

TWO TRADITIONS IN MODERN MONETARY THEORY: JOHN LAW AND A. R. J. TURGOT

1. Introduction

John Law (1671-1729) is a prominent character both in the history of monetary events and in the development of monetary doctrines. As the founder and head of what, in effect, was one of the first national central banks in history,¹ the *Banque Generale* (later, the *Banque Royale*) of France, Law almost singlehandedly destroyed the French monetary system in the course of four short years (1716-1720).² As a monetary theorist, Law has been called the "ancestor of the idea of a managed currency" by no less an authority on economic doctrine than Joseph Schumpeter.³

What is of contemporary relevance and to be explored in this paper is the surprising, though generally unrecognized, degree to which Law's fundamental ideas on money pervade current monetary theorizing and policy advocacy in the U.S.

Such an endeavor is not without precedent. In 1951, a leading French economist and monetary theorist, Charles Rist, published an article in a major French economic journal, *Revue d'Economie Politique*, pointing out the surprising persistence of Law's doctrines among English-speaking economists.⁴

Rist introduced this article with the following statements⁵

It is said that history repeats itself. One can say the same thing about economists. At the present time there is a writer whose ideas have been repeated since Keynes, without ever being cited by name. He is called John Law. I would be curious to know how many, among the Anglo-Saxon authors who have found again, all by themselves, his principal arguments, have taken the trouble to read him.

The balance of Rist's article is devoted to detailing the numerous parallels between the monetary ideas of Keynes and those of Law, who had been born a little more than two centuries before Keynes. Law's ideas did not enjoy a sudden recrudescence with the overthrow of *classical* monetary theory by the *Keynesian revolution*, however. In his earlier treatise on the history of monetary and banking theory, Rist⁶ noted significant similarities between Law's approach to money and the approach of various Anglo-American quantity theorists from David Hume and David Ricardo to Alfred Marshall and Irving Fisher. It is hardly surprising, therefore, that the headlong flight by

¹The Bank of England, established in 1692, had been granted an effective legal monopoly of the note issue by the Act of 1709 and was well on its way to evolving into a full-blown central bank by the time Law's system was implemented in France. (Andreades-1909, pp. 72-85, pp. 121-24).

² For the story well told, see the works by Adolphe Thiers-1859/1969 and J.S. Nicholson-1888.

³ Schumpeter-1954, p. 321.

⁴ The article was reprinted in English as "Old Ideas on Money Which Have Become New", (Rist-1961, pp.144-70), L. Albert Hahn (1949, pp. 106-118), another leading Continental monetary theorist, published an article with a similar theme in an American journal a few years earlier.

⁵ Rist-1961, P. 144.

⁶ Rist-1940/1966.

academic economists away from Keynesian economics back toward classical monetary doctrines in recent years should not have shaken loose the grip of Law's ideas.

In the following section, I set out Law's basic monetary doctrines, using some representative quotes from his works. I then show how these ideas are embodied in the monetary doctrines of three schools of economists which are currently prominent in macroeconomic policy debates in the U.S., namely, the neo-Keynesian, the monetarist, and the supply-side schools. Finally, I briefly contrast the Law tradition of monetary analysis with an alternative tradition, which derives from one of Law's eighteenth-century critics, the French statesman and economist Anne Robert Jacques Turgot and which includes the modern Austrian school of economics.

2. John Law's Monetary Doctrines

In 1705, Law⁷ published his principal work on money, entitled *Money and Trade Considered, with a Proposal for Supplying the Nation with Money*. Law's "proposal" was intended to provide his native Scotland with a plentiful supply of money endowed with a long-run stability of value. The institutional centerpiece envisioned in Law's scheme resembles a modern central bank, empowered to supply paper fiat money via the purchases and sales of securities and other assets on the open market. Also strikingly modern are the theoretical propositions with which Law supports his policy goals and prescriptions.

Law initiates his monetary theorizing with two fundamental assumptions about the nature and function of money. The first is that, if money is not exactly an original creation of political authority, it ideally functions as a tool to be molded and wielded by government. Law believes that the State, as incarnated in the King, is the *de facto* "owner" of the money supply and that it therefore possesses the right and the power to determine the composition and quantity of money in light of the "public interest". Writes Law:⁸

All the coin of the Kingdom belongs to the State, represented in France by the King: it belongs to him in precisely the same way as the high roads do, not that he may appropriate them as his own property, but in order to prevent others doing so ; and as it is one of the rights of the King, and of the King alone, to make changes in the highways for the benefit of the public, of which he (or his officers) is the sole judge, so it is also one of his rights to change the gold or silver coin into other exchange tokens, of greater benefit to the public ...

Translating Law's statement into modern terms, money is an "instrument" that is or should be deliberately designed to achieve the "policy goals" considered desirable by political money managers and other government planners.

Law's second basic assumption is that money serves solely as a "voucher for buying goods" or an "exchange token." Thus, for Law,⁹ "Money is not the value for which goods are exchanged, but the value by which they are exchanged: The use of money is to buy goods and silver, while money is of no other use." In other words, money is a dematerialized claim to be redeemed for goods and having no valuable use in itself.

⁷Law-1705/1966.

⁸ Quoted in Rist-1940/1966, pp. 59-60.

⁹Law-1705/1966, p. 100.

From these two premises, Law draws out a number of theoretical propositions regarding the functioning of money and of a monetary exchange economy.

First, if money functions solely as an exchange voucher, then it should be promptly spent by its recipient on goods. "Hoarding" or holding an unspent balance of money income for any extended period of time serves no purpose and causes severe damage to the economy in the bargain. It therefore behooves the political authority to suppress or discourage hoarding by all the means at its disposal, including and especially the substitution of paper currency for metallic currency.

Law argues vehemently on this point¹⁰

... as the coin of gold or silver bears the image of the prince or some other public mark, and as those who keep this coin under lock and key regard it as exchange tokens, the prince has every right to compel them to surrender it, as failing to put this good to its proper use. The prince has this right even over goods which are your own property, and he can compel you to sow your land and repair your houses on pain of losing them; because, at bottom, your goods are yours only on condition that you use them in a manner advantageous to the community. But, in order to avoid the searches and the confiscations of money, it would be better to go at once to the source of evil, and to give men only that kind of money which they will not be tempted to hoard [i.e. paper money].

But what is the nature of the economic harm caused by hoarding? According to Law, hoarding creates a deficiency of circulating money and spending, resulting in a reduction of trade and employment. Under such conditions, an increase in the money supply raises spending, employment, and real output :

... trade depends on money. A greater quantity employs more people than a lesser quantity. A limited sum can only set a number of people to work proportioned to it, and 'tis with little success laws are made for employing the poor or idle in countries where money is scarce ; good laws may bring money to full circulation 'tis capable of, and force it to those employments that are most profitable to the country: But no laws can make it go further, nor can more people be set to work, without more money to circulate so as to pay the wages of a greater number.¹¹

It is important to note that Law does not fall victim to the naive mercantilist fallacy of confusing money with wealth. Law, in fact, upholds the modern view that money is merely the means or "policy tool" by which the goal of increasing national income and wealth is achieved. That a plentiful supply of money is not considered by Law to be the ultimate aim of policy is evident from the following passage:

National power and wealth consists in numbers of people, and magazines of home and foreign goods. These depend on trade, and trade depends on money. So to be powerful and wealthy in proportion to other nations, we should have money in proportion with them ...¹²

The belief that, left to their own devices, market participants are prone to stop up the monetary circulation by hoarding leads Law to conclude that the market economy is inherently unstable and likely to generate chronic unemployment of labor and other resources. Underlying and supporting this line of reasoning is Law's implicit assumption - which was reintroduced into modern economics by Keynes - that, for most goods, it is quantities and not prices that normally respond to variations in total

¹⁰ Quoted in Rist-1940/1966, p. 60.

¹¹ Law-1705/1966, p. 13.

¹² Law-1705/1966, pp.59-60.

spending as well as to shifts in relative demands. For example, Law¹³ writes that "Perishable goods, as corns, etc. increase or decrease in quantity as the demand for them increases or decreases; so their value continues equal or near the same... Goods will continue equal in quantity as they are now to demand, or won't differ much: For the increase of most goods depends on the demand. If the quantity of oats be greater than the demand for consumption and magazines, what is over is a drug, so that product will be lessen'd ..."¹⁴

In addition to his assumption that the prices of most goods are "sticky downward," Law further anticipates Keynes and modern macroeconomists by positing a causal chain that runs from the supply of and demand for money through the height of the interest rate to the volume of business investment and employment. Thus Law¹⁵ argues that "As the quantity of money has increased ... much more than the demand for it... so of consequence money is of lesser value: A lesser interest is given for it... if the demand had increased in the same proportion with the quantity ... the same interest would be given now as then..."

Furthermore, the lowered interest rates produced by the expansion of a deficient money stock, according to Law, serve as a stimulus to investment in the import and export trades and in domestic manufacturing and thus bring about an expansion of employment. Writes Law:¹⁶ "... if lowness of interest were the consequence of a greater quantity of money, the stock [of capital] applied to trade would be greater, and merchants would trade cheaper, from the easiness of borrowing and the lower interest of money ... [and] all imported goods would be cheaper, money being easier borrowed, merchants would deal for a greater value, and men of estates would be capacitate to trade, and able to sell at less profit."

Conversely, if the shortage of money is not alleviated, high interest rates will persist, preventing investment opportunities from being exploited and causing price deflation and depression of the trade and manufacturing sectors. Thus Law¹⁷ argues that, although profit opportunities may exist in the export trade "... money being scarce [export merchants] cannot get any to borrow, tho their security may be good ... So for want of money to Exchange by, Goods fall in value, and Manufacture decays."

A further implication of the assumption that money is merely a claim-ticket for goods is that, ideally, its value should remain perfectly stable. Stability of the purchasing power of money is necessary to insure that an individual who sells goods for money is reasonably certain of purchasing goods of equivalent value at a later moment of time. Gold and silver, however, are not suited to serve as such a "voucher to buy," precisely because they are tangible and useful commodities whose value naturally fluctuates according to changing market conditions. On these grounds alone, Law¹⁸ advocates the replacement of market-chosen specie money by a government-issued paper money "backed" by land, a commodity with an allegedly more stable market value:

Money is ... a value payed, or contracted to be payed, with which 'tis supposed, the receiver may, as his occasions require, buy an equal quantity of the same goods he has sold, or

¹³ Law-1705/1966, p. 63, and pp.69-70.

¹⁴ Vickers (1959/1968, pp. 113-19) discusses Law's "implicit assumption" regarding the "elasticity of supply of commodities produced."

¹⁵ Law-1705/1966, p. 67, and pp. 71-72.

¹⁶ Law-1705/1966, p. 20, p. 75.

¹⁷ Law-1705/1966, p. 116.

¹⁸ Law-1705/1966, pp. 61-62, p.64, p. 84, p. 102.

other goods equal in value to them: And that money is the most secure value, either to receive, to contract for, or to value goods by; which is least liable to a change in its value.

Silver money is more uncertain in its value than other goods, so less qualified for the use of money... Silver in bullion or money changes its value, from any change in its quantity, or in the demand for it... And the receiver is doubly uncertain whether the money he receives or contracts for, will, when he has occasion, buy him the same goods he has sold, or the goods he is to buy... Land is what in all appearance will keep its value best, it may rise in value, but cannot well fall: Gold and silver are liable to many accidents whereby their value may lessen, but cannot well rise in value.

From whence it is evident, that land is more qualified for the use of money than silver ... being more certain in its value, and having the qualities necessary in money, in a greater degree: With other qualities silver has not, so more capable of being the general measure by which goods are valued, the value by which goods are exchanged, and in which contracts are taken.

Now, the reference to land aside, the foregoing is a remarkable statement of the modern argument in favor of a political price-level stabilization scheme and against a free-market commodity money such as gold. Law also argues that paper money is cheaper than metallic money, and that, as a consequence, the substitution of the former for the latter for use as exchange tokens facilitates an increase of national income and wealth. Once again, Law's argument strongly anticipates modern criticisms of the gold standard based on considerations of its high "resource costs" :

Gold and silver are of course commodities like any other. The part of them used for money has always been affected by this use, and goldsmiths have always been forbidden to buy gold and silver louis [i.e. French coins] and use them for their craft. Thus all this part has been withdrawn from ordinary commerce by a law for which there were reasons ... but which is a disadvantage in itself. It is as if a part of the wool or silk in the kingdom were set aside to make exchange tokens: would it not be more commodious if these were given over to their natural use, and the exchange tokens made of materials which in themselves serve no useful purpose¹⁹?

Finally, Law clearly recognizes that the best route to the establishment of a paper money which can be inflated *ad libitum* by the political authorities is through the institution of banking. Law understood as early as 1705 what was only to be generally understood by the economics profession over two centuries later: that the expansion of loans by fractional-reserve banks leads to the creation of new money and thereby increases the aggregate quantity of money in the economy. According to Law²⁰: "The use of banks has been the best method yet practised for the increase of money ... So far as they lend they add to the money, which brings a profit to the country by employing more people, and extending trade; they add to the money to be lent, whereby it is easier borrowed, and at less use [i. e., interest] ..."

Law's modern insight into the money-creating powers of fractional-reserve banks was supplemented by his forthright recognition of the potential instability of these institutions, due to the temporal mismatching between their loan assets and their deposit liabilities. The result of this inherent "term-structure risk", Law accurately foretold, would be repeated suspensions of cash payments to depositors, but he argued that this disadvantage was far outweighed by the benefits yielded by these

¹⁹Quoted in Rist-1940/1966, p. 59.

²⁰Law-1705/1966, pp. 36-37.

institutions as instruments for the attainment of macroeconomic policy goals, such as high employment, low interest rates, and stability of the price level. As Law²¹ states the argument, when a bank lends out a part of its cash deposits,

... the bank is less sure, and tho none suffer by it, or are apprehensive of danger, its credit being good; yet if the whole demands were made, or demands greater than the remaining money, they could not all be satisfied, till the banks had called in what sums were lent.

The certain good it does, will more than balance the hazard, tho once in two or three years it failed in payment ; providing the sums lent be well secured: Merchants who had money there, might be disappointed of it at demand, but security being good and interest allowed; money would be had on a small discount, perhaps at par.

Based on his theory of money and banking, Law²² elaborates a scheme for monetary reform. A commission, appointed and supervised by Parliament, would be set up to issue notes against the security of land. The commission would be authorized to issue its notes in three ways:

1) by lending notes at a market rate of interest, the total loan not to exceed two-thirds of the market value of lands offered as collateral by the borrower;

2) by making loans equal to the full price of lands which were temporarily ceded to the commission until the loan was repaid and the lands redeemed;

3) by purchasing lands outright in exchange for its notes.

The commission would also be authorized to sell the mortgages and lands in its possession on the market in exchange for its notes. By assuring convertibility of its notes into mortgages and lands, Law believed that the supply of and demand for money would always tend to match, causing the value of money as expressed in the general level of prices to remain stable. He reasoned that if the supply of money were in excess, people would quickly rid themselves of the surplus notes by redeeming them for productive lands and interest-bearing mortgages. In the opposite case of an excess demand or shortage of money, people would rush to acquire additional cash balances by selling mortgages and lands to the note-issuing commission. In this way, significant fluctuations in the value of money would be done away with and, at the same time, there would always exist the optimum quantity of money in circulation to facilitate the needs of real economic activity.

Writes Law²³:

This paper money will not fall in value as silver money has fallen or may fall ... But the commission giving out what sums are demanded, and taking back what sums are offered to be returned; this paper money will keep its value, and there will always be as much money as there is occasion, or employment for, and no more ... The paper money proposed being always equal in quantity to the demand, the people will be employed, the country improved, manufacture advanced, trade domestic and foreign will be carried on, and wealth and power attained.

Now, at first blush, Law's bizarre scheme appears totally unrelated to modern monetary institutions and arrangements. However, as I shall argue below, a closer study reveals that the fundamental ideas underlying this proposal are strikingly similar to assumptions and propositions widely accepted by most modern monetary theorists and policymakers. As for the institutional

²¹ Law-1705/1966, pp. 37-38.

²² Law-1705/1966, pp. 84-100.

²³ Law-1705/1966, p. 89, p. 102.

framework of Law's proposal - the peculiar role of land notwithstanding - it defines the basic blueprint for the modern central bank.

In the nineteenth century, the monetary theorist and gold-standard advocate, Henry Dunning McLeod, graphically drew attention to the similarity between Law's plan and the standard practice of the Bank of England (and of modern central banks) of "monetizing government debt." With reference to the latter procedure, McLeod²⁴ wrote:

... it is perfectly clear that its *principle* is utterly vicious. There is nothing so wild or absurd in John Law's *Theory of Money* as this. His scheme of basing a paper currency upon land is sober sense compared to it. If for every debt the government incurs an equal amount of money is to be created, why, here we have the philosopher's stone at once... But let us coolly consider the principle involved in this plan of issuing notes upon the security of the public debts. Stated in simple language, it is this: *That the way to CREATE money is for the Government to BORROW money.* That is to say, A lends B money on mortgage, and, on the security of the mortgage is allowed to create an equal amount of money to what he has already lent !! Granting that to an extent this may be done without any practical mischief, yet, as a general principle, what can be more palpably absurd?

Today, instead of manipulating the supply of money by printing up and exchanging notes for lands and mortgages, the Federal Reserve System, for example, creates additional bank reserves and checkable deposits in the economy by purchasing Treasury securities from the public and the banks.

These then are Law's main ideas on money and monetary policy. They have been critically summarized by Rist:²⁵

Law's writings ... already contain all the ideas which constitute the equipment of currency cranks - fluctuations in the value of the precious metals as an obstacle to their use as a standard ... the ease with which they can be replaced by paper money, money defined simply as an instrument of circulation (its function of serving as a store of value being ignored), and the conclusion drawn from this definition that any object can be used for such an instrument, the hoarding of money as an offence on the part of the citizens, the right of the government to take legal action against such an offence, and to take charge of the money reserves of individuals as they do of the main roads, the costliness of the precious metals compared with the cheapness of paper money ...

3. Law's Ideas in the Modern World

The neo-Keynesians, monetarists, and supply-siders, although differing among themselves in important areas of theory and policy,²⁶ all share most of Law's fundamental ideas about money.

3.1 Money as a Policy Tool

All three schools predicate their respective monetary theories and policy prescriptions on Law's fundamental assumption that money is a means or "tool" to be used by government planners in

²⁴ McLeod-1892/1893, 1, pp. 487-88.

²⁵ Rist-1940/1966, p. 65.

²⁶ Good nontechnical discussions of the differences between Keynesianism and monetarism, by a Keynesian and a monetarist respectively, can be found in Kindleberger-1980 and Brunner-1983, pp. 24-33.

pursuing certain objectives, usually referred to as "policy goals". In modern welfare states, these goals are typically formulated in terms of statistical aggregates and averages which are presumed to gauge the performance of the overall national or "macro" economy, e.g. , the CPI, the unemployment rate, the rate of growth of real GNP, and so forth.²⁷

Specifically, neo-Keynesians treat money creation as a policy tool which complements government taxing, spending, and borrowing. Together, these tools of monetary and fiscal policy are supposed to enable the national government to manage total spending or "aggregate demand" in the economy so as to achieve some optimal tradeoff between the twin ills of inflation and unemployment, which are allegedly permanent features of a free market economy.

A typical expression of the Keynesian view is given by G.L. Bach²⁸:

Effective use of monetary and fiscal policy is necessary if we are to achieve stable economic growth with high-level employment of men and machines over the years ahead. History shows the unfortunate tendency of the largely private enterprise economic system in the United States to swing between recession and inflation. And there is little reason to suppose that in the future the system will automatically generate stable growth with high employment unless monetary and fiscal policies help to keep aggregate money demand growing roughly apace with the economy's capacity to produce... The two [i. e., monetary and fiscal policy] are the major instruments for regulating the level of aggregate demand.

Modern monetarists are the intellectual descendants of the pre-World War 2 Chicago school, which included extreme monetary interventionaists such as Henry Simons, Lloyd Mints, and Jacob Viner. The earlier school viewed the money supply as the most important policy variable available to the political authorities for stabilizing the national price level and thus minimizing or eradicating business fluctuations due to erratic swings in private spending. According to Mints²⁹ "... the case for attempting to stabilize the price level by monetary means lies in the fact that the quantity of money is the one easily and deliberately controllable factor and in the belief that variations in the stock of money can be so managed as largely to offset disturbing fluctuations in other factors, particularly the velocity of circulation."

So convinced was Viner³⁰ that money is the ideal macro policy variable that he formulated the quantity theory of money as a technical recipe for government monetary policy. This theory, he argued, "...is understood as holding only: (1) that an authority powerful enough to make the quantity of money what it pleases can so regulate that quantity as to make the price level approximate to what it pleases, and (2) that the possibility of existence of such power is not inconceivable *a priori*."

The most extreme in his views, however, was Simons, who regarded regulation of the quantity of money as "a fundamental function of government" and therefore advocated that complete and absolute control of the supply of money be vested in an agency of the central government. According to Simons³¹, "In the past, governments have grossly neglected their positive responsibility of controlling the currency; private initiative has been allowed too much freedom in determining the character of our

²⁷For an enumeration of these goals, see Bach-1971, p. 24, p. 38.

²⁸ Bach-1971, p. 3.

²⁹ mints-1945, p. 275.

³⁰ Viner-1958, P. 365.

³¹ Simons-1948, pp. 161-162, p. 180.

financial structure and in directing changes in the quantity of money and money substitutes... if the stability of [a price] index is to be maintained with the least resistance and the minimum of disturbing administrative measures, it is essential that the power to issue money and near-money should increasingly be concentrated in the hands of the central government." in order to insure that the State's monopoly control over the supply of money remains forever unchallenged and that the opportunity for the private market to create near-moneys is minimized, Simons³² went as far as to call for "drastic limitation on the formal borrowing power of all private corporations and especially upon borrowing at short term." For the same reasons, Simons³³ even contemplated limitations on "financing via the open account (book credit) and installment sales."

While the earlier Chicago economists desired to directly stabilize a price index, modern monetarists tout the merits of a monetary policy or "rule," which would stabilize the rate of growth of the quantity of (fiat) money. The monetarists argue that the "quantity" rule would insure a relatively stable price level, an outcome tending to dampen rather than to amplify the mild business fluctuations which, they believe, inevitably attend the operation of the dynamic market economy. The monetarists would charge a central government agency, such as the central bank or the treasury department, with the responsibility of administering their preferred rule. For the purpose of carrying out its charge, the agency in question, of course, would be endowed with the "natural" monopoly of issuing a paper fiat currency.

It is noteworthy that, in one important respect, the monetarists are actually closer in spirit to Law than are their generally more interventionist Keynesian opponents. Keynes and his followers generally decry the gold standard because the "inelasticity" of the supply of gold affords little or no scope for the operation of a "discretionary" monetary policy. Monetarists and their forerunners, on the other hand, are even reluctant to admit that a monetary system can exist and function without some degree of political control and management. It is their contention that all practicable monetary regimes necessarily involve the explicit or implicit choice of a particular policy rule by the State to guide its inevitable manipulations of the money supply. This view accounts for the peculiarly monetarist characterization of the gold standard as a system in which the monetary authority follows the rule of intervening in the market to "fix" the price of gold in terms of the national currency unit, say for instance, at thirty-five dollars per ounce. Accordingly, the monetarists condemn the gold standard, not because it leaves no scope for discretionary management, but because it involves the choice of a suboptimal policy rule.

For example, Simons³⁴ declares that "the utter inadequacy of the old gold standard ... as a definite system of rules ... seems beyond intelligent dispute." In the same vein, David I. Meiselman³⁵, a current monetarist, writes that "The proponents of a gold standard and of a fixed nominal price of gold have an excellent point in proposing an explicit rule. The main problem of fixing the gold price is that *it is the wrong rule* - we can do better."

The supply-siders, at first glance, appear to represent an exception to the prevailing belief that economic stability necessitates political control and manipulation of the money supply. Indeed, they advocate the gold standard on the basis of its ability to "automatically" adapt the supply of money to

³² Simons-1948, P. 182.

³³ Simons-1948, P. 171.

³⁴ Simons-1948, P. 169.

³⁵ Meiselman-1987, p. 260.

changes in the demand for money. However, a closer look at the monetary reform proposals of prominent supply-siders, like Arthur Laffer, Robert Mundell, and HUD Secretary Jack Kemp, reveals that what is actually being proposed is a governmental pricefixing scheme or a "price rule" involving gold and not a genuine gold standard.³⁶ Under the gold price rule, money remains a politically manipulated paper fiat currency and gold becomes merely an "external standard," whose price is pegged by the central bank as a means of achieving general price stability. The "gold standard" as it is understood by supply-siders, therefore, represents not an unmanaged market-chosen money, but a more efficient policy rule to be followed by government money managers than the quantity rule prescribed by monetarists.

3.2. Money as an Exchange Token

As I noted above, the second flawed premise underlying Law's monetary theory is that money functions solely as an "exchange token" or a "voucher to buy." This misconception led Law to single out hoarding as the main culprit in the economy-wide disruption of trade and depression of economic activity. While modern macroeconomists do not view the function of money quite as one-sidedly as Law did, most regard hoarding and the related shrinkage of the money-spending stream as a source of potentially serious macroeconomic instability.

For example, despite Keynes' well-known discussion of the different motives for holding money, the primary analytical and policy focus of Keynesians has always been the level of aggregate demand in the economy. They emphasize that the piling up of "idle balances," due to irrationally heightened "liquidity preferences" of the public, raises interest rates, constricts investment spending and aggregate demand, and thereby depresses overall economic activity. The results are reduced real output and chronic unemployment of labor and other productive resources.

Earlier Keynesians expressed themselves emphatically and simplistically on the role of money-spending in determining the level of economic activity and employment, and they exhorted government to aggressively wield the instruments of fiscal and monetary policy to insure a full-employment level of aggregate demand. For example, Lord Beveridge³⁷ wrote: "Employment depends on outlay [i.e. spending]. Full employment cannot be attained unless outlay in total is sufficient to set up a demand for the whole of the labor that is available for employment. Where should the responsibility be placed for insuring adequate total outlay?... The central proposition of this Report is that responsibility of ensuring at all times outlay sufficient in total to employ all available man-power... should formally be placed... upon the State."

It was the Law-like emphasis on the spending-output connection, coupled with dread of private individuals' unruly and antisocial propensities to hoard, that caused early Keynesians to belittle the importance of the actual *stock* of money in existence and to emphasize the *flow* of money payments. In the words of one early and radical disciple of Keynes, Abba Lerner³⁸: "The level of employment depends on the *flow* of acts of *payment* involved in the spending, not on the *stock* or amount of *money* in existence ... The only thing that matters is the *flow* of money spending. The stock of money can be of significance only to the degree that it may influence the flow of spending..."

³⁶ A critique of the proposal for a gold price rule can be found in Salerno-1987, pp. 249-252.

³⁷ Beveridge-1945, pp. 134-135.

³⁸ Lerner-1951, P.51, P. 53.

Lerner³⁹ argues, as Law did earlier, that the total spending stream must be stabilized, because the inflexibility of wage rates and other prices in the free market make depression and unemployment the likely outcome of any shrinkage of aggregate demand. Unfortunately, because even individuals enlightened by Keynesian doctrine respond "perversely" to the anticipated variations in aggregate demand generated by their own erratic spending habits, Lerner⁴⁰ concludes that "It is the government, therefore, that must accept the responsibility for keeping total spending at the level that gives us full employment without inflation. By making use of the fiscal instruments at its disposal it can [keep] spending from going too high or too low and thus [assure] permanent prosperity and stability."

For Lerner⁴¹, then, money is a purely political element whose quantity is to be determined solely by the needs of a government fiscal policy designed to manipulate the overall spending stream in the economy: "The use of the [fiscal] instrument should never be hampered just because there may not be enough money stock in the treasury at the moment. To sacrifice the prevention of deflation because of shortage of money which could be printed is no more sensible than to refrain from carrying out any other important government action because the necessary paper forms or stationery would have to be printed."

Chastened by the manifest failure of this earlier Keynesian analysis to make good on Lerner's promise to insure "permanent prosperity and stability" or even to come to grips with the possibility of the stagnation that has ravaged Western mixed economies in the last two decades, modern Keynesians have been forced to retreat to the drawing board. However, while they may now differ from the earlier followers of Keynes on various points of high theory, they still firmly adhere to Keynes's and Law's central message that the aggregate flow of money-spending determines overall employment and output, at least in the short run, and that this flow of spending can and should be managed by the political authorities. As one prominent neo-Keynesian, Allan Blinder⁴², recently declared:

In [many] respects, 1980s Keynesianism differs from its 1960s counterpart. But many of the central tenets of Keynesian economics remain much as they were twenty five years-ago. The private economy is not a giant auction hall [i.e., wage rates and prices tend to be rigid] and will not regulate itself smoothly and reliably. Recessions are economic maladies, not vacations. The government has both monetary and fiscal tools that it can and should use to limit recessions and fight inflations; but it cannot do both at once.

Now let us consider the monetarist approach to the function of money. In the realm of high theory, it is true, money is treated as a "temporary abode of purchasing power," as one among a spectrum of assets of varying degrees of liquidity held in investment portfolios by private individuals. Nonetheless, following the quantity-theorist Irving Fisher, monetarists believe that a key element in the practical understanding and control of monetary phenomena is the 'velocity of circulation of money.' This concept refers to the average rate at which a unit of money is "turned over" or spent in the economy.

Although monetarists generally contend that the velocity of money (or, sometimes, its growth rate) is stable and predictable over the long run, they do entertain the theoretical possibility that a sudden and sharp decline in velocity and spending, due, for example, to an increase in people's

³⁹ Lerner-1951, pp. 203-206.

⁴⁰ Lerner-1951, p. 141.

⁴¹ Lerner-1951, p. 133.

⁴² Blinder-1987, p. 108.

demand to hold money, can lead to a recession, unless offset by a timely injection of new money into the economy. As one proponent of the monetarist quantity rule argues:

The k in the money equation [i.e., the reciprocal of the velocity of money] is stable in longer periods, not seasonally and not cyclically. Business recession is initiated by an increase in k ... Demand for money rises at the expense of demand for goods. Excess demand for money is eventually satisfied, but its costs mount up in the forms of failing prices, falling output, and falling employment ... The sensible solution for the shortage of money balances is simply creation of more money balances, in nominal amount, by the monetary system⁴³.

Some monetarists even consider the possibility that a "self-generating deflation," which is precipitated by a reduction of private spending, could lead to a "runaway deflation"⁴⁴. Interestingly, the spectre of a self-generating "hyperdeflation" was first raised by radical Keynesians such as Lerner⁴⁵.

Generally, however, monetarists do not expect such sudden and severe declines in velocity and spending to be spontaneously generated by the operation of the market economy. The focus of their policy recommendations is, instead, on insuring that the spending stream is kept growing at a rate sufficient to accommodate the secular growth of real output in the economy. For monetarists, then, the primary concern is a deficiency of money and spending which can emerge when the growth rate of the velocity of money lags behind the growth rate of real output. This is a long-run development which can stunt economic growth and lead possibly to recessionary declines in output and employment.

Supply-side monetary theorists quibble with the peculiar monetarist contention that the long-run or "trend" growth rate of velocity is stable and predictable and that short-run deviations from trend are quickly reversed. If, as supply-siders claim, the demand for money and velocity are subject to large and unpredictable fluctuations from one moment to the next, then aggregate demand, the price level, and real output will be unstable. The supply-side plan for a gold price rule, therefore, is designed to provide the political authorities with the information and wherewithal necessary to make the rapid adjustments in the supply of money which are necessary to offset the potentially volatile and destructive fluctuations of private spending in the economy. As supply-sider Marc Miles⁴⁶ argues in defense of a general price rule:

The important point is that under the price rule, the Fed does not have to worry about whether or why money demand has risen or whether velocity is stable. If the private sector wants more money, for whatever reason, the Fed finds out soon enough. The dollar price of spot silver falls, as people try to become liquid, and the Fed must react. The Fed provides the market with dollars, in exchange for spot deliveries of silver, and the desired additional money becomes available. The Fed maintains the stable price between silver and the basic dollar, and the market tells the Fed when to adjust liquidity. The Fed no longer concerns itself with the imprecise, indirect policy barometer, the money supply.

Interestingly, the supply-side preoccupation with unpredictable velocity movements and its corresponding support for a price rule harks back to the earlier Chicago school. For instance,

⁴³ Shaw-1965, P. 195.

⁴⁴ McCulloch-1982, pp. 53-54.

⁴⁵ Lerner-1951, pp. 205-206.

⁴⁶ Miles-1984, pp. 187-88.

Simons⁴⁷ was led to withhold his recommendation of the quantity rule, because of its "obvious weakness," which "...lies in the danger of sharp changes on the velocity side, for no monetary system can function effectively or survive politically in the face of extreme alternations of hoarding and dishoarding." Conversely, Simons⁴⁸ contended that "one great advantage of a price-index rule [is] that it defines, within a definite long-term rule, appropriate measures for dealing with velocity changes."

3.3. Stabilization of the Price Level

As a result of his narrow focus on money's function as an exchange token, Law considered a stable value of money of primary importance to the functioning of the market economy. Neo-Keynesians, monetarists, and supply-siders likewise regard stabilization of the price level as one of the most important goals of macroeconomic policy. Since none of the three schools advocates actually freezing the level of each particular price, what they seek in practice is constancy of a selected statistical average or index of prices.

Keynes and his early followers preferred that policy aim at a "stable general level of money-wages," at least in the short run⁴⁹. The attainment of this policy goal was at first thought to be compatible with and, indeed, a necessary precondition of, full employment. When it was later found that - despite the implementation of Keynesian policies - unemployment coexisted with a rising level of prices, Keynesian economists posited a stable "Phillips-curve tradeoff" or inverse relationship between inflation and unemployment.

Keynesians then advised that policymakers choose from this "menu of policy choices" the attainable combination of unemployment and inflation rates which would "optimize" society's welfare. During the 1970s and 1980s, however, it became painfully obvious that the Phillips relationship was not stable, as inflation and unemployment rates spiralled upward in tandem.

Today, while neo-Keynesians have been forced to admit that the Phillips curve is stable and yields an "exploitable tradeoff" in the short run only, they still urge that policymakers use fiscal policy and monetary policy to "make the best of a bad situation" and to "strike a balance" in pursuing the two desirable goals of price-level stability and full employment. For Keynesians, however, the right balance for macroeconomic policy has always been and still remains heavily biased toward the attainment of "full employment," even at the cost of substantial inflation. The neo-Keynesian position on these matters is summed up by Blinder⁵⁰:

... the fact that unemployment and inflation can, and sometimes do, rise together does not mean that the makers of national economic policy no longer face a trade-off between inflation and unemployment. The same unpleasant choices must be made. It is just that they may be a good deal nastier than we came to believe in the halcyon days of the 1960s...

The damage that high unemployment does to economic efficiency is enormous and inadequately appreciated. By contrast, the harm that inflation inflicts on the economy is often exaggerated ... Hard-headed devotion to the principle of efficiency thus argues for worrying less about inflation and running a high-pressure economy in which jobs are plentiful. This

⁴⁷ Simons-1948, P. 164.

⁴⁸ Simons-1948, p. 331, fn. 16.

⁴⁹ Keynes-1964, pp. 270-71; Lerner-1951, pp. 228-229.

⁵⁰ Blinder-1987, p. 43, p. 65.

prescription, of course, is precisely the opposite of what the Western world has been doing for more than a decade.

In contrast to the Keynesians, monetarists do not believe that the achievement of full employment requires the sacrifice of price stability. In fact, monetarists argue that a stable price level is the *sine qua non* of an efficiently functioning market economy. Underlying the monetarist concern with a stable price level is the view, prominently featured in Law's work, that money is not only the general medium of exchange and therefore an indispensable 'micro' tool for calculating profits and losses and orienting individual economic action, but that it is a literal measure or yardstick of value. Thus Law⁵¹ repeatedly referred to money as "the measure by which goods are valued."

By treating money as some sort of social measuring rod of value, what Law and the monetarists ignore is the fact that money's use as a medium of exchange is precisely what precludes it from possessing an invariant market value. The reason is that the medium of exchange, by its very nature, is a commodity which is routinely exchanged and held throughout the market, and thus its value is necessarily determined by the ever-changing conditions of supply and demand. A medium of exchange possessing a fixed purchasing power is therefore a self-contradictory concept.

It is not surprising, then, that those who treat money as a measure of value tend to conceptually isolate it from real-world market processes, attributing the origination of money and of its purchasing power to some vague extramarket "convention." Thus, for example, Friedman⁵² declares, "the existence of a common and widely accepted medium of exchange rests on a convention" and "the value of money rests on a fiction." Following classical monetary theorists like John Stuart Mill, Friedman⁵³ argues that money is a "veil," which is neutral to and does not influence the underlying "real" forces that determine the wealth of a nation." The only time that money impinges on the real economy, according to Friedman, is when it "gets out of order" and the "fiction" supporting money's common acceptance and market value threatens to completely dissolve. For Friedman and the monetarists, disorderly money is characterized by an unstable price level. From this position it is a short jump to the policy conclusion that the value of money should not be subject to determination by changeable and unpredictable market forces, but should be controlled and stabilized by an extramarket organization, which, in practice, can only be the State.

Earlier writers in the tradition of monetary analysis represented by Friedman and the monetarists were emphatic regarding the necessity of price-level stabilization to insure a well-functioning market economy. According to these writers, while the market automatically and efficiently adapts to changes in the relative prices of goods and services, it is inherently incapable of smoothly adjusting to significant changes in the overall price level. Thus, Simons⁵⁴ argued that the economy "... could be trusted systematically and automatically to correct disturbances in *relative* prices and *relative* outputs of goods and services ... General price (price-level) movements, however, served quite as systematically to set in motion forces which served, not to correct but to aggravate the initial disturbance."

The main reason given by Simons⁵⁵ for the inability of the market economy to adapt to price-level fluctuations without significant effects on output and employment is the fact that costs are

⁵¹ Law-1705/1966, p. 52, p. 61, p. 92, p. 102.

⁵² Friedman-1980, p. 249.

⁵³ Friedman-1980, p. 249.

⁵⁴ Simons-1951, pp. 108-109.

⁵⁵ Simons-1951, p. 55.

"extremely inflexible downward." While Simons⁵⁶ places part of the blame for such cost rigidities on government price controls and political toleration of union violence in the fixing of some wage rates, a large share of the blame is attributed to the exercise of private monopoly power which is alleged to pervade the unregulated market economy and to permit monopolistic firms to cut quantities rather than prices in response to a fall in demand. But even if all goods and services were supplied in "highly competitive markets," so that overall prices could adjust relatively rapidly to changes in the relationship between the demand for and supply of money, Simons⁵⁷ argues that "... such price-level instability is undesirable and disturbing in other decisive respects; and the degree of price and wage flexibility necessary to assure reasonable stability of production and employment in the face of great monetary instability is utterly unattainable." Simons, like Law, therefore denies that freemarket prices and wages rates can ever be flexible enough to permit the smooth operation of a monetary system based on a commodity money originated and supplied strictly by market forces. Accordingly, Simons⁵⁸ concludes that "If a free-market system is to function effectively... it must operate within a framework of monetary stability which it cannot create for itself and which only government can provide."

A similar position was taken by Mints⁵⁹, who declared that "It is only under conditions of a stable general level of prices and some minimum amount of flexibility in the price system that an equilibrium level of relative prices can be maintained ... The truth is that the need for some given system of relative prices for the purpose of maintaining optimum employment and output is a strong argument in defense of stabilizing the price level."

The Law-Simons-Mints position remains one of the key tenets of modern monetarist doctrine. According to Friedman⁶⁰, "What is seriously disturbing to economic stability are rapid and sizable fluctuations in prices, not mild and steady secular movements in either direction." For Friedman⁶¹, therefore, the "ultimate end" of monetary policy is "achieving a reasonably stable price level." As the most effective means for pursuing this desideratum, Friedman and the monetarists prescribe the aforementioned quantity rule, which dictates a slow and steady growth rate of one of the monetary aggregates more or less under the direct control of the monetary authority.

Supply-siders emphasize money's function as a measure of value and the corollary importance of an invariant price level for macroeconomic stability even more strongly than do the monetarists. The case is argued by Miles⁶² in the following terms:

A dollar bill is like a yardstick. It is a common guide for comparing the worth of different commodities today, and a single commodity over time... So the money yardstick is a system for conveying information about value. It is analogous to yardsticks used in specific industries. Take, for example, shoe sizes. Like the dollar, shoe sizes are a yardstick or information system; they provide a way to compare different pairs of shoes... Money is like shoe sizes. The monetary system provides information that people use to make plans for today and for the future. It is only going to be used as long as it continues to provide reasonably accurate and

⁵⁶ Simons-1951, pp. 53-54.

⁵⁷ Simons-1951, p. 108.

⁵⁸ Simons-1951, p. 109.

⁵⁹ Mints-1945, p. 275.

⁶⁰ Friedman-1960, p. 92.

⁶¹ Friedman-1960, p. 88.

⁶² Miles-1984, pp. 189-91.

dependable information. As the system becomes more volatile, people turn away from it, employing the best alternatives... [T]he economy experiences a period of turmoil, uncertainty, and slow growth.

In contrast to the monetarist policy prescription, however, supply-siders advocate a price rule, which would constrain the monetary authority to fix the price of a single commodity or the combined price of a group of commodities. As we saw, it is their skepticism regarding the monetarists' belief in the stability of velocity that leads the supply-siders to deny that fixing the growth rate of the money stock via a quantity rule is capable of securing the steady growth of aggregate demand necessary to insure price-level stability.

Under the supply-siders' preferred alternative, the Fed is obliged to target the price of a commodity, say gold, whose market value is believed to be a sensitive indicator of impending changes in the overall price level. For example, if the target price of gold is established at \$400 per ounce and it starts to exhibit a tendency to decline below this level on the open market, it indicates to the Fed that there is a developing shortage of money and spending, which threatens to reduce prices throughout the economy. By purchasing gold or even Treasury securities from the public in exchange for newly-created dollars until the price of gold returns to its target level, the Fed automatically remedies the monetary shortage and thereby offsets the tendency of the price level to decline. On the other hand, a surfeit of cash balances in the economy is indicated by upward pressure on the market price of gold. The Fed relieves this pressure by selling gold or securities to the public and, in the process, absorbs and extinguishes the excess dollars before the general price level can be driven up.

3.4. The Resource Costs of a Commodity Money

As we saw above, Law counted the high costs of supplying commodity money relative to the costs of supplying paper fiat money as a serious defect of metallic monetary standards. "Resource costs" also bulk large in the monetarist case against the gold standard. For example, Friedman⁶³ writes: "The fundamental defect of a commodity standard, from the point of view of the society as a whole, is that it requires the use of real resources to add to the stock of money. People must work hard to dig gold out of the ground in South Africa - in order to rebury it in Fort Knox or some similar place." But why is it necessary for additions to the nominal money stock ever to occur?

Underlying Friedman's reasoning on this point is the assumption, shared with Law, that, since money is a measure of value, an efficient monetary standard must insure a stable price level. Thus, Friedman⁶⁴ argues that the achievement of a stable price level under a 100 percent gold standard requires that the annual production of gold be sufficient to increase the money supply at the same rate as the annual increase of real output in the economy (assuming a constant velocity of circulation of money). According to his estimates for the U.S. economy in the 1950's, the production of the necessary yearly increment to the supply of gold money would "cost" approximately 50 percent of the average annual increase in real GNP.⁶⁵ By comparison, the cost of achieving a stable price level

⁶³ Friedman-1963, p. 40.

⁶⁴ Friedman-1953, pp. 209-10; Friedman-1960, p. 5.

⁶⁵ Friedman-1960, p. 5. For the U.S. economy in the 1980's, Meltzer (Meltzer-1987, p. 213), estimates the annual cost of a commodity money to equal 16 percent of the average annual increase in real GNP.

under a paper fiat standard is virtually nil, because the resource costs of adding to the money supply under such a standard are negligible.

Setting aside the unsupported and heroic assumption that a paper fiat currency monopolized by the State will be managed so as to yield a constant price level, this accounting of the alternative costs of the two monetary standards is meaningless. The reason is that the criterion which Friedman and the monetarists apply in judging the efficiency of competing monetary standards - that is, the expenditure of resources which each requires to deliver stability in the value of money - is singularly inapplicable to the commodity employed as the universal medium of exchange in a dynamic market economy. According to the anti-Law tradition of monetary analysis outlined below, the value of money, like that of any other commodity, can and does fluctuate in response to unceasing changes in supply and demand conditions. Thus, if general growth in productivity and real output in the economy results in an increase in the overall demand for money, there is no necessity for an increase in the production of the monetary commodity.

In fact, gold is chosen as money precisely because it is a commodity which maintains its extreme scarcity relative to human wants despite the progressive intensification of the division of labor and the ongoing capital accumulation and technological innovation that marks the evolving market economy. This inelasticity of supply means that, under the gold standard, the increased demand for money resulting from economic growth is satisfied mainly by a rise in the purchasing power of the monetary unit, which involves a general fall in prices and requires little or no expenditure of real resources for mining additional gold. This is the reason why the spectacular growth of the industrialized market economy operating under the nineteenth-century gold standard was characteristically accompanied by a gently declining price level.⁶⁶

But what of the monetarist objection that the secular decline in prices operates to undermine money's function as a measure of value. The response of the anti-Law monetary theorist is that money is not an eternally fixed "measure" in any sense, but a tool of economic calculation which permits capitalist-entrepreneurs to appraise the profitability of prospective investments and production processes. The latter function is not in the least thwarted by the secular tendency of prices to decline under the gold standard. As Ludwig von Mises⁶⁷ writes:

In the conduct of business, reflections concerning the secular trend of prices do not play any role whatever. Entrepreneurs and investors do not bother about secular trends. What guides their actions is their opinion about the movement of prices in the coming weeks, months, or at most years. They do not heed the general movement of all prices. What matters for them is the existence of discrepancies between the prices of the complementary factors of production and the anticipated prices of the products. No businessman embarks upon a definite production project because he believes that *the prices, i.e.,* the prices of all goods and services, will rise. He engages himself if he believes that he can profit from a difference between the prices of goods of various orders. In a world with a secular tendency toward falling prices, such opportunities for earning profit will appear in the same way in which they appear in a world with a secular trend toward rising prices...

⁶⁶ For example, the phenomenal growth of the U.S. economy between 1879 and 1896 occurred against a backdrop of declining prices. See Paul/Lehrman-1982, pp. 102-110.

⁶⁷ von Mises-1966, pp. 469-70.

A secular tendency toward a rise in the monetary unit's purchasing power would require rules of thumb on the part of businessmen and investors other than those developed under the secular tendency toward a fall in its purchasing power. But it would certainly not influence substantially the course of economic affairs.

3.5. The Supply of Money as a Political Monopoly

The coping stone of Law's scheme for monetary reform is a monopolistic money-issuing institution which resembles a modern central bank. Needless to say, the three modern macroeconomic schools under examination all staunchly support the idea that supply of money needs to be centralized under a political monopoly.

This position requires explanation in the case of the monetarists, who generally are insightful and vigorous exponents of the virtues of the free market. To justify their support for a monopoly central bank, most monetarists fall back on the peculiar idea, mentioned above, that every viable monetary standard presupposes that the political authorities follow a policy rule of some type. Under the gold standard, for example, some agency of government must peg the price of gold in terms of the national currency unit.⁶⁸ Hence, in the monetarist view, the practical choice is between a monopoly central bank supplying a nearly costless fiat money and a governmental price-fixing scheme which involves gold or some other commodity and entails high resource costs. As one leading monetarist, Allan Meltzer⁶⁹, formulates the choice:

A gold standard or commodity money standard requires the government to control a price. A monetary rule gives the power to control money to a government monopolist, but limits the monopolist's freedom to set a price or choose a quantity other than the prescribed quantity or growth rate... Economic efficiency is rarely compatible with either price-fixing or monopoly arrangements. Yet, in the case of money, a monopoly central bank can be the most efficient method of producing money.

The principal reasons are that a monopoly central bank lowers the resource cost of the standard by substituting inconvertible paper money for commodity money, by reducing some monitoring or enforcement costs, and by lowering the levels of risk and uncertainty that society bears.

4. Turgot and the Anti-Law Tradition

Turgot was a brilliant eighteenth-century French statesman and economist, as well as a trenchant critic of Law's monetary thought.⁷⁰ In his brief contributions to monetary theory, Turgot set out for the first time the basic outlines of a tradition of monetary analysis which is represented in the U.S. today by the resurgent Austrian school of economics.

⁶⁸ However, lately monetarists have become more willing to contemplate wholly private monetary systems, including specie-based "free" banking arrangements and schemes for competition among private issuers of inconvertible paper currencies. See, for example, Meltzer-1987, pp. 214-17, and Friedman-1987, pp. 373-376.

⁶⁹ Meltzer-1987, pp. 214-218.

⁷⁰ For the best discussion of Turgot's contributions to economic science, see Rothbard-1986.

Turgot flatly rejects Law's primary contention that money is merely an exchange token, whose supply must be manipulated by the political authorities in order to achieve selected policy goals. According to Turgot⁷¹ money is essentially a medium of exchange and the unit in which relative prices are expressed: "These two properties, of serving as a common measure of all values [i.e., the unit in which all prices are expressed] and of being a representative pledge of all commodities of a like value [i.e., the medium of exchange], include all that constitutes the essence and utility of what is called money..."

As Turgot⁷² points out, however, these two functions of money can only be performed by an article which is already widely used, valued, and exchanged under barter: "... all money is essentially merchandise. We can take for a common measure of values only that which has a value, and which is received in Commerce in exchange for other values: and there is no pledge universally representative of a value save another equal value." Since money thus necessarily originates as a useful commodity from within the market economy itself, Turgot⁷³ emphatically denies the possibility that "a purely conventional money" without a pre-existing purchasing power can be imposed from outside the market. According to Turgot⁷⁴, "It is not in virtue of a *convention* that money is exchanged against all other values; it is because money itself is an object of commerce, a part of wealth, because it itself has a value, and in trade all values are exchanged against equal values."

Turgot⁷⁵ argues further that, while almost all commodities may more or less conveniently serve as money, gold and silver have been chosen as the "Universal money" because they possess in the greatest degree the various physical properties which peculiarly suit them to that role. Anticipating early twentieth-century textbook writers, Turgot⁷⁶ gives the following comprehensive list of these properties: a general demand under barter; natural rarity or high inelasticity of supply; a high value to weight ratio; divisibility; durability-, homogeneity of supply; and the ease with which their genuineness and purity may be verified.

As people come to recognize the superior suitability of the precious metals to serve as media of exchange, their individual actions generate a "spontaneous" and self-reinforcing market process by which gold and silver evolve into money. According to Turgot⁷⁷, as market participants become increasingly eager to acquire and hold ready stocks of gold and silver for use in future exchanges, the demands for and market values of these metals are augmented and this very development further enhances their usefulness as media of exchange. In addition, once gold and silver become the universally preferred exchange media and are therefore traded against every other good in the market, the weights of the metals naturally become the units in which all market values or prices are expressed⁷⁸. Contrary to the contention of the monetarists, then, a metallic standard does not require that the political authorities arbitrarily proclaim and fix an exchange rate between some disembodied monetary unit and the standard metal, because the monetary unit itself always evolves on the market as a specific weight of gold or silver.

⁷¹ Turgot-1770/1971, p. 36.

⁷² Turgot-1971, p. 36.

⁷³ Turgot-1770/1971, p. 36.

⁷⁴ Quoted in Rist-1940/1966.

⁷⁵ Turgot-1770/1971, pp. 31-32, p. 36, p. 38.

⁷⁶ Turgot-1770/1971, pp. 37-39; Turgot-1895, p. 207.

⁷⁷ Turgot-1770/1971, p. 40.

⁷⁸ Turgot-1770/1971, p. 38.

Turgot⁷⁹ thus concludes that money is not a creation of law or of human convention, but is the product of a natural market process:

Thus, then, we come to the constitution of gold and silver as money and universal money, and that without any arbitrary convention among men, without the intervention of any law, but by the nature of things. They are not, as many people have imagined, signs of values; they have themselves a value. If they are susceptible of being the measure and pledge of other values, they have a value in Commerce...

It is then as merchandise that coined money is (not the sign) but the common measure of other merchandise, and that not by an arbitrary convention, founded on the glamour of that metal, but because, being fit to be employed in different shapes as merchandise, and having on account of this property a saleable value, a little increased by the use made of it as money, and being besides suitable of reduction to a given standard and of being equally divided, we always know the value of it.

In thus denying that money is merely a "sign of values," which itself possesses only a fictional or representative value, Turgot is challenging Law's contention that money is essentially an exchange token, which is designed to be promptly spent. With his focus on money as the most marketable among all exchangeable goods, Turgot conceives the demand for money in the modern sense of the demand to acquire and hold a stock of cash to employ in future exchanges. Writes Turgot⁸⁰: "Everyone who has a surplus commodity, and has not at the moment any need of another commodity for use, will hasten to exchange it for money; with which he is more sure, than with anything else, to be able to procure the commodity he shall wish for at the moment he is in want of it." Elsewhere, Turgot⁸¹ writes that men "[exchange] all their superfluity for money, and [exchange] money only for the things which are useful or agreeable to them at the moment..."

Moreover, since the same causes, i.e., supply and demand, which determine relative prices among the general array of goods also determine the "price" or purchasing power of money in terms of goods, Turgot flatly rejects Law's central conclusion that there is a tendency for the stock of metallic money to become deficient:

But has it been left to Law to remain ignorant that gold falls in value like everything else by becoming more plentiful? If he had read and studied Locke... he would have known that all the commodities of a country are balanced between themselves, and with gold and silver, according to the proportion of their quantity and the demand for them; he would have learned that gold has not a value which corresponds always to a certain quantity of merchandise, but when there is more gold it is cheaper, and one gives more of it for a determinate quantity of merchandise; that thus gold, when it circulates freely suffices always to the need of the State, and that it becomes a matter indifferent to have one hundred millions of marks or one million, if we are to buy all commodities dearer in the same proportion.

In this passage Turgot enunciates one of the most important policy implications of sound monetary theory, namely, that any quantity of money always provides the full utility of a medium of exchange to society, and, therefore, an increase in the nominal quantity of money can yield no increase

⁷⁹ Turgot-1770/1971, p. 39; Turgot-1895, p. 207.

⁸⁰ Turgot-1770/1971, p. 39.

⁸¹ Turgot-1770/1971, p.42.

in social welfare. As Turgot points out, all that results from inflating the supply of money is a fall in the purchasing power of the monetary unit and a corresponding rise of the scale of prices in the economy.

Turgot's emphasis on the medium of exchange as the universally demanded and supplied "merchandise" leads him to a double-barrelled critique of the price stabilization schemes championed by Law and the Simons-Friedman Chicago school. First, Turgot argues that money as the most saleable commodity naturally possesses a market value which is not constant but varies in response to changes in market conditions. Writes Turgot⁸²:

This value [of money] is susceptible of change, and in fact does change continually; so that the same quantity of metal which corresponded to a certain quantity of such or such a commodity ceases to correspond to it, and more or less money is needed to represent the same commodity...

A thousand different causes concur to fix at each moment the value of commodities when compared either with one another or with money, and to cause them to change incessantly. The same causes determine the value of money, and cause it to vary when compared, either with the value of each particular commodity, or with the totality of the other values which are actually in Commerce.

Second, not only are fluctuations in the "price level" a natural outcome of a free market in money, but, according to Turgot, such fluctuations are the indispensable means by which the market is continually adjusting the purchasing power of the monetary unit to avoid an excess demand or supply of money. Indeed, as Turgot⁸³ points out, Law's (and later, the Friedmanites') contention that the resource costs of adding to the supply of metallic money far exceeds the costs of increasing a paper fiat currency is a false issue, precisely because such increases in the "nominal" supply of money are obviated by the fact that an increase in the overall demand for money is costlessly accommodated by the market via a general fall in prices and the attendant increase in the total purchasing power of the existing supply of money. It is, therefore, the very policies of the price-level stabilizationists, themselves, which frustrate and incapacitate the market's efficient means of equilibrating the supply of and demand for money and, in the process, impose on society the much higher costs of the economic distortions invariably associated with political manipulation of the money supply.

This brings us to another flaw which Turgot identifies in schemes to issue paper money. With brilliant insight, Turgot⁸⁴ argues that the very issuance of paper money would interfere with and distort the sensitive market process by which the existing money stock is allocated among the public according to their individual demands to hold cash. These demands are by their very nature subjective, ever-changing, and therefore unknown to the money issuers. In the words of Turgot⁸⁵: "Gold and silver themselves, regarding them only as signs [*i.e.*, media of exchange], are, by the fact of their very circulation, actually distributed among the public according to the proportion of the commodities, of the industry, lands, and real wealth of every kind existing. Now this proportion can never be primarily known, because it is hidden, and because it varies continually by a new circulation. The king will not proceed to distribute his paper-money to each person in the proportion that he holds gold and silver money..."

⁸² Turgot-1770/1971, p. 40-41.

⁸³ Turgot-1895, pp. 206-207.

⁸⁴ Turgot-1895, p. 208.

⁸⁵ Turgot-1895, p. 208.

In the language of modern monetary theory, Turgot is arguing in this passage that money is "nonneutral" and that every injection of new money into the economy is inevitably accompanied by "distribution effects" or redistributions of income and wealth among individual economic agents. This insight of Turgot's is the starting point of the tradition of monetary process analysis which eventually culminated in the development of the Austrian theory of the business cycle. One of the most important implications of this theory is that any attempt by central banks to stabilize prices by adding to the quantity of money through the expansion of commercial bank reserves and business loans will invariably result in distortions of interest rates and relative prices, malinvestments of capital, and, ultimately, economy-wide recession or depression. Thus for Turgot and modern Austrians it is not the mild fluctuations in the price level which would occur under a full-bodied gold standard but the attempt to endow money with a chimerical neutrality which leads to disorderly money and discoordinated economy.

Accordingly, in sharp contrast to Law and modern proponents of managed money, Turgot is an implacable foe of fractional reserve banking. He argues that note-issuing and deposit-taking by fractional-reserve banks are fundamentally unsound and are not just another species of free-market credit relations. There exists a qualitative difference between the credit granted by lenders to private business and the "credit" granted by depositors or noteholders to fractional-reserve banks, because inherent in the operation of the latter institutions is the temporal mismatching of assets and liabilities. According to Turgot⁸⁶:

[Business credit] necessarily supposes an exchange at the term foreseen and fixed in advance; for if the [merchant's] bills were payable at sight, the merchant would not be free to turn to use the money he had borrowed. Thus it is a contradiction of terms for a bill at sight to bear interest, and such a credit cannot exceed the capital of the borrower... In a word, every credit is a borrowing, and has an essential relation to its repayment... A merchant who would buy goods to tenfold his capital and who would pay for them by notes, payable to the bearer, would soon be ruined ...⁸⁷

Finally, Turgot's emphasis on money's function as a "common measure of all values" and, therefore, as a tool of economic calculation, combined with his profound insight into the vital role of monetary calculation and money capital in orienting and driving the social production process, suggests a criterion that is relevant to the modern search for sound money.

⁸⁶ Turgot-1895, pp. 204-206.

⁸⁷it is noteworthy that Turgot's staunch opposition to fractional-reserve banking places him squarely in the mainstream of eighteenth-century monetary thought, which can be interpreted as a reaction against Law's writings and schemes. Theorists such as Isaac Gervaise, Jacob Vanderlint, David Hume, and Joseph Harris argued that the extension of credit by fractional-reserve banks was economically destructive, while Richard Cantillon deeply distrusted banks and held that they added negligibly to aggregate real income (Salerno-1980, pp. 71-193, *passim*). Adam Smith (Smith-1776/1937, p. 302), in sharp contrast to these writers, sought to rehabilitate some aspects of Law's thought, lauding Law's "splendid, but visionary ideas" while complaining of the "excess of banking" [my emphasis] to which they contributed. For Smith (Smith-1776/1965, p. 305), "the judicious operations of banking," which would substitute the notes and deposits of competitive "free" banks for specie money, would "very considerably" increase resource productivity and output by providing a metaphorical "waggon-way through the air" to replace the costly highway made of gold and silver. For a discussion of the influence of Law on Smith and its deleterious effect on later British monetary theory, see Rist (Rist-1940:1966, pp. 84-85, p. 323).

According to Turgot⁸⁸, "all labours, whether for agriculture or for industry, require advances [of capital] ... capitals are the indispensable foundation of every undertaking..." In other words, capitalist-entrepreneurs must save and accumulate a fund of capital in order to pay in advance for the resources necessary to promote and sustain an enterprise whose output emerges only after a lapse of time from the initial investment of resources in the production process. The introduction of money has enormously simplified and facilitated the task of saving and accumulating capital. Anyone - landowner, laborer, or entrepreneur - can undertake the accumulation of capital by saving out of his monetary income. As the generally acceptable medium of exchange, money may be invested in agriculture or any other type of production process. Capital of any kind thus comes to be universally evaluated and calculated in terms of money. As Turgot⁸⁹ states "... it is absolutely indifferent whether this sum of values or this capital consists in a mass of metal or anything else, since the money represents every kind of value, just as every kind of value represents money."

It is the competitive bidding among entrepreneurs to acquire the means of production via what Turgot calls "advances" of money capital that establishes the current money prices for the various kinds of resources. Thus, for example, the prices of land resources "... are always easily determined in the same manner as the price of all other commodities; that is ... in accordance with the current price established by the competition of those who wished to exchange lands for cattle and of those who wished to part with cattle in order to get lands".⁹⁰

In the case of land rents, Turgot⁹¹ theorizes that "The competition of rich Undertakers in agriculture fixes the current price of leases..." Consistent with his analysis of the determination of the price of consumer goods⁹², Turgot⁹³ views catallactic competition among entrepreneurs as the driving force leading to the emergence of a market-clearing price for land services, with "the Proprietor only letting his land to him who offers the highest rent." Finally, in the labor market, although sellers' competition establishes a market-clearing wage rate "less then [the laborer] would like," the competition is never so intense as to prevent the more "active" and "expert" workers in all fields from earning a price for his labor in excess of subsistence for himself and his family and accumulating wealth⁹⁴.

These resource prices, of course, ultimately reflect entrepreneurial appraisements of the future sale prices of the array of consumer products, because, as Turgot⁹⁵ points out, "The Undertakers [*i. e.*, the capitalist-entrepreneurs or promoters], either in the cultivation of land or in Manufactures, get back their advances and their profits only from the sale of the fruits of the earth or of the manufactured commodities. It is always the wants and the means of the Consumer that set the price at sale..." We may thus reasonably infer from Turgot's discussion that the competitive process yields a structure of

⁸⁸ Turgot- 1770/1971, p. 51, p. 64.

⁸⁹Turgot-1770/1971, p. 51.

⁹⁰ Turgot-1770/1971, p. 48. In this example, Turgot uses cattle to represent what he calls "moveable wealth," which functioned as a quasi-money and in which form capital was accumulated and advanced to resource owners during the era preceding the emergence of a universal medium of exchange.

⁹¹ Turgot-1770/1971, p. 56.

⁹² Turgot-1770/1971, pp. 29-30.

⁹³ Turgot-1770/1971, p. 56.

⁹⁴ Turgot-1770/1971, p. 44.

⁹⁵ Turgot-1770/1971, p. 58.

market-clearing input prices that is coordinated with respect to entrepreneurial expectations of future output prices and, thereby, insures full utilization of scarce productive resources.

Current resource prices, although established by the competitive bidding of all entrepreneurs, are taken as data in the monetary cost and profit calculations that inform the production decisions of the individual entrepreneur in any branch of production. Turgot⁹⁶ gives explicit recognition to the all-important role of monetary calculation in guiding production decisions. The decision to lease land and undertake an agricultural enterprise, for example, is made "... according to the calculation the Farmers make, both of their expenses and of the profits they ought to draw from their advances..." Likewise, the commercial entrepreneur ascertains the money prices of merchandise at various locations and "... directs his speculations accordingly; he sends the commodities from the place where they bear a low price to those where they are sold for a higher; it being understood, of course, that the expense of carriage enters into the calculation of the advances which have to return to him."

Furthermore, as Tugot⁹⁷ continually reiterates, in calculating the prospective profitability of a given enterprise, all entrepreneurs count as costs, in addition to their money expenditures on the factors of production, the foregone money revenue based on the rate of return on capital investment, or, in Wicksellian terminology, "the natural rate of interest" which can be earned in alternative branches of production. Turgot⁹⁸ recognizes, moreover, that, in the long run, the natural rate of interest on investment in various processes of production and the rate of interest on loans "preserve a kind of equilibrium."

In a stroke of methodological genius, Turgot concludes his analysis of the monetary aspects of the production process by focusing on an economy in the fictional state of long-run equilibrium and identifying the vital role played by the regularly recurring accumulation and investment of capital guided by monetary calculation. Writes Turgot⁹⁹:

We see... how that the cultivation of land, manufactures of all kinds, and all branches of commerce depend upon a mass of capitals, or of moveable accumulated riches, which having been at first advanced by the Undertakers in each of these different classes of labours, must return to them every year with a steady profit; that is, the capital to be again invested and advanced anew in the continuation of the same enterprises, and the profit to provide for the more or less comfortable subsistence of the Undertakers. It is this advance and this continual return of capitals which constitute *what one must call the circulation of money*; that useful and fruitful circulation which gives life to all the labours of the society, which maintains movement and life in the body politic, and which is with great reason compared to the circulation of blood in the animal body.

Thus, in Turgot's view, monetary calculation tends to insure that capital investment and productive resources are allocated among the various branches of production strictly in accord with consumer preferences as expressed in the pattern of expenditures on the array of consumer products. In appropriating from Law the term "circulation of money" and emphatically redefining it to signify the process of monetary saving and investment that initiates and sustains round after endless round of

⁹⁶ Turgot-1770/1971, p. 56, p. 62.

⁹⁷ Turgot-1770/1971, p. 53, pp. 55-56, p. 57, p. 61.

⁹⁸ Turgot-1770/1971, pp. 83-85.

⁹⁹ Turgot-1770/197 1, pp. 62-63.

productive activity in the evenly rotating economy, Turgot seeks to depict the complex and unique link between money and capitalistic production.

According to Turgot¹⁰⁰:

... before the introduction of gold and silver in commerce... it was almost impossible to accumulate considerable capitals, and still more difficult to multiply and divide payments, as much as is necessary to facilitate and multiply exchanges to the extent which is demanded by a thriving commerce and circulation [of capital] ... In fact, almost all savings are made in nothing but money; it is in money that the revenues come to the proprietors, that the advances and the profits return to undertakers of every kind; it is, therefore, from money that they save, and the annual increase of capitals take place in money: but none of the undertakers make any other use of it than to convert *it immediately* into the different kinds of effects upon which their undertaking depends; and thus this money returns to circulation, and the greater part of capitals exists only in effects of different kinds...

It is quite clear, therefore, that, despite his recognition of and emphasis upon the link between money and production, Turgot avoids falling into the error, common to Law and his latter-day followers, of supposing that it is the brute fact of spending money that drives production. For Turgot¹⁰¹ it is the finely-balanced order in which expenditures take place ("l'ordre des dépenses") which coordinates and maintains the social structure of capital and production. Once allow "disorder" or discoordination "in the sequence of expenditures" and the result is the disappearance of profits and the reduction of business enterprises, employment, consumption, production, and income.

The criterion for sound money that is derived from Turgot's work, therefore, centers upon money's role as a tool of economic calculation which serves the entrepreneurial function of allocating capital and coordinating the uses of productive resources in light of anticipated consumer preferences.

In the postwar era, Turgot's insights and ideas on money and banking have been developed most fully by monetary theorists associated with the Austrian school of economics. These include most notably Ludwig von Mises and Murray N. Rothbard.¹⁰²

Turgot's influence on modern Austrians was primarily transmitted via Carl Menger, the nineteenth-century co-discoverer of marginal utility theory and founder of the Austrian school of economics. Menger, whose knowledge of the preceding economic literature was encyclopedic¹⁰³, was especially familiar with and influenced by the eighteenth-century Franco-Italian tradition that began with Richard Cantillon, and included, along with Turgot, the Abbe Condillac and Ferdinando Galiani. This tradition culminated in the work of J.B. Say, which exercised an enormous influence on Continental economics throughout the nineteenth century. Thus Menger absorbed the Cantillon-Turgot-Say tradition directly, as we can see from the footnotes and appendices to his *Principles of Economics* [1950/1981], and indirectly, through his study of early nineteenth century German

¹⁰⁰ Turgot-1770/1971, p. 64, p. 98.

¹⁰¹ Turgot-1770/1971, p. 63.

¹⁰² Friedrich Hayek's stream of brilliant contributions to Austrian business-cycle and international monetary theory, for which he was awarded a share of the Nobel Prize in Economics in 1974, began to flow forth in 1925 but had come to an end by 1940. Hayek's contributions are contained in the following works: Hayek-1933/1966; Hayek-1935/1967; Hayek-1937/1971; Hayek-1939/1969; Hayek-1984.

¹⁰³ Hayek-1981, p. 14.

economists, such as Karl Heinrich Rau and Friedrich B.W. Hermann, whose theoretical approach was derived from Say.

Not surprisingly, Menger's most important contribution to monetary theory was the development of a rigorous theoretical explanation of the catallactic origin of money, the germ of which is to be found in Turgot's brilliant insight, noted above, that money is not created from outside the market by "an arbitrary convention" but evolves as "merchandise" with a "saleable value" that is originally determined under the preexisting state of barter. In fact, Menger¹⁰⁴ cites Turgot as one of three eighteenth-century writers who decisively rejected the long-held theory of Aristotle which "... traces the origin of money to a contract between men. "

Menger's second contribution to Austrian monetary theory is his formulation of the demand for money as the sum of individual demands to *bold a* stock of cash in order to finance anticipated transactions. Moreover, among the three economists - Menger, Leon Walras, and Alfred Marshall - generally credited with priority in independently and fully articulating the cash balance approach to the demand for money, Menger alone seems to have possessed the depth of insight to explicitly reject the concept of the velocity of circulation of money and to avoid falling into the trap of treating velocity as the inverse of the demand for money.¹⁰⁵

Despite the fact that he was familiar with Cantillon's much praised discussion of the "rapidity of circulation of money"¹⁰⁶, Turgot, as we saw above, also eschewed any reference to velocity as a factor in determining the value of money, instead suggesting an analysis that runs strictly in terms of the individual's desire to maintain a reserve of the exchange medium.

Also, like Turgot, Menger emphasizes that no exchangeable good, including money, can ever possess a stable purchasing power and proceeds to demonstrate the fallacy of supposing that money is a measure of value and that it is possible to devise a theoretically unexceptionable statistical index of the general price level.¹⁰⁷ Finally, Menger seeks to rehabilitate the Turgotian concept of capital as the monetary appraisal of the aggregate of goods an individual devotes to producing with the aim of acquiring a monetary income.¹⁰⁸ For Menger, then, the capital concept is inextricably entwined with the concept of monetary calculation: it is "the productive property, whatever technical nature it may have, so far as its money value is the subject of economic calculation, that is, if it appears in our accounting as a productive sum of money".¹⁰⁹

Eugen von Böhm-Bawerk is generally not credited with any contribution to monetary economics. In fact, Böhm-Bawerk¹¹⁰ even criticized Menger's identification of capital with the monetary valuation of an individual's income producing property as prescientific and "a leaning toward the mercantilistically colored speech of everyday life."¹¹¹

¹⁰⁴ Menger-1950/1981, p. 318.

¹⁰⁵ Marget-1938-1942/1966, Vol. I: p. 297, Vol. 2: p. 59; Sennholz-1985, p. 22.

¹⁰⁶ Cantillon-1931/1964, pp. 127-149.

¹⁰⁷ Roll-1936, pp. 457-458.

¹⁰⁸ Hayek-1981, p. 28.

¹⁰⁹ Hayek-1981, p. 28.

¹¹⁰ Böhm-Bawerk- 1959, pp. 50-53.

¹¹¹ It was left to Mises (Mises- 1966, pp. 259-264) to demonstrate that the Mengerian concept of capital as the correlative of monetary income for calculation purposes and the Böhm-Bawerkian concept of capital goods as the produced means of production are both indispensable to the elaboration of economic theory.

Nevertheless, Böhm-Bawerk initiated the development of the modern Austrian emphasis on the central role of monetary calculation in guiding the social production process. Böhm-Bawerk's exposition of the "law of costs," in which he presents a causal explanation of the determination of the prices of the factors of production, is based on the explicit recognition that money functions as "the neutral common denominator for the otherwise noncomparable needs and emotions of different individuals".¹¹² Like Turgot, with whose work he was intimately familiar,¹¹³ Böhm-Bawerk stresses the pivotal role of competition among capitalist-entrepreneurs in appraising the monetary value of productive factors in light of the prices of consumer goods. The establishment of an integrated structure of money prices for all consumer and producer goods, which results from this competitive process, enables entrepreneurs to calculate and compare the expected costs and revenues of alternative productive ventures, and the prospect of maximum profit leads them to rationally allocate resources in the service of the most urgent of future consumer demands.

Thus, for Böhm-Bawerk¹¹⁴, it is monetary calculation which insures that the causal processes described by the "law of costs" are "in strictest conformity with" the law of marginal utility. Accordingly, Böhm-Bawerk¹¹⁵ emphasizes: "*Even the originary productive powers of the nation [i.e., land and labor] are forced into uses in the order of profitability and receive their value and their price from the last of them ... [I]n the end every want will attract the productive powers it requires, directly or indirectly, and in proportion to the powers of attraction inherent in its [monetary] 'valuation figures'.*"

Elsewhere, Böhm-Bawerk¹¹⁶ writes:

To meet... practically unlimited demand we have a labor power which in comparison with this demand is always limited. It is never sufficient to satisfy all our desire... we must, therefore, always choose which of our desires we will gratify. Under the influence of self-interest we will satisfy them according to the height or the amount of the fee which we are willing to pay for their satisfaction... The existing productive power is ... fully employed in the satisfying of those wants, for whose satisfaction we are willing and able to pay [the equilibrium money wage rate] ... The fact that there are always a number of laborers out of employment tells in no way against my contention; it is a result, not of an excess of labor force, but of those never-failing disturbances of the organization of the entire, yet insufficient, supply of labor forces.

The foregoing passages contain the seeds of the concept of "price coordination" which undergirds the macroeconomic theorizing of the modern Austrian school.¹¹⁷ According to this concept, the competitive market process, guided by monetary calculation and unhampered by political interventions, *always* appraises and prices scarce resources so as to insure that they are fully employed in those uses anticipated by entrepreneurs to be most value-productive from the point of view of consumers.

¹¹²Böhm-Bawerk-1959, p. 250.

¹¹³ In the first volume of *Capital and Interest*, Böhm-Bawerk (Böhm-Bawerk-1959, pp. 39-45) devoted a chapter of critical analysis to Turgot's theory of interest, dismissing it as involving circular reasoning. Nonetheless, an earlier and yet unpublished seminar paper written by Böhm-Bawerk indicates that Turgot had an "enormous influence" on him (Rothbard-1986, p. 21)

¹¹⁴ Böhm-Bawerk-1959, p. 255.

¹¹⁵ Böhm-Bawerk-1959, pp. 253-54.

¹¹⁶ Böhm-Bawerk-1962, pp. 355-356.

¹¹⁷ Salerno-1991.

Böhm-Bawerk, in fact, went far beyond Menger and Wieser and other contemporary marginal-utility theorists in explaining the catallactic phenomena of *money* costs and of the allocation of resources according to monetary calculation.¹¹⁸ Böhm-Bawerk's great concern to elucidate the causal link between individuals' subjective value rankings and the social, objective, and cardinal phenomena of money prices and costs has left an indelible imprint on the efforts of later Austrians to develop a criterion for sound money which highlights money's role as a tool of economic calculation.

Mises¹¹⁹, the acknowledged founder of modern Austrian monetary theory, surely had Böhm-Bawerk¹²⁰ foremost in mind when he wrote:

Only the reduction of the concept of cost to its ultimate basis, as carried out by the theory of marginal utility, brings the social aspect of economic action entirely into view.

Within the field of modern economics the Austrian School has shown its superiority to the School of Lausanne and the schools related to the latter, which favor mathematical formulations, by clarifying the causal relationship between value and cost, while at the same time eschewing the concept of function, which in our science is misleading. The Austrian School must also be credited with not having stopped at the concept of cost, but, on the contrary, with carrying on its investigations to the point where it is able to trace back even this concept to subjective value judgments.

Mises's discovery that the intellectual operation of monetary calculation based on market prices is the indispensable precondition for the existence of the social division of labor, which underlies his famous critique of socialism¹²¹, takes as its point of departure the Böhm-Bawerkian elaboration of the law of costs. In his development of monetary theory proper, as opposed to the theory of monetary calculation, Mises's work can be characterized as "the direct continuation of Menger's work".¹²² As Mises's student, Rothbard has made original contributions to the theories of money and monetary calculation¹²³, which also lie squarely within the Turgot-Menger tradition.

¹¹⁸ In Menger's work, "...the role that cost of production plays in determining the relative value of different commodities is not explicitly explained" (Hayek-1981, p. 19). Wieser's work is marred by a peculiar and fruitless attempt to derive the principles of value and cost imputation from the analysis of a nonmonetary, communist economy (Wieser-1893/1971). For this, among other reasons, Mises (Mises1978, p. 36) writes concerning Wieser: "His imputation theory is untenable. His ideas on value calculation justify the conclusion that he could not be called a member of the Austrian School, but rather was a member of the Lausanne school...,"

¹¹⁹ mises-1960/1981, p. 165.

¹²⁰ Although Menger's *Principles* had an admittedly formative influence on him (mises-1978, p. 33), Mises (Mises-1990,a, p. 133) considers Böhm-Bawerk's three-volume *Capital and Interest* "no doubt ... the most eminent contribution to modern economic theory." "Especially important" to Mises (mises1990, p. 134) is the third book of the second volume which contains Böhm-Bawerk's exposition of value and price theory, including the law of costs. Despite the fact that he was a student of Wieser's and exhibited a general methodological stance more reflective of Lausanne than of Vienna, Schumpeter (1965, p. 159, p. 171) concurs with Mises in his appraisal of Böhm-Bawerk's contribution: "His theory of price is still the best we possess [as of 1914], the one that best answers all fundamental problems and all basic difficulties... [The] 'theory of imputation'... owes to Böhm-Bawerk one of its most perfect formulations." Finally, Hayek (Hayek-1952, p. 558) notes that the Austrian formulation of the subjective value doctrine "... including the theory of cost, was largely the result of Böhm-Bawerk's brilliant exposition," which went beyond Menger and Wieser "in matters relating to price."

¹²¹ Mises-1991.b.

¹²² Hayek-1981, p.31

¹²³ Rothbard makes three contributions of the first rank to the theory of monetary calculation. He definitively demonstrates that the social appraisal process operative in an unhampered market economy cannot give rise to

It is in the writings of Mises and Rothbard, therefore, that we find the most sophisticated and complete rejection of the Law tradition. In his regression theorem, Mises¹²⁴ takes Menger's explanation of the emergence of money to its logical conclusion, demonstrating the utter impossibility of the origination of money by government fiat or explicit social contract. Money can never spring into existence as a product of convention or as a ready-made tool of government policy; it always evolves as a catallactic institution.

Rothbard¹²⁵ builds on Mises and Menger in formulating what may be called a "progression theorem" of fiat money, a historico-logical account of how paper fiat money can and does come into being only as the result of a long series of government interventions which progressively undermines the market-evolved commodity standard.¹²⁶ One important implication of Rothbard's theorem for monetary reform is that there is no possibility of replacing a government monopolized fiat money with schemes for competing private inconvertible paper currencies. The reason is that the established fiat money, barring a hyperinflationary crackup, retains an indissoluble evolutionary link with the original commodity money by virtue of its position as the universally employed unit of price appraisalment. For Mises¹²⁷ and Rothbard¹²⁸, then, the only sure route to eventually denationalizing the money supply is to redefine the existing fiat monetary unit as a specific weight of gold, the market-chosen medium of exchange.

Following Menger, Mises¹²⁹ and Rothbard¹³⁰ are consistent adherents of the cash-balance approach, which builds up the market demand for money directly from the subjective valuations of money holdings by individual economic agents. They explicitly reject the common emphasis of neo-Keynesians, monetarists, and supply-siders on spending money in the practical explanation of overall price and output variations. In their view, the value or purchasing power of money is determined within the same market process which, driven by individuals' subjective valuations and entrepreneurial

a monopolistic misallocation of resources which contradicts Böhm-Bawerk's law of costs (Rothbard-1962/1970, pp. 604-15). He shows that a free-market cartel is strictly limited in size by the necessity that everyone of its capital-good inputs possesses a market price for use in economic calculation. Thus, according to Rothbard (Rothbard-1976, p. 75-76.), no cartel can sustain expansion to the point at which it subsumes the entire market for a particular capital good - let alone the entire economy - because the result would be calculational chaos and economic inefficiency, which is inconsistent with the cartel's goal of maximum profit. Finally, Rothbard (Rothbard-1975, pp. 37-38) establishes that, under a pure commodity money, changes in the supply of money are incapable of falsifying monetary calculation and creating the resultant intertemporal discoordination in the production structure which typifies an Austrian-type business cycle.

¹²⁴ Mises-1934/1981, pp. 129-136.

¹²⁵ Rothbard-1963/1990.

¹²⁶ Early Austrians such as Menger (Menger-1950/1981, p. 320) and Wicksteed (Wicksteed-1932/1967, 2 pp. 618-623) implied that the existence of a pure fiat money is impossible on theoretical grounds. Wieser (Wieser-1927/1967, pp. 270-272) attempted to establish the possibility of a paper fiat money "for which the mass habit of acceptance has been historically formed," arguing by analogy that a historically-evolved commodity money that had ceased to be used for industrial purposes would continue to function as a medium of exchange. Mises's regression theorem finally and rigorously established the logical possibility of a fiat money. However, even as late as 1966 in the third edition of *Human Action* (Mises-1966, p. 429), Mises expresses uncertainty as to whether conditions giving rise to a pure fiat money ever existed historically.

¹²⁷ Mises-1934/1981, pp. 477-500.

¹²⁸ Rothbard-1985, pp. 1-17.

¹²⁹ Mises-1966, pp. 398-478.

¹³⁰ Rothbard-1962/1970, pp. 661-764.

expectations, generates the array of goods' prices - is in fact the reciprocal of this array. They therefore argue that the objectified, acatallactic, and holistic concept of velocity of circulation of money, the defining element of the monetarist theoretical approach, is superfluous at best and misleading at worst in analyzing the determination of the value of money.

Nor is their room in modern Austrian monetary theory for the neo-Keynesian postulate of a Phillips curve trade off between inflation and unemployment. Such a tradeoff can only be alleged if one ignores the price coordinating feature of the social appraisal process by which resource prices are derived from and adapted to entrepreneurial forecasts of future output prices. From this standpoint, a price deflation, far from being an antisocial event to be feared and fought via the printing of monopoly fiat money, is the market's response to an increase in the social demand for money due, for example, to a growth in real output or to greater uncertainty of the future. Such a change in preferences to acquire and hold money, no less than any other type of alteration in consumer preferences, precipitates a market adjustment process which tends to reappraise and reallocate productive resources according to the Böhm-Bawerkian law of costs. Barring laws mandating minimum wage rates or collective bargaining privileges for labor unions, there is no reason for the operation of this process to produce "involuntary" unemployment of the Keynesian type.¹³¹

Their emphasis on the central role of monetary calculation in guiding entrepreneurial production decisions in a world marked by ceaseless flux in the constellation of consumer preferences, production techniques, and resource availabilities explains the reluctance of modern Austrians to enshrine "stability" whether it be of monetary growth rates, selected commodity prices, the rate of growth of total spending, etc. - as the goal of the monetary system. In the Austrian view, the market economy owes its existence and success not to money's alleged role in insuring macro-stability, but to its usefulness as a tool enabling market participants to interpret and adjust to the change that pervades human life and action.

Mises¹³² says that "The market economy is real because it can calculate." The market economy offers the only means by which individual human beings, cooperating in the social division of labor, are enabled, through calculated action, to continually alter the anticipated course of future events in a way which they judge will effect an improvement in their satisfaction or welfare. Thus, for example, money is a tool of economic calculation for entrepreneurs seeking to profit by constantly readjusting production to expected changes in consumer wants, in technical know-how, and in the quantities and qualities of the available resources. It is the ever-changing structure of money prices that provides the data for entrepreneurs' calculations of profit and loss and, thereby, gives meaning and direction to their plans and efforts.

The market-clearing property of these prices, moreover, insures that, at every moment of time, the monetary calculations of independent and competing entrepreneurs are capable of producing an integrated structure of resource uses strictly and deftly governed by the expected demands of consumers. This is the meaning of Mises's statement that "The coordination of the autonomous actions of all individuals is accomplished by the operation of the market".¹³³

As a creation of and aid to human reason and action, therefore, monetary calculation always and everywhere aims to alter the future to achieve greater satisfaction. As a never-ending sequence of

¹³¹ Salerno-1991, pp. 335-340.

¹³² Mises-1966, p 259.

¹³³ Mises-1966, p 725.

calculated and coordinated actions, the evolution of the market economy represents an irreversible historical process which, at every point, originates change at the same time that it seeks to adapt to it. Monetary calculation, then, as the lodestar of the dynamic market process, is the conceptual antipode of monetary stability. There is no possibility of ever truly "stabilizing" any economic quantity, without falsifying or abolishing monetary calculation and undermining or destroying the market economy.

In questing for sound money, the modern Austrian, then, is seeking not after "macroeconomic stability," however that is to be interpreted, but after a money that will optimally serve the purpose of economic calculation. In the Austrian view, hyperinflation exemplifies the extreme case of unsound money, because when prices rise at astronomical and unforeseeably changing rates, there is no prospect of, making reasonable appraisements of future output prices. Consequently, the time horizon of entrepreneurial forecasts is artificially and severely foreshortened and the resulting competitive price bids for resources come to reflect only the value of resource uses in production processes geared to serving consumer demand in the immediate future, for example, in consumer services, in the wholesale and retail ' trades, and in various speculative enterprises. Since the social appraisal process is incapable to taking account of the monetary value of resource contributions to relatively time-consuming processes, the economy's structure of production cannot be coordinated with the pattern of consumer preferences for satisfaction in the present and future. Under these conditions, industrial processes, especially those involving the production of business structures and durable capital equipment, grind to a halt.

When the hyperinflation reaches its final stage, the public refuses to accept the depreciated money on any terms in exchange for "real" goods, monetary exchange disappears, and the economy collapses into a state of barter in which the very possibility of a unitary price appraisal process and economic calculation is precluded. In these circumstances, the rational allocation of resources to production for the market and, therefore, the social division of labor are practically abolished.

A less extreme but much more insidious instance of unsound money distorting the social appraisal process and temporarily nullifying the conditions of operation of Böhm-Bawerk's law of costs occurs whenever new money in the form of "fiduciary media," i.e., checkable deposits and, in an earlier era, banknotes unbacked by cash reserves, is injected into the economy via the institution of fractional-reserve banking. This species of unsound money is a universal characteristic of modern monetary regimes, in which central banks routinely inflate their respective national money supplies through the creation of additional bank reserves, inducing the fractional-reserve banking system to engage in a multiple expansion of their loans and deposits.¹³⁴ In fact, the Austrian theory of the business cycle is the explication of the process by which the creation of fiduciary media inevitably distorts the social appraisal process and leads to a situation in which the entrepreneurial allocation of resources among production processes spanning different time periods systematically diverges from society's intertemporal consumption preferences.¹³⁵

It is their overriding concern with the twin issues of economic calculation and coordination which leads modern Austrians to prescribe the abolition of a politically monopolized fiat money. They recognize that the potential for hyperinflation inherent in such a money threatens the calculational basis and, hence, the very existence of market society. Austrians are not only opposed

¹³⁴ Rothbard-1983, pp. 127-177.

¹³⁵ Mises-1966, pp. 538-586; Rothbard-1975, pp. 11-38.

to the central bank qua monopoly issuer of fiat currency, however; they also object to a commodity money standard which is dominated by a central bank, for example, the classical gold standard as it operated in Great Britain before 1914. The Austrian case against the latter type of monetary arrangement rests, to a great extent, on Rothbard's progression theorem, which identifies the central bank as the prime institutional means for effecting the progressive transformation of the monetary unit from a fixed weight of a market-supplied commodity to a pure name. The disembodied monetary unit then can be affixed to an almost worthless object and multiplied, practically without cost and limit, by political fiat.

While modern Austrians tend to be of one mind in their evaluation of central banks and state-issued fiat money, they are divided in their attitude toward private fractional-reserve or "free" banking. Some adopt the Smithian position in support of a purely private and unregulated banking system based on gold reserves and featuring competitively determined reserve ratios. Others follow Turgot in advocating the total suppression of fiduciary media via the one hundred percent gold standard. Mises¹³⁶, himself, presented a vigorous defense of goldbased free banking in 1949, arguing that it is "the only method available" for preventing the economic discoordination attendant upon the creation of fiduciary media. Only three years later, however, Mises¹³⁷ was recommending "a rigid 100 percent [gold] reserve for all future deposits" as a means of permanently eliminating any further bank credit expansion.

Basing himself on Mises and the nineteenth-century American antibank tradition, which was linked to Turgot via the French philosopher and economist, Count Destutt de Tracy,¹³⁸ Rothbard¹³⁹ presents the most sophisticated case for one hundred percent-reserve banking based on gold.

Lately, a number of younger Austrians, particularly George Selgin and Lawrence White, have elaborated the Misesian case for free banking in greater detail. However, one can detect in their work a significant shift of orientation away from Mises's original goal of preserving the integrity of monetary calculation by stanching as much as possible the outpouring of fiduciary media onto credit markets. For Selgin and White, the desirability of free banking rests on its alleged usefulness as a means for sensitively regulating the creation of fiduciary media in a manner which is consistent with the preservation of "stability," of the aggregate spending flow¹⁴⁰ and, above all else, of the fractional-reserve banking industry itself.¹⁴¹

In conclusion, modern Austrian monetary thought, with its roots in the Turgot tradition and emphasizing the macroeconomic phenomena of entrepreneurial calculation and price coordination,

¹³⁶ Mises-1966, p. 443.

¹³⁷ Mises-1952/1981, p. 491.

¹³⁸ For a discussion of the French roots of the tradition of hostility to fractional-reserve banking in nineteenth-century American economic thought, see Salerno-1987, pp. 140-143.

¹³⁹ Rothbard-1962/1974.

¹⁴⁰ Selgin-1988, pp. 52-69; Selgin-1989, p. 4; White-1989, pp. 158-159.

¹⁴¹ 141 Selgin-1988, pp. 133-139; White-1984, pp. 137-150. Selgin (Selgin-1988, pp. 60-63) rejects the central implication of Austrian business-cycle theory that any creation of new fiduciary media, without fail, precipitates an inflationary discoordination of the economy which must culminate in crisis and depression. In Selgin's view, the credit and deposit expansion which would occur under free banking in response to an increased demand for cash balances is perfectly consistent with the preservation of "monetary equilibrium," defined as an unchanged flow of aggregate spending. Selgin's position on this matter serves to accent the shift of focus from economic calculation to stability among current Austrian-oriented proponents of free-banking.

stands in radical opposition to the modern macroeconomic schools of thought, whose monetary doctrines have been molded within the Law tradition.

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