank Hahn (1971) on the insertion of money into fully specified general equilibrium theory has yielded some interesting clarifications of old arguments, but has not been able to reach sharp and sweeping conclusions like those of the new quantity of

money theory of prices. By treating real balances of monetary assets as another good symmetrical with produced and consumed goods, Patinkin has shown that out of equilibrium the stock of real balances in principle affects the demands and supplies of all other assets. This argument is fatal to Fisher’s simple procedure of separating the determination of relative prices and of the level of money prices. Hahn points out the paradox involved in assuming that money (as a thing, now, not a social relation) is valued only for having a positive price. In general in any monetary general equilibrium economy there exist equilibria in which money has a zero price, that is, a nonmonetary equilibrium. Since the non-monetary equilibrium is quite different from the monetary equilibrium, and may involve much lower levels of trade and production, this abstract observation leads to a qualitative understanding of the role of money in facilitating economic activity. This general equilibrium modelling generally accepts the framework of the new quantity of money theory of prices in positing the existence of a single, given, monetary asset with no close substitutes, and in abstracting from the questions of how monetary liabilities come to exist, and whether or not they can be produced by private agents.

Hyman Minsky (1982) puts forward, in contrast, a theory of the relation of money to economic activity in which qualitative changes in the private issuance of monetary liabilities plays a central role. In Minsky’s view, firms issue liabilities to finance production based on uncertain (and not necessarily self-fulfilling) expectations about future profitability. As an economic expansion develops, these expectations become more buoyant, and more liabilities are issued. This process gradually erodes the quality of the liabilities, because there comes to be a larger and larger probability that profit realizations will not in fact allow all the commitments to be met. Each firm tends to move towards thinner and thinner margins of equity in its financial position; firms that are reluctant to follow this policy find themselves severely punished competitively in the short run. The deterioration of the quality of liabilities sets the stage for a financial crisis, in which many firms face difficulties in meeting their commitments, and new lending is extended only on much tougher terms. In the absence of State intervention to substitute its liabilities in part for lower quality private liabilities, the resulting collapse of the financial system has strong repercussions on levels of economic activity as firms find it difficult to finance new productive outlays. Minsky’s account emphasizes the qualitative, rather than the purely quantitative effects of monetary liabilities on economic activity. It also goes beyond quantity of money theories in seeing the space of monetary liabilities as constantly shifting in its properties, as new liabilities are invented and old ones take on a different function with the development of production. In the place of a single, inelastically supplied, monetary liability with known and unchanged properties, the spectrum of financial assets in Minsky’s view is filled up with elastically supplied liabilities of unknown and constantly changing properties.

Channels of influence run both from money to economic activity and from economic activity to money. Whether money takes the form of a commodity produced by the system, or of liabilities issued to finance production, the creation
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of monetary assets is an incident in the cycle of production. But it is at least partly through the availability and cost of finance that levels of planned production are determined, and confined within the productive capacities of the whole society as Michal Kalecki (1971) has emphasized. Different monetary theories have emphasized one or another side of this mutual interaction, without reaching a fully adequate synthesis.

The relation between money and economic activity must be analyzed in explicitly dynamic terms because monetary and financial institutions constitute an important feedback loop in commodity-producing economies. The properties of the equilibria of a system often fail to reveal its dynamic behaviour. In equilibrium situations the powerful forces running from money to economic activity are balanced by those running the other way, and monetary effects tend to disappear from view. The contemplation of such equilibrium situations is an insufficient guide to understanding the effects of money on economic activity in general.

BIBLIOGRAPHY


Money Supply

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Money is still best defined in the classical tradition to refer to any object generally accepted and used as a medium of exchange. Financial innovations associated with technological or institutional changes do not modify this definition. They do change however the empirical counterpart of the definition and this requires intermittent changes in the measurement procedures for the nation’s money supply. This magnitude can be expressed as the sum-total of money held by the domestic public. This eliminates from the money supply all ‘intra-system items’, i.e. liabilities of money-issuing institutions which are simultaneously assets of some money-issuing institutions. For some purposes domestic money held by residents of foreign countries may usefully be included in the measure of the nation’s money supply.

Information about the money supply and knowledge about its behaviour is hardly important for its own sake. Its importance derives from the role of the money supply in the economy’s interaction. Shorter-run variations in monetary growth contribute to the variance in economic activity and long-term monetary growth determines approximately the long-term inflation rate. This position in the economic nexus directs attention to the determination of the money supply and its behaviour.

We usefully approach an understanding of the money supply process with the examination of a simple monetary system. A pure commodity money regime in an open (‘small’) economy offers some important insights into the nature of the money supply process and of monetary regimes. This primitive regime is fully characterized by a demand for money confronting a money stock and a trade balance controlling the rate of change of the domestic money stock.

This regime provides (a potentially moving) anchor for money stock and price level. For any prevailing foreign price level, exchange rate and underlying real conditions (money demand and ‘technology’) the regime determines an inherent equilibrium stock of money with a corresponding price level. The evolution of money stock and price level over time follows thus a course shaped by the underlying real conditions.