Gresham’s Law and the Modern Theory of the Demand for Money

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I. Introduction

Gresham’s Law—the observation that good (undervalued) money tends to be driven from circulation by bad (overvalued) money—is believed to have been stated, in one form or another, since the time of ancient Greece. Early statements of what later became known as Gresham’s Law were concerned with the problems caused by wear, clipping, or debasement of coins. Although the Law was originally attributed to Sir Thomas Gresham, based on his correspondence with Queen Elizabeth in 1558, Frank W. Fetter (1932) has argued that it is doubtful whether any statement of Gresham’s Law can be found in Gresham’s writings.

It was in the last part of the 19th century, during the period of deflation and the fierce currency debate or “battle of the standards,” that Gresham’s Law became widely discussed. Henry MacLeod (1858) is responsible for proclaiming the idea a “law” and naming it after Gresham, and Stanley Jevons (1875) did much to popularize the doctrine. In the last quarter of the 19th century it was a popular dictum among monetarists with which to counter the arguments of bimetallists and silverites. When the wind was taken from the inflationists’ sails by the gold discoveries of the 1890s, Gresham’s Law tended to take a backseat in the development of monetary thought.

Gresham’s Law is a historical observation which requires a theoretical explanation. It might not be surprising that explanations of the Law developed in the late 19th century, and repeated in the early 20th century, have shortcomings when viewed from the perspective of modern theory. The purpose of this essay is to reconsider the theory needed to explain Gresham’s Law. We argue that the most common 19th century explanation of Gresham’s Law is incapable of accounting for phenomena it was designed to explain. Our argument is based, not on a small point in recent monetary theory, but on the basic conception of the demand for money. An adequate explanation of GL (Gresham’s Law) requires the modern treatment of the DM (demand for money) as an asset to hold.¹

¹Four acronyms will be used in this paper. It might be useful to list them here: DM (demand for money), GL (Gresham’s Law), BOP (balance of payments), MARP (monetary approach to the BOP).
In the next section an essential feature of the modern theory of the DM is contrasted with a different concept which is referred to as the "demand for money" in many writings by 19th century monetary economists. The stock nature of the modern DM is shown to be important for explaining why good money is removed from circulation and what quantity is removed. In Section III 19th century and early 20th century explanations of GL are shown to be inadequate whenever the stock concept of the demand for money is absent.

In the last part of the paper the "bad" money driven from circulation in GL is shown to be analytically similar to, in modern times, a set of international reserves (balance of payments deficit) following an overly expansionary monetary policy. Since the stock concept of the DM is the heart of the modern MABP (monetary approach to the balance of payments) while "bad" money driven from circulation is akin to a BOP deficit, the theory of GL is strikingly similar to the MABP. Or, stated another way, the monetary approach to the balance of payments provides a theoretical framework for explaining Gresham's Law.

II. Conceptions of Money-Demand and the Operation of Gresham's Law

No attempt is made here to present a comprehensive account of the evolution of the demand-for-money concept. But it should be clear from the examples cited below that a change has taken place over the last century. In the 19th and early 20th centuries some authors used the phrase, "demand for money," to refer to a concept that we call, "Flow-DM." Other authors avoided using the phrase, "demand for money," altogether. 5

5 Many readers will be quick to point out that the DM is captured by velocity. Although it is unquestionably true that the modern monetary theory views it as regarded inside demand determined, some writers (e.g., Mill (1848, book III, ch. 30), Keynes (1936, ch. 21) and (1978, ch. 4) regarded the left-hand side of MV = P * Y (where V is real output) as a statement, not of the DM, but of aggregate commodity demand, which has arisen the Keynesian Revolution usually been expressed as C = b * Y. If, following this line of argument, MV is interpreted as C + V (which represents merely as interest rates as flow shares the demand MABP). If it were possible that the expected demand MABP).

6 H. Robertson (1922) characterized the demand concepts as "money on the side" and "money holding." The distinction is frequently (evidently) discernible in discussions of the transactions versus the Cambridge approach to the quantity theory. See, for example, Fisher (1905), Friedman (1968) (1970), and Keynes (1913, ch. 14).

7 "Flow" is a weekly or the money supply for demand and supply of goods, or the supply and demand for money. They are equivalent expressions. ([1848, p. 11] or [1899, p. 491])

Although Fisher (1911) did not use the phrase "demand for money," the right-hand side of his equation, MV = PT, is an algebraic statement of the flow-DM, viz., the value of all flow offered for sale to obtain money per unit of time.

Thus, the difference between the two concepts has also been pointed out by Milton Friedman

Milton's quantity theory with Fisher's mechanical version of the quantity theory. We are also satisfying Mill and Fisher together, but not in their own time. We recognize, following Marris, that Fisher's statement of the quantity theory was the long-run "rate" sufficiently for the scope of his "transition period". In many chronic monetarist economists and the quantity theory only as a short-run description. It is necessarily possible to represent the flow-DM at a point in time with Fisher's PT.
special case. As will be shown below, the stock-DM is essential for determining whether the demonetization of good money is equal to the introduction of bad money. To show the role of the stock-DM, it is useful to construct a simple model of Gresham’s Law. The model uses the same framework of analysis which is the hallmark of the monetary approach to the BOP [see, for example, Johnson (1972)]. It is a simplified version of the MARP since we abstract from the banking system. Money is composed of a “good” money, silver (G) and a “base” or bad money (B).” In symbols, \( M = P \cdot G + B \) where \( P \) represents the gold parity, the price (in terms of monetary unit) fixed by the monetary authority. 1 Monetary equilibrium can be expressed as \( M / P = 1 \) or \( P \cdot G + B = P \cdot L \) where \( L \) represents the stock-DM in real terms. If we restrict our attention to the long-run rather than the short-run and to non-hyperinflationary situations, the explanatory power of interest rates in the determination of \( L \) is small compared to real income or wealth. Secular changes in real income and ...

As late as the turn of this century, the term “base money” meant bad or debased money (e.g., Breckenridge (1903)). This should not be confused with the modern terminology which uses “base money” for central bank liabilities.

The institutional arrangements underlying the determination of the price of gold at parity differ depending on whether the public holds gold coins or gold certificates convertible into gold. If the domestic currency price of gold bullion is too high above Par, other than the gold miners will take gold coin to the bullion market. If the public will take gold certificates to the government in exchange for gold which is then taken to the bullion market. Both cases have the same economic effect—they keep the price of gold bullion from going above Par and cause a dissipation of money. We will focus on the latter case, but the analysis is fundamentally the same if we were to consider the case of gold coins or some combination of gold coins and gold certificates.

Since the model will concern gold flows between countries, it can be regarded as applying to all gold stocks, whether for gold money or for gold held as an asset in a gold standard or in a gold convertibility system.

The definition of \( M \) as \( P \cdot G + B \) is true only if Par has never changed. A more general definition of \( M \) would replace \( P \cdot G \) with the integral from minus infinity to the present of \( P \cdot (G-U) \).

Therefore, \( L \) will be taken as exogenous in our analysis.

The theory of GL tends to reverse the order of connection associated with the quantity theory of money. Rather than focusing on the influence of \( M \) on \( P \), GL takes \( P \) as (approximately) determined outside the system and focuses on the influence of \( P \) (or its determinants) on the composition of \( M \). If authorities keep the money price of gold bullion fixed at a value \( Par \), the real value of gold, \( R \), can be expressed as \( R = Par \cdot P \). If, and we will return to this question below, the long-run value of \( R \) were independent of domestic money and prices, \( P \) would be completely determined as \( P = Par \cdot R \). Substituting this solution for \( P \) into the monetary equilibrium equation we obtain:

\[
Par \cdot G = (Par / R) \cdot L - B.
\]

This presents \( G \) as the exogenous variable which is determined by \( R \) (or real income), and \( B \), given the value of parity. There are several issues that must be faced if equation (1) is to be regarded as useful to help explain GL.

Consider, first, the definition of “good” versus “bad” money. The traditional criterion is based on the comparison of the mint ratio to the market ratio. The mint ratio is the ratio of the two parties (e.g., the official dollar price of gold divided by the official dollar price of silver) and the market ratio is the market value of one bullion divided by the market value of the other bullion. These ratios do not appear in the model explicitly since the base money being considered is assumed 100% fiduciary. In this limiting case the “market ratio” can be computed as the market value of gold bullion divided by the market value of the physical material used in the fiduciary money, viz., the paper. The market ratio is, therefore, nearly infinite when one money is 100% fiduciary and the other has metallic content. The “mint ratio” is easily computed in this case as the official parity value of gold divided by 1.0, the monetary value of the monetary unit. Since the disparity between the market and mint ratios is so great in this case, it is obvious which is the “good” money without resort to these categories. What we have done is to show that the categories of mint and market ratios cannot be used to distinguish between good and bad monies when one currency is 100% fiduciary. But the categories are not as important as they are under a bimetallic system since it is already obvious that the fiduciary money is the base money. The good/bad distinction is already assured in our model; consequently, the stock-DM (L) plays no role in determining which currency is removed from circulation.

In order for equation (1) to be used alone to explain the amount of gold (G) in the monetary system, \( R \) must be autonomous to \( G \). One particularly interesting case is the classical condition of constant costs. One can imagine, for example, a linear production frontier between gold and all other commodities with a slope of (minus) \( R \). This could be used as a long-run model which implies that the goods value of gold is determined independently of demand conditions. In order for \( R \) to be treated as constant in the long-run, of course, we have to assume that the slope of the production frontier is unaffected by technological change. In this case, \n
\[
G = [B \cdot Par - BL / R]
\]

where \( dG / dB \) is the net increase in base money. A
net increase in G means that gold is monetized; therefore, $G$ is the volume of gold demonetized. This equation addresses the earlier question of whether the volume of gold demonetized exactly offsets the volume of base money introduced. In the case of constant costs, the answer is "yes" only if the demand for money has not changed—i.e., for $d = 0$.

Even if the costs of production in gold mining were not constant, $R$ may still be independent of the amount of gold absorbed in the monetary system ($G$). The flow demand for gold as a commodity and the flow supply of gold from mining should exercise a dominance over $R$ in the long run. In the short run, however, the amount of gold demonetized and sold on the bullion market should affect $R$ such that $R$ and $G$ interact in a simultaneous manner. But the longer the time period, the more $R$ can be taken as independent of $G$ and, therefore, an independent determinant of the volume of gold or gold backed money.

The specie result, that the displaced money is equal in value to the introduction of inferior money, was stated in the preceding quote from Newcomb. Adam Smith obtained this result by using a metaphor, the "fullness" of the "channels" of circulation, which served the role of a stock of money. Let us suppose, for example, that the whole circulating money of some particular country amounted to one million sterling, that sum being then sufficient for circulating the whole annual produce of their land and labor. Let us suppose too that bankers issued $800,000 promissory notes. The channel of circulation, if it may be allowed such an expression, will remain precisely the same as before. One million we have supposed sufficient to fill that channel. Whatever, therefore, is poured into it beyond this sum, cannot run in it, but must overflow... Gold and silver... to the amount of eight hundred thousand pounds will be sent abroad... (Wealth of Nations, Canons edition, 1937, pp. 257-8).

Some writers recognized that good money would not be displaced by the introduction of bad money unless the total quantity exceeded the stock demand. A sample of statements from such writers is the following:

In point of fact, also, good and bad coins will circulate together in a given country as if they were all good when the circulation itself is not in excess of the demand for it. (Giffen, 1841, p. 304)

Should the silver coins be insufficient to fill the circulation, some gold money would remain in use. (Laughton, 1903, p. 429)

We find thus, as a limitation of Gresham's law, the condition that the aggregate of good and bad coins must be in excess of the country's need for circulating medium. (David Kirby, 1904, p. 54)

... if there is not too much of the bad money it is just as good as the good money. (Frank A. Fetter, 1905, p. 447)

When the authors conclude that the volume of good money displaced might not equal the volume of bad money introduced, they had some, at least implicitly, conception of a stock of money even if they do not call it the "demand for money."

The hoarding/circulating distinction can be seen as a special case of the use of the velocity concept. Hoarded money has a zero velocity and circulating money has a positive velocity. The hoarding/circulating distinction was superseded by the more general notion that since money has a higher velocity than other money, Newcomb (1885) was one of the first writers to develop the monetary demand for goods and services as the product of the stock of money and its velocity. In post-WWII Britain, Newcomb’s equation is $MV = P$. The formal use of the equation of exchange became more widespread as a result of Fisher's work (1911) although Fisher’s initial interpretation was not velocity of circulation ($V/M$) in which we now call, transactions velocity ($PV/M$). But regardless of the kind of velocity used, these writers did not emphasize the demand for money to hold.

The "driving out" under Gresham's law is...
Legal Tender Laws in the Flow Explanation

A theory which relies on the preferences of the spender and ignores the seller is suspect because the typical economic agent is on the average, receiving money as often as spending money. Why should the preferences of the second person, as a buyer, be important and, as a seller, be unimportant? As the preceding quote from Gide suggests, this asymmetry was justified on the ground that legal-tender laws give the choice of currency to the buyer, not the seller. Thus, legal-tender laws seemed to dovetail nicely with the monetary theory based on the decision of the buyer to circulate or hold money. It is necessary to inquire exactly how legal-tender laws may change the currency a buyer’s option. The most crucial point to note is that, if the seller (or a new creditor) can charge different prices (or different interest rates) depending on the currency used by the buyer or debtor, then the choice of currency will be a matter of indifference. If a buyer’s or debtor’s option is to be of any consequence, the government or Crown must also require that seller or creditor not charge different prices or interest rates. This requires that legal-tender laws be accompanied by price and interest rate controls. As noted by Mil- kin (1972), attempts by the Crown to impose price controls in the late medieval period were difficult to enforce. In later times, as in 1662 with the passage of the Legal Tender Act regarding the issuance of Greenbacks in the U.S. Civil War, the legal-tender acts were not accompanied by price controls.

In order for GL to operate, the two monies have historically had to circulate by tale (in earlier languages) or at parity (in last century’s language) or at a fixed rate of exchange (in modern language). Legal tender laws, as which we have argued, assured that monies of different weights would circulate by tale or nominal value by making it possible for sellers to accept intrinsically inferior money without fear of loss.

Minsky’s classic History of England (1977, ch. XXI) is often cited for a famous historical illustration of the importance of legal-tender laws associated with the resumption of 1666. Before 1666, the government of Wil- liam III accepted coins as their face value or “by tale” rather than by weight for the discharge of taxes. Milled or struck coins which could not be clipped, were melted down and exchanged with notes that had been clipped by hatmen. These were clipped and said to pay taxes. Finally, in 1666, the Parliament declared that light coin could no longer be used to pay taxes. When clipped money was no longer accepted at its face value for taxes, it began to circulate by weight rather than tale. The mechanism that resulted in the inferior money would circulate by tale in typical private transactions before 1666 was not the obligation of sellers but the willingness of sellers as long as they were confident that the government would accept the inferior money at its nominal value. As the date of the resumption approached, an increasing number of manufacturers charged differential prices depending on whether the buyer paid in clipped or full-bodied money. This historical illustration, while told in full, supports our view of the role of legal-tender laws in the operation of GL.

It is widely believed (cf. Friedman and Schwartz (1963), Hayek (1976)) that a fixed rate of exchange between the “good” and “bad” monies is necessary for the operation of GL. Although a fixed exchange rate has been part of the exchange rate mechanism in this form, necessary for GL to operate in the usual historical setting of commodity or paper money, a fixed exchange rate can be seen from a general theoretical perspective as a proxy for identical real yields. In commodity or paper money, in contrast to deposit money, it is difficult to pay interest explicit. The notion that (arbitrage) payments in a medium with a fixed exchange rate implies that both monies have the same real yields (see, the stage of deflation). If the differential real yield is low, then the public would be indifferent about the composition of monies they hold if the monies are sufficiently good substitutes. For a given overall DM and a reasonable degree of indifference about the composition, the introduction of “bad” money would displace an equal amount of “good” money. But with a fixed exchange rate, the introduction of additional “bad” money could alter the differential real yield in either direction and thereby increase or decrease the demand for the “good” money causing either more or less of it to circulate. If, for example, more Greenbacks had been issued after the Civil War but the war had not already run out, it would have remained constant that they would, at some future date, be redeposited in gold at the gold parity rate. There is a lesser pressure of Greenbacks (following the notes issued) would mean a higher differential yield in favor of Greenbacks.

A formal statement of this elementary argument is developed by Salant and Henderson (1978). If there is a reasonably good substitute for gold money, the increased demand for Greenbacks would come at the expense of the demand for gold money, lowering the amount in circulation.

The point of this argument is that a fixed rate of exchange between two non-deposit monies assures that the two monies have equal real yields. With a floating exchange rate or with deposit monies, differential yields cause and will effect money demands. A differen- tial real yield offers a different and alternative alternative mechanism which by one currency can move another from circulation. The “driving mechanism” in GL is the compar- ison of the domestic purchasing power of a commodity money with its cost of production or value as a commodity. The “driving mechanism” in modern literature on competitive money (Greens and Reyn (1983)) is a differential real yield. These two statistical structures could, of course, be combined in a general model. But they are separa- ted historically—i.e., commodity monies did not pay explicit interest whereas (new) deposit monies can and frequently do pay interest. With the switch to deposit monies and the abandonment of convertibility into a commodity, “good” and “bad” monies will not be exchanged at a general rate. But they may be “good” and “bad” monies with respect to their yields. Since deposit monies can pay explicit interest, it is natural to define “good” and “bad” monies with respect to their yields. But upon doing so, we get the models which are the “good” (higher yielding) money drive the “bad” (lower yielding) money from circulation whether the rate of exchange is floating or fixed. Just as this modern result relies on the absence of convertibility and commodity, no GL relies on its presence.

See also William Aikin (1961), p. 65; Keynes (1904, p. 53); and Tsiang (1911, p. 270).
It is not to be understood that the mass of the people engage in this occupation of cutting the coin to get up the heavier piece. It is the dealer, and especially the dealer in money, who, with his scales always at hand and always adjusted, quickly detects the least difference in weight ... (Walker, 1878, p. 195)

The mass of people do not follow the market values of gold or silver bullion, nor calculate arithmetically when a profit can be made by buying up this or that coin. The general public knows little about such things, and if they did, a little arithmetic would deter them. These matters are relegated by common consent to the money-brokers, a class of men who, above all others, know the value of a small fraction and the gain to be derived from it. (Laughlin, 1868, p. 26)

The great majority of people have no means practically of testing the coins which they receive ... (Joseph Nicholson, 1893, p. 44)

The people, as a general rule, do not reject the better, but pass from hand to hand indifferently the heavy and the light coins, because their only use of the coin is as a medium of exchange. It is those who are going to sell, export, hoard, or dissolve the coins of the realm ... who carefully select for their purposes the new heavy coins. (Jevons, 1875, p. 82)

If one contrasts these quotations with those given a few pages earlier, it becomes clear that the flow explanation of GL, frequently leads to a contradiction. One cannot consistently argue both that the typical purchaser consciously spends the worst coins and that he or she cannot distinguish between the coins. The flow theorists were concerned with the volume of money circulating versus the volume of money hoarded in their monetary theory of price level and output determination. But, in their flow explanation of GL, they implicitly proceeded from volumes to kinds of money. Even if the categories of hoarding and circulating apply to good money and bad money, respectively, they explain only their differential velocity. In order for one money to be exported or melted, its quantity must push against the stock-DM which serves as a constraint.

Hoarding in the Flow Explanation: Further Considerations

The concept of hoarding has a long and interesting history about which much could be written. Our own doctrinal research of this concept is limited and we venture our generalizations with some hesitation. But there are instances, logically distinct differences in the uses of this term which shed light on the theory of GL. We will consider three distinct meanings of the hoarding concept.

When "hoarding" is used in modern, post-WWII literature, it usually means or is synonymous with the stock-DM. According to this modern use of the term, circulating money and non-circulating money are both hoarded. We mention the modern use of the term as a contrast to earlier uses. In the GL-literature of the period with which we are concerned, there are two meanings of the word "hoarding" which are interesting for our study. We have already encountered one use of the term, as money with (strictly speaking) zero velocity. A third use of the term, one which has a very modern ring, can be found in the writings of Simon Newcomb (1885), Alfred Marshall (1887), Robert Giffen (1891), and Knut Wicksell (1898). "Hoarding" as sometimes used by these authors refers to a speculative demand for capital gain. Like the modern stock-DM, this use of "hoarding" is a stock concept. It can explain, in at least one important situation, why a particular money is taken from circulation.

The situation arises when there is an anticipated change in the price ratio (when two monies are coined or part of money is backed by bullion). The anticipation that convertibility will be abandoned induces speculation that can be self-fulfilling. It is not necessary for bad money to be introduced, just the expectation that a sufficient quantity will be introduced can induce hoarding and deplete the reserves of the monetary authority.

This use of hoarding raises several questions. First, is this the type of situation to which GL refers? Second, is this use of "hoarding" logically equivalent to the stock-DM? We will begin with the latter question. The speculative demand for a currency expected to suddenly appreciate is not equivalent to (what we have called) the stock-DM when the currency in question is a commodity or, more generally, a non-deposit money. This distinction is clearest when one reflects on the way that interest can be paid on a deposit money. With money on deposit at, say, a bank, explicit pecuniary interest can be paid continuously (or occasionally on the average balance held over time). While interest is accruing, the deposit is used as a medium of exchange—both receipts and expenditures go through the account. But with a commodity or paper money, an interest payment or capital gain that accrues at a point in time interferes with the medium-of-exchange property of the "money." A currency hoarded before an anticipated change in parity ceases to be money. If there are two monies, say, gold and silver, that are good substitutes and there is an expectation of a change in the price ratio in favor of gold, speculation or gold hoarding will eliminate some gold money from circulation and the (presumably unchanged) stock demand for money will have to be fulfilled with more silver money. Since non-deposit currency hoarded ceases to be a medium of exchange, this notion of hoarding is outside of or not part of the stock-DM.

Use of the stock-DM as distinguished from hoarding of a physical asset expected to appreciate reveals two fundamentally different "driving out" mechanisms that can cause a money to cease circulat. The stock-DM is necessary to explain how much money is driven out due to a divergence between the value of the money as bullion and its value as domestic money. The mechanism that is based on the comparison of the value of a money as bullion to its value as money is due to the presence of intrinsic value in the commodity money—that it can be "consumed." When one considers financial assets with no intrinsic value, their relative demands depend only on anticipated yields. One could argue that changes in relative demands (hoarding one money relative to another fiduciary money) explains GL. If the "good" money were defined as the money with the greater anticipated capital gain, not as the money whose mint value is lower than its bullion value. While this notion of "hoarding" may explain which money is taken from circulation through speculation, it does not explain the exportation and melting of undervalued currency. In fact, the mechanism that takes money out of circulation due to an anticipated capital gain can, in principle, remove the "bad" currency from circulation and thereby work in the direction opposite that of GL.

The mechanism is so different from the mechanism based on the intrinsic value of currencies that we take this notion of hoarding as not being an explanation of what is usually regarded as GL.

10One money might be exported as expected if its value as bullion tends to exceed its value as money (the usual mechanism of GL) while, simultaneously, an anticipated future capital gain due to a change in parity could induce the public to hoard the other money. In this case, the "bad" money would be hoarded. In practice this problem occurred rarely if at all. If, for example, the gold parity were less than the market clearing price for gold bullion such that the authorities had to sell gold to support the official parity, expectations frequently developed that they would have to reduce gold; hence, the anticipated change in the price ratio or parity would induce more gold to be taken from circulation through hoarding. But the fact that both the hoarding and the expectation/melting typically got to the same direction should not obscure the two theoretically distinct mechanisms by which currency is taken from circulation.

11In much of the literature, "hoarding" is placed on a par with exportation and melting as an avenue through which good money was drained from circulation.

12To say a typical quote, "... the three evils by which good money escapes in hoarding, in melting paper money abroad, and in selling it by weight." (Gide, 1913, p. 298) The
Although we distinguished between the stock-DM and hoarding (in the sense of commodity speculation), the modern conception of money-demand is sometimes divided between idle and active balances. The earlier notion of hoarding (in the sense of nonspending) is a precursor to the contemporary category of idle balances. So the question arises: How can we simultaneously maintain that the hoarding/circulating distinction used in the flow explanation is inadequate to explain GL and that its successor, the idle/active distinction, are two parts of the modern stock-DM? The answer is that the idle/active distinction concerns different economic behaviors, not different kinds of monies. The modern concept of idle or low-velocity balances is not intended to apply to a particular subset of the medium of exchange. It applies to the behavior of some households or firms that hold high balances relative to their level of income or expenditures. Persons in some activities turn their cash balances over faster than persons in other activities. The idle/active categories, just like the hoarding/circulating categories, are not useful for explaining how much money is removed from the domestic monetary system.20

question is whether such authors [e.g., Paul Einzig (1948, p. 413), Irving Fisher (1912, p. 222), Roy Grais (1913, p. 29), Cyril James (1920, p. 106)] are using “hoarding” in the sense of speculative demand for capital gains or in the money-not-spent sense of M1, “money kept in reserve by individuals to meet contingencies which do not occur.” As we argued in the preceding balance, hoarding in the sense of speculative demand for capital gains, theoretically, is the medium of exchange, and the good currency exchange. And, as we argued, the hoarding/circulating distinction is divided between idle and active balances (in the speculative sense) as used over the past two centuries by which good currency exchange. We conjecture that the “hoarding” is played a role in the past two centuries for good money and in the current conditions for money and in the current conditions for money exchange, and the good currency exchange. 

IV. GL and the Monetary Approach to the Balance of Payments

Thus far, we have argued that the flow explanation of GL is inadequate and that the modern stock concept of DM is essential for explaining how much good money is melted and/or exported. As we argued in Section II, the volume of good money driven from circulation is equal to the volume of base or overvalued money introduced minus any growth in the stock. Then readers familiar with the modern monetary approach to the balance of payments, MABP, will immediately recognize the similarity between our use of the DM for explaining GL and its role in the MABP. Our emphasis of the stock nature of DM used in GL is similar to the emphasis that Harry Johnson (1972) has given to the stock nature of the monetary equilibrium condition imbedded in the MABP.25

A basic issue for determining the relation between GL and the MABP is whether the exportation and melting of good money in GL and the BOP in the MABP are analytically similar.26 With the commodity monies frequently discussed in GL, there was no recorded BOP. If a metallic coin were melted into bullion, no accurate records could be kept of this diminution of the circulating media. The melting of full-bodied coin did not involve a central bank or a change in official holdings of international reserves. Institutional arrangements are so fundamentally different that there would appear little relation between the melting of metallic coin discussed in GL and the BOP discussed in the MABP. On the other hand, the melting of coin and a modern BOP deficit both cause the circulating medium to fall (or keep it from rising faster). This suggests a similarity the exploration of which requires that we pierce the veil of institutional similarity.

The transition from the GL-world of metallic monies to the MABP-world of fiat monies begins with the transition from the gold-coins to the gold-bullion standard (Ricardo’s suggested plan). The circulation of gold coins was replaced by the circulation of representative fiduciary monies which were convertible into gold bullion. Rather than gold coin being melted, central banks operating under the gold-bullion standard lost reserves (i.e., incurred a BOP deficit) when the representative money was converted into gold bullion. The gold bullion sold by the central banks went both to the bullion market and into the monetary systems of other countries or the coffers of their central banks. Consequently, the BOP deficit under the gold-bullion standard is analytically equivalent to the melting and exportation of coins under the gold-standard.

The second institutional change that may obscure the relation between the melting of metallic coin and the modern BOP-concept is the change from a gold-bullion standard to the gold-exchange standard. Widespread adoption of the latter occurred after WWI in an effort to economize on gold. Instead of losing gold as the result of a BOP deficit, monetary authorities lost foreign exchange (or interest-bearing assets denominated in foreign currency) units under the gold-exchange standard. Since the loss of foreign exchange is the gold-exchange standard counterpart to the loss of gold under the gold-bullion standard, and since the latter is the counterpart to the melting and/or exportation of gold under the gold coin-standard, contemporaries of such a view as our characterization of the MABP.

An extensive bibliography of the rich tradition of thought is found in Pulstman and Willford (1970). Application of the monetary approach to historical periods when monies are lost by McCloskey and Zecher (1976) and Flynt (1985).
that the MAFP and an adequate theory of GL may have a lot in common. The major commonality or similarity is, of course, the role of the stock DM, the central analytical framework of both the MAFP and the theory of GL. Beyond the role of the DM, other similarities can be recognized.

In a modern country with only one national, fiduciary money, there appears to be no counterpart to the good and bad monies with which GL was concerned. But the MAFP is concerned with two sources of money as reflected in the assets of the central bank. The two sources of money are the net purchases of foreign assets (i.e., the international reserves of the monetary authority) and the net purchases of domestic assets (i.e., interest bearing assets denominated in local currency) by the central bank. Rather than the public holding two kinds of monies as they did in the last century, contemporary monetary authorities hold two kinds of assets. The distinction between good and bad monies has been superseded by the distinction between monies created against the purchase of foreign assets (the international reserves of the monetary authority) and monies created against the purchase of domestic assets. These two sources of money play the same role in the MAFP as the two kinds of circulating media play in GL.

Another similarity concerns a conclusion associated with both the MAFP and GL but implied by neither. In the MAFP literature the conclusion is frequently drawn that a domestic credit expansion by the central bank is completely offset by a BOP deficit of the same magnitude. This is the same sort of conclusion that was given in the quotations from Adam Smith and Simon Newcomb in Section II of [1885, Nicholson (1903), Walker (1781)]. Just as we cited some earlier writers on GL who recognized that the offset might not always be 100%, it is well known (cf. Kouri and Porter (1979)) that the BOP will not equal the creation of domestic credit if the stock demand for money changes. 29

An apparent dissimilarity is that GL was frequently stated asymmetrically. In other words, GL concerned the exportation and/or melting of money rather than its importation and/or coining. In contrast, the MAFP is concerned with a BOP surplus as well as with a BOP deficit. While more public discussion was no doubt generated by proposals of devaluation or cheap money, the theory of GL is symmetric. The theory required to explain the volume of good money displaced with the introduction of inferior money can just as easily explain the coining of money if an insufficient quantity of inferior money is introduced to accommodate growth in the demand for real balances. Our answer is, therefore, that the theory of GL has the same symmetry as the MAFP but that there was more public concern about the loss of good money than about the monetization of inferior money (under bimetallism) or the monetization of superior money (under monometalism).

But there is at least one unambiguous difference between the theory of GL and the MAFP. The MAFP framework, conceived as it was in a world of fiduciary monies, does not require any reference to the intrinsic or commodity value of monies. While the explanation of the melting of good coin employs the same analytical framework as the MAFP, it also requires reference to the commodity or intrinsic value of the money. The point of this paper is that, in addition to information about the commodity values of metallic monies, an adequate explanation of GL requires the stock DM, which is also the analytical cornerstone of the MAFP.

References


