The Many Faces of Money and Hierarchy

Alex Howlett

January 31, 2024

Introduction

This paper defines money as the standard instrument people accept as payment to settle debts. Building on this definition, I show that the standardization of pricing and the centralization of settlement imply the emergence of a structural hierarchy in which entities use other entities' liabilities as money. Neither money nor its hierarchy were invented by people and their laws. Monetary hierarchy is natural and unavoidable (Mehrling 2012a).

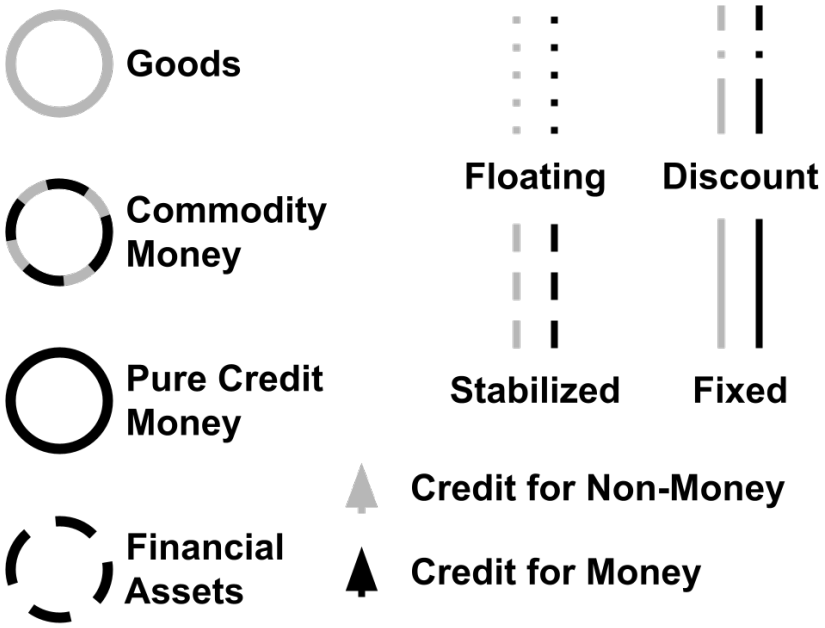

Figure 1: Legend for reading the diagrams in this paper

The hierarchy of money connects money to non-money credit instruments as well as to goods and services. This paper uses diagrams to illustrate the hierarchy of

money and credit as a tree structure in which objects, including different forms of money, financial instruments, and commodities, link to each other through prices. Figure 1 provides a legend for interpreting the hierarchy diagrams. I will define the various concepts as they arise.

The four prices of money that bind the hierarchy together are par, the interest rate, the exchange rate, and the price level (Mehrling 2012b). Par is the fixed price between different types of money denominated in the same pricing unit. The interest rate is the price of future cash flows. The exchange rate is the relative price of two monies denominated in different pricing units. The price level is the price of goods and services relative to money.

Perry Mehrling (2017) lists four features of money that confuse people: alchemy, hierarchy, hybridity, and instability. The present paper contextualizes the other three confusing features of money in terms of the hierarchy.

The monetary system is global. Money exists in a global hierarchy that constrains the economic policies of individual states (Murau and van 't Klooster 2023). This paper puts together the building-blocks of monetary hierarchy to explain how the requirement of monetary stability interacts with globally integrated markets to force the international coordination of economic policy.

Defining Money

There are (at least) two different approaches we can take to explain money. Either we can identify money as the object people call "money" and proceed to develop a theory of that object, or we can define a concept and use the word "money" as a label for that concept. The first approach might seem better because there is something called money that needs explaining. The problem with this approach is that people define money in different ways.

This paper takes the second approach. It explores a particular concept of money. I define money as the standard instrument that people accept as payment to settle debt obligations.

Figure 2 shows a market with five goods on equal footing, all trading bilaterally. Each circle is a good, and the dotted lines between them represent freely moving prices. There is no common settlement standard.

Such a "barter" arrangement is unrealistically complex for all but the simplest economies. At any moderate level of complexity, it becomes impractical for each person to get hold of the things that other people might want to trade for. In the absence of an established settlement standard, one will emerge to cut through the complexity. This can happen through the process of ongoing trade, as described by Karl Menger (1892).

> Men have been led, with increasing knowledge of their individual interests, each by his own economic interests, without convention,

without legal compulsion, nay, even without any regard to the common interest, to exchange goods destined for exchange (their "wares") for other goods equally destined for exchange, but more saleable. (Menger 1892, 248)

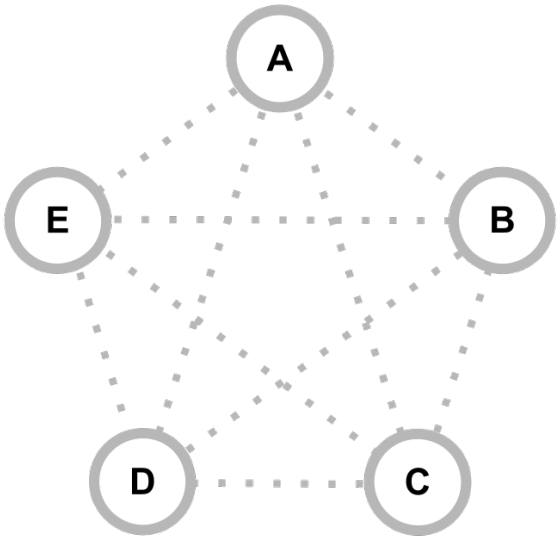

Figure 2: Five goods trading bilaterally

A trade community gravitates toward "more saleable" goods—goods with more potential buyers—for use in settlement. Indeed, the emergence of markets and the emergence of money are mutually reinforcing. This process can be organic. It need not be conscious. Though human institutions can facilitate it, money ultimately has a life of its own. Allyn Young (1924) says, "Men did not invent money by reasoning about the inconveniences of barter any more than they invented government by reasoning about the inconveniences of some mythical primitive state of anarchy" (265).

It is more convenient to accept as payment something that others are more likely to accept as payment (Jevons 1875, 13). In Figure 3, one good serves as a common settlement standard—that is, money. I have chosen gold, but it can be any commodity. The alternating black and gray circle indicates that the object is both a form of money (black) and a commodity (gray) in its own right. Rather than trading against the other goods bilaterally, each good now trades against the single money. Young continues:

> A host of different commodities have been used at different times, and by different peoples, as money. If we scrutinize a list of such

> commodities ever so carefully, we shall find it difficult to see that they have any common characteristics beyond the fact that, for various reasons, the commodities have all had, at a given time and place, an assured market or outlet. (Young 1924, 265)

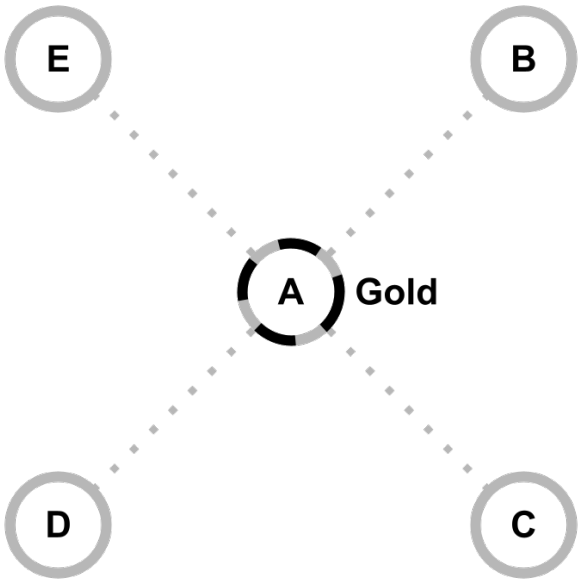

Figure 3: A settlement standard

Of course, money need not be a physical commodity. But it does have to be something whose ownership can transfer. You have to be able to spend it.

A thing will not be adopted as money unless it has, among other things, an assured outlet—somewhere you know you can spend it. And its adoption as money gives it vastly more assured outlets.

Money is whatever we can spend *right now* to settle our debts. If we already have the money, we can make a payment without having to sell anything and without having to borrow. Anyone can pay anyone with money. The purest form of money is one whose value derives entirely from what it can pay for.

Here is Menger again:

> It is not impossible for media of exchange, serving as they do the commonweal in the most emphatic sense of the word, to be instituted also by way of legislation, like other social institutions. (Menger 1892, 250)

By adopting an official money, the state ensures more outlets for that money. And by accepting payments in the official money, the state itself becomes an

assured outlet.

Money emerges among those who want to make (and receive) payments for the same reason a language emerges among those who want to speak to each other. As with language, the use of a particular money is an arbitrary social convention. What matters is that everybody in the community follows the same convention.

The Pricing Standard

In its capacity as the settlement instrument, money serves as a standard, but it also sets a standard: the standard against which we set our prices. We can make payments using dollars, and we can also set prices in dollars. The dollar is simultaneously a standard settlement instrument and a standard pricing unit.

When we settle debts with a particular money, it is inconvenient to price those debts in terms of anything other than units of that money. And when we express the magnitude of debts in terms of a particular pricing unit, it is inconvenient to settle those debts with instruments other than those denominated in that unit. A settlement standard encourages a corresponding pricing standard and vice versa.

Emphasizing different aspects of money's function, different authors use different terms to describe both the settlement instrument and the pricing unit. The settlement instrument is often labeled as a "medium of exchange," "means of payment," or "store of value." The pricing unit is often described as a "unit of account," "money of account," "measure of value," or "standard of value."

> Money is one of those concepts which, like a teaspoon or an umbrella, but unlike an earthquake or a buttercup, are definable primarily by the use or purpose which they serve. The use or purpose of money is two-fold: it provides a medium of exchange and a measure of value. (Hawtrey 1919, 1)

We might say that the settlement instrument defines a pricing unit or vice versa. Hicks (1989) suggests that the pricing unit (standard of value) logically precedes the settlement instrument (medium of payment).

> We seem to be thus left with two distinguishing functions of money: standard of value and medium of payment. Are they independent, or does one imply the other? It is not easy to see that there can be payment, of a debt expressed in money, unless money as a standard has already been implied in the debt that is to be paid. So money as a means of payment implies money as a standard. But could a debt expressed in money be discharged otherwise than in money? Surely it could. (Hicks 1989, 43)

Hicks, of course, is right that debts can be settled using something other than the standard settlement instrument. Even debts notionally paid in money can

often offset so that settling them requires no actual cash (money) to flow. But it is always possible to make the notional cash flows explicit if desired. The settlement instrument is still there in spirit.

Which came first: the settlement instrument or the pricing unit? It hardly matters. They are intimately connected, and both are useful to understand.

Money as the Highest Form of Credit

Macleod (1866) describes credit as "anything which is of no direct use, but which is taken in exchange for something else, in the belief or confidence that it can be exchanged away again" (18). Money is "the highest and most general form of credit" (19) because it is the standard settlement instrument. It can be exchanged with anyone, and it can be exchanged for anything.

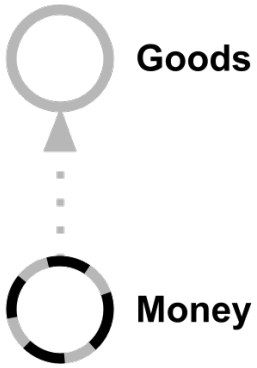

Figure 4: Money as a claim on goods

Figure 4 consolidates the non-money goods into a single circle and represents money as a general claim on those goods. We can trade money for any other good. The price line connecting money to goods now includes a directional arrow. This indicates the asymmetric credit relationship. The *point* of money is to be exchangeable for goods. And the price of goods (or commodities) in terms of money is called the price level. In this diagram, the price level is free-floating, but presumably, the particular commodity was chosen as money partly because it had a reasonably stable price.

Hawtrey (1919, 1–16) opens his book by imagining a world of "credit without money." He starts with credit measured in a standard pricing unit. He then derives the standard settlement instrument—money—from that starting point.

Money is a general claim to things that are not money. A claim to money is itself also a form of credit. Any promise to pay money—a money debt—is a claim to money for the receiver of the promise.

Under certain conditions, money claims can themselves serve as money. For example, we make payments using bank deposits. Bank deposits, which are a claim to cash, are widely accepted as payment to settle debts. They are a standard settlement instrument in their own right.

Schumpeter (1954) said, "You cannot ride on a claim to a horse, but you can pay with a claim to money." (305)

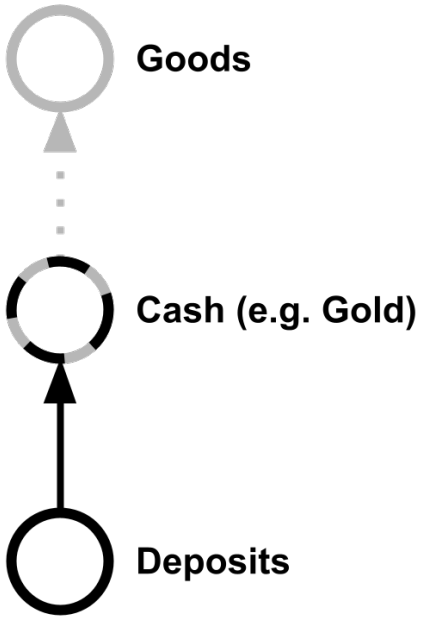

Figure 5: Deposits as money

Figure 5 shows deposits as a form of money. Cash, in this instance, is still both a form of credit and an actual good (e.g., gold), hence the gray and black circle. It is the commodity that the market uses as the standard pricing unit for all other forms of money and credit. The circle for deposits is solid black. This means that the deposits are pure credit. The deposits represent a promise for the standard money—cash. The line connecting deposits to cash is solid black, denoting a one-to-one pricing or "par" relationship. Each unit of deposits claims one unit of cash.

> Credit and money are both equally media of exchange. Credit is often said to be a substitute for money. It would be just as accurate to say that money is a substitute for credit, that the . . . means of discharging a debt is a substitute, so far as the creditor is concerned, for the debt itself. (Hawtrey 1919, 15)

Not all bank deposits are money. Deposits can be money only when they represent a demand claim. If everybody trusts that they can exchange deposits for the specified amount of money at a moment's notice, then they have no reason not to accept the deposits as payment.

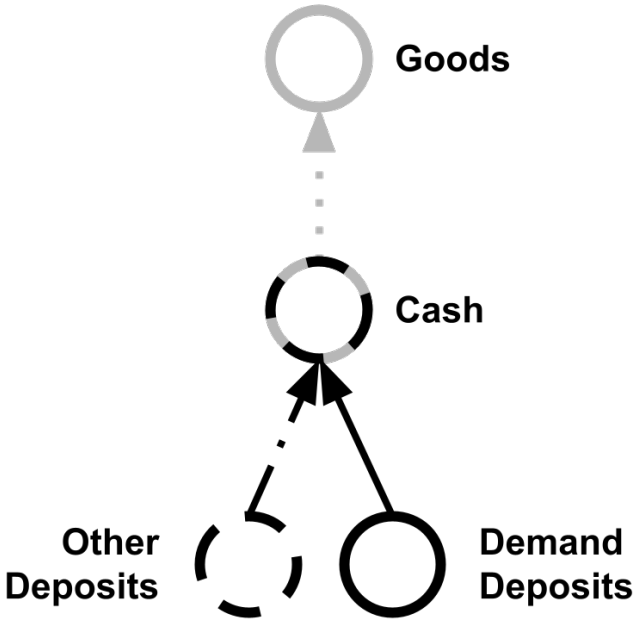

Figure 6: Non-money deposits

Figure 6 shows non-money deposits alongside demand deposits. The dashed black circle indicates an instrument that is denominated in money but is not itself a form of money. It is not money because it cannot be withdrawn on demand to make a payment. You have to wait. The broken line shows that the price between non-money deposits and cash is attenuated by an interest rate. The money you put in now is less than the money you will receive in the future. Promises for future cash flows trade at a discount to money in your hand today.

Banking as Alchemy

Hyman Minsky (1986) said that "everyone can create money; the problem is to get it accepted" (255). What he meant was that anyone can promise money. But

it's another thing to convince a counterparty to accept the promise, let alone establish common knowledge that the promise is good. Banks specialize in doing just that, so we use their promises as money.

A bank must carefully manage its cash flows to ensure it can make good on its demand deposits. If cash flows out faster than it flows in, the bank will eventually run out of money. To give itself a cushion, the bank will hold some portion of its assets in the form of a cash reserve or a reserve of instruments that can be quickly exchanged for cash.

Non-bank entities can convert their own promises into money by convincing a bank to "monetize" their debt for them. When a bank lends a customer money, it swaps that customer's promise (the loan) for something the customer can spend as money (deposits). Perry Mehrling (2017) calls this "the alchemy of banking." Banking causes new money to come into existence.

> A dealer in debts or credits is a Banker. The debts of the whole community can be settled by transfers in the banker's books or by the delivery of documents, such as bank notes, representative of the banker's obligations. (Hawtrey 1919, 4)

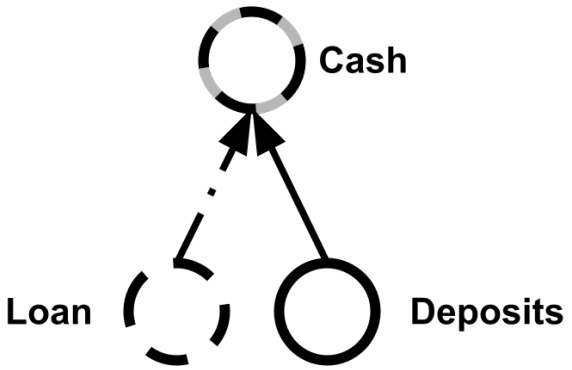

Figure 7: A loan creates money

Banks are in the business of monetizing debt. People, firms, and governments alike pay banks for this service. That payment comes in the form of interest on the loan. The bank pays $10,000 for a $10,000 loan but ultimately receives $10,000 plus interest in future cash flows. The bank has purchased the loan at a

discount compared to the total quantity of cash flows promised by the loan.

Figure 7 depicts the loan and the deposits side-by-side as promises to pay cash. What we don't see is that the promises (liabilities) are going in opposite directions. The loan is a liability of the borrower. The deposits are a liability of the bank. Furthermore, the loan is a non-money form of credit, whereas deposits are money. Borrowing creates money.

The deposits are redeemable for cash at any time at a fixed one-to-one par value (solid line). The loan is redeemable at par value, but not right away. The bank purchased the loan at a discount to par, and if the bank doesn't want to wait, it will have to sell the loan at a discount, too. The broken line from loan to cash denotes the presence of an interest rate or an attenuation from par.

Figure 8 rearranges the hierarchy to show loans as a promise for deposits rather than as a promise for cash directly. This arrangement emphasizes that the borrower can repay the loan simply by canceling bank deposits. Just as the loan was created through a mutual obligation, the repayment can take the form of a mutual release of that obligation. No cash needs to flow.

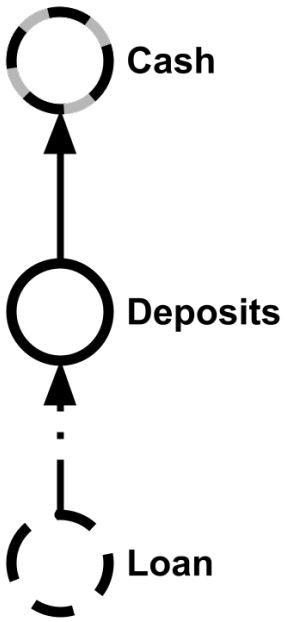

Figure 8: Loan as a promise for deposits

A Structural Hierarchy

By transforming more specific forms of credit into money, banking provides flexibility for entities to acquire funds to settle their debt obligations. With-

out banking, even those with good credit would find themselves cash-strapped. The need to settle debts as they come due constrains every entity in the economy. Access to bank credit relaxes the settlement constraint, making it more manageable.

Banking also allows a payment community to pool its cash and centralize settlement. Settlement through the bank vastly reduces the amount of cash that needs to flow. A payment from one depositor to another merely changes who has a right to demand cash. Payment communities avail themselves of banks to relax the settlement constraint and economize on the use of higher forms of money.

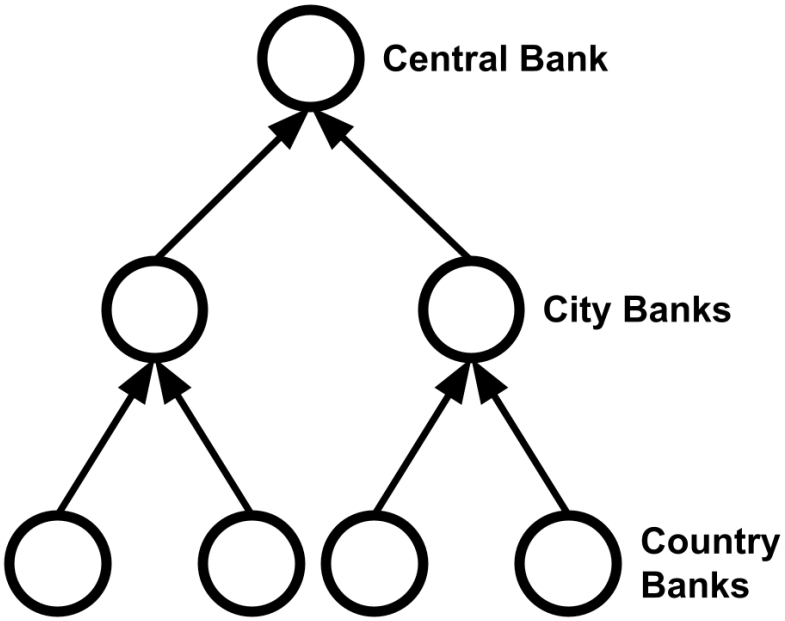

Figure 9: Hierarchy of bank money

Figure 9 shows that banks themselves can use banks. A hierarchy of money emerges in which each layer of the hierarchy uses the above layer's liabilities as money. People use bank deposits as money. Banks use deposits in other banks as money. This continues all the way up to the central bank at the top of the hierarchy. The emergence of banking is the emergence of hierarchy.

> Always and everywhere, monetary systems are hierarchical. (Mehrling, 2012a)

Every layer of the hierarchy faces a settlement constraint that can be relaxed by borrowing from the layers above. As long as the banks themselves remain able to settle their debt obligations, what is money at each layer of the hierarchy is fully money. It is generally accepted for the settlement of debts in its layer.

The money at the top of the hierarchy is the monetary standard. All money is either standard money or demand claims on standard money. One dollar of deposits claims one dollar of cash all the way up the hierarchy. This one-to-one par relationship transmits "moneyness" from the top to the bottom.

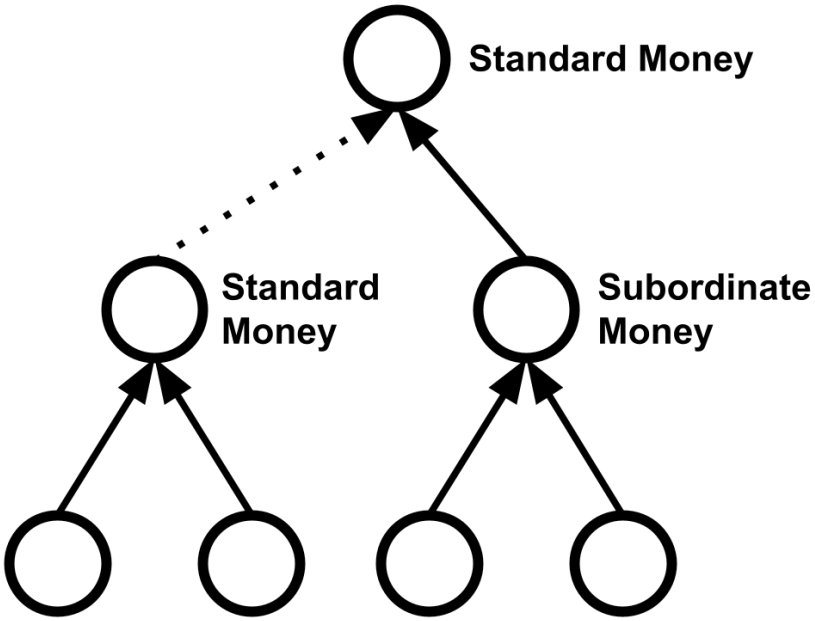

Figure 10: Violation of par bifurcates the monetary standard

A violation or relaxation of par will either demonetize lower monies or, at the very least, bifurcate the monetary standard. Figure 10 shows the hierarchy in the latter scenario. The price between the two standard monies is now floating. As depicted, the hierarchy remains. The issuer of the lower standard money is using the higher standard money as money, but not vice versa.

At the top of the money hierarchy sits the central bank that manages the monetary standard. If the monetary standard is a commodity, the central bank faces a settlement constraint. The central bank holds a reserve of standard money to absorb cash-flow imbalances just like any other bank. In today's world, we have pure-credit monetary standards. The central bank's own liabilities serve as the monetary standard. We don't use commodities as money. See Figure 11

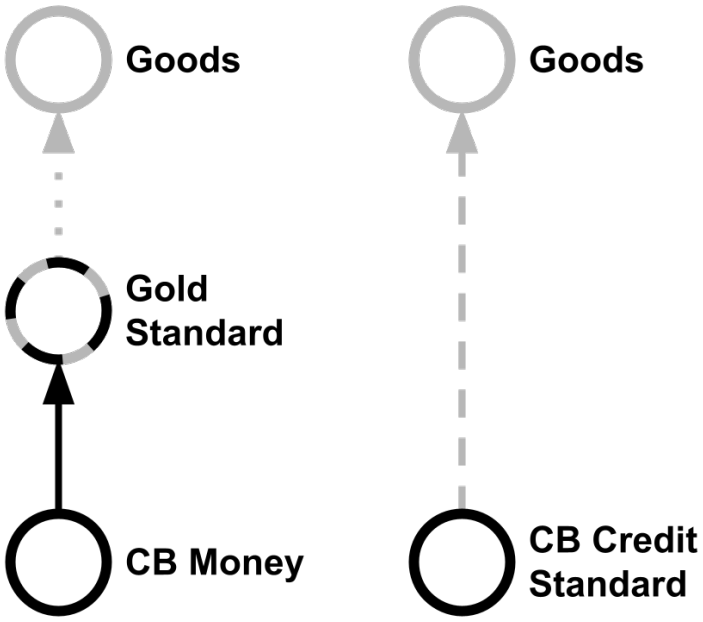

Figure 11: Commodity standard vs. credit standard

The dashed—as opposed to dotted—line from the central bank credit standard to goods indicates that the purchasing power of money is being stabilized. As I mentioned above, we choose particular commodities as monetary standards partly due to their stable price. For a credit standard, that stability must be actively managed.

In addition to being a bank for the other banks (i.e., a banker's bank), the central bank is usually also a bank for the government (i.e., a government bank). The central bank issues its own liabilities—the monetary standard—in exchange for the government's liabilities. This constitutes a monetization of public debt, just as retail bank lending is a monetization of the private debt of consumers or firms. Figure 12 shows government liabilities—Treasuries—as a promise to pay central bank money.

Money is created and used by the government and the private sector in concert. Perry Mehrling calls the dual public/private nature of money "the essential hybridity of money." (Mehrling 2017)

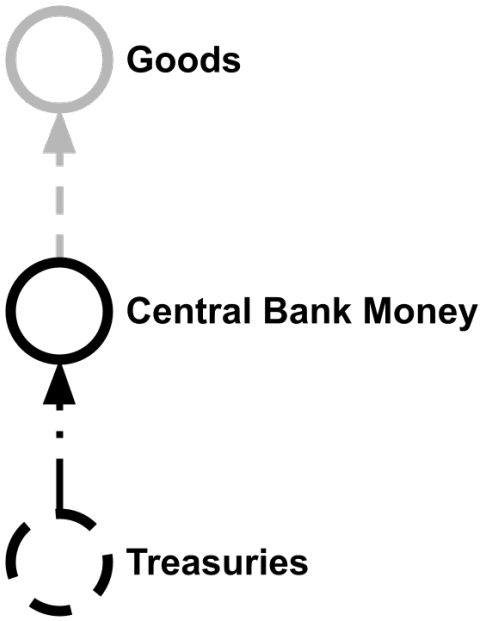

Figure 12: Treasuries below central-bank money

Monetary Stability

A money is stable when it can, on average, reliably purchase the same amount of stuff, at least in the short run. Monetary stability facilitates money's function as the most general form of credit. The less stable the money, the harder it is to use as money. The fixed par money hierarchy transmits monetary stability (or instability) from the standard money down to all the subordinate monies.

> Now in some sense or another the chief requirement of the unit of value is stability. (Hawtrey 1919, 6)

Here are the two approaches to achieving monetary stability shown in Figure 11:

1. The market adopts as standard money a commodity with a reasonably stable price, such as gold.
2. The central bank directly stabilizes the price of its own liabilities in a pure credit standard.

The gold-standard central bank, like any other bank, balances cash (gold) flows to keep its deposits at par. It maintains a reserve of gold in its vault to absorb any cash-flow mismatches. By contrast, a credit-standard central bank makes no promise to redeem its deposits for a higher form of money. There *is* no higher form of money. As different as they may seem, these two approaches to monetary stability share some important features.

The gold-standard central bank's position at the center of the system affords it the power to influence market conditions. It uses this power—in the form of monetary policy—to keep the supply and demand of gold in balance at the mint price. Successful monetary policy keeps the central bank's gold inflows and outflows matched, minimizing its need for gold reserves. If monetary policy could be impossibly perfect, gold would flow in and out without ever stopping to rest in the vault.

A credit-standard central bank makes no promise for redeemability in the first place. Rather than piggybacking on gold's monetary stability (or lack thereof) through redeemability for gold, the central bank must manage monetary stability directly. Unshackled from the physical limitations of a vault, however, the credit-standard central bank can do better than stabilize against a single commodity (gold). The bank can instead stabilize money against a basket of tradable commodities, consumer goods, or whatever is most consistent with the stable purchasing power of money.

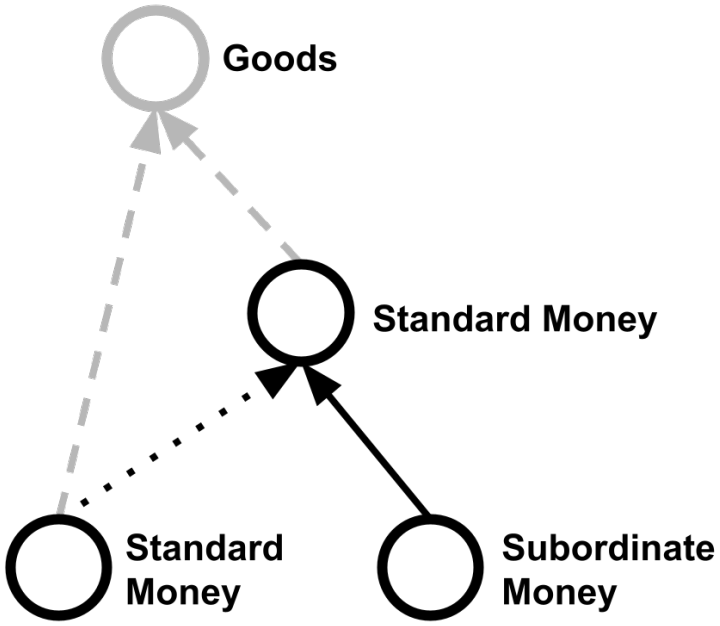

Figure 13: Monetary stability constraint

Figure 13 shows that even when the exchange rate between two monetary standards is not directly stabilized (dotted black line), monetary stability indirectly stabilizes exchange rates by extension. Exchange rates can drift only to the extent that monetary stability is imperfect. But the nature of money as a reasonably stable standard settlement instrument constrains how far this can go. Notice that the monetary stability constraint does not require any arbitrage. The two monies just have to be stable with respect to the same goods.

Financial Stability

Financial stability means that entities are generally able to meet their cash commitments as they come due. Claims for money are generally being redeemed at face value. Throughout the economy, debts are mostly being honored, and people are meeting their settlement commitments. Banks are able to balance their cash flows to maintain par between layers of the money hierarchy.

Under the gold standard, the central bank faces a settlement constraint from above, which it transmits down the hierarchy. Under a credit standard, the central bank faces a monetary stability constraint from above, which, again, transmits down the hierarchy in the form of a settlement constraint. In times of stress, the central bank can choose to violate its own constraint to relax the settlement constraints below it. Under a gold standard, that means suspending convertibility to gold. Under a credit standard, that means allowing the purchasing power of money to fall. It means allowing price inflation. In either case, the central bank temporarily sacrifices monetary stability in favor of financial stability.

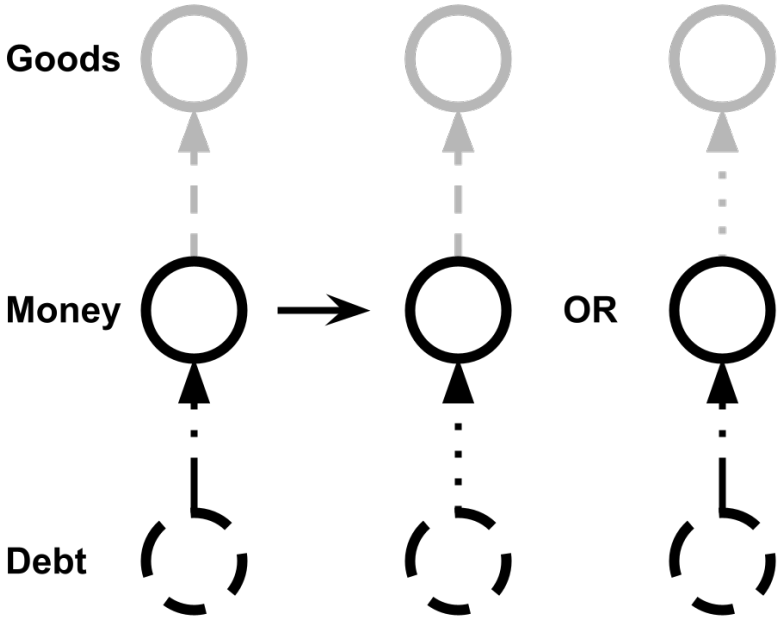

Figure 14: Sacrificing monetary stability

Figure 14 compares sacrificing financial stability (middle) versus sacrificing monetary stability (right). Some degree of monetary stability is necessary, but not sufficient, for financial stability. Without monetary stability, payments that depend on the prices of real goods and services become unpredictable. Nevertheless, temporarily relaxing monetary stability can sometimes relieve strains that would otherwise compromise financial stability.

Both monetary and financial instability express themselves as cash-flow imbalances but at different layers of the hierarchy. Financial instability occurs in the brittle part of the hierarchy where instruments are linked through fixed par and interest-rate commitments. Monetary instability occurs at the interface between money and that which money buys, as reflected directly in the price level and indirectly through exchange rates.

> Minsky seems to have started from the idea that, because government faces no survival constraint, imbalance between its cash commitments and cash flows shows up not as a tendency to crisis, but as a tendency to depreciation of future cash flows relative to present cash flows. This tendency takes the form of price inflation domestically and currency depreciation internationally. In effect, socialization of a private imbalance between cash commitments and cash flows (in order to avoid crisis) does not change the fact of imbalance, but only the mechanism through which adjustment takes place. (Mehrling 1999, 146–7)

Minsky and Mehrling's "survival constraint" is the settlement constraint. Whether the government faces a settlement constraint is in the hands of the central bank, the bank that monetizes the government's debt. If the government has the power to order the central bank around, then there is a sense in which it faces no settlement constraint. However, the government still uses the central bank's liabilities as money. It is structurally below the central bank in the hierarchy. See Figure 12 above.

International Money Hierarchy

The 19th-century gold standard was an international par money hierarchy with gold at the top. Although currencies were each claims to specific amounts of gold, gold was expensive to ship, which made foreign-issued gold claims costly to redeem. Foreign gold could trade at a discount (or premium) to domestic gold. The price of foreign exchange (FX)—claims to foreign gold—in the domestic market had to deviate from par to induce an international gold flow. FX prices—exchange rates—could move within a spread around par.

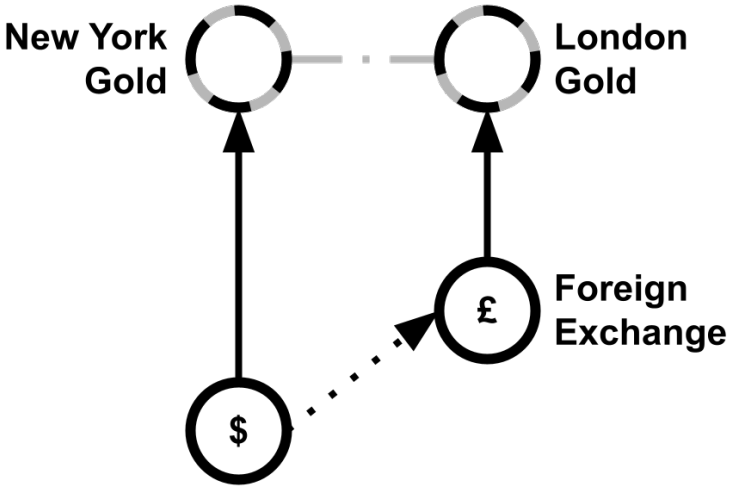

Figure 15: FX as money

The international monetary system ran largely on FX. Claims to gold were far less cumbersome than gold itself. As shown in Figure 15, FX often took the form of sterling-denominated claims on London. Banks and governments held reserves of sterling FX to absorb international cash-flow imbalances. The Bank of England sat at the top of the international money hierarchy, just below gold itself. It was the central bank for the international monetary system.

In the first half of the 20th century, par with gold was violated, and the monetary standard fragmented. The system reformed itself around the United States dollar. Figure 16 roughly shows what happened after World War I when sterling went off gold, but the US dollar did not. The international monetary system gradually transitioned to using US dollar liabilities as its money.

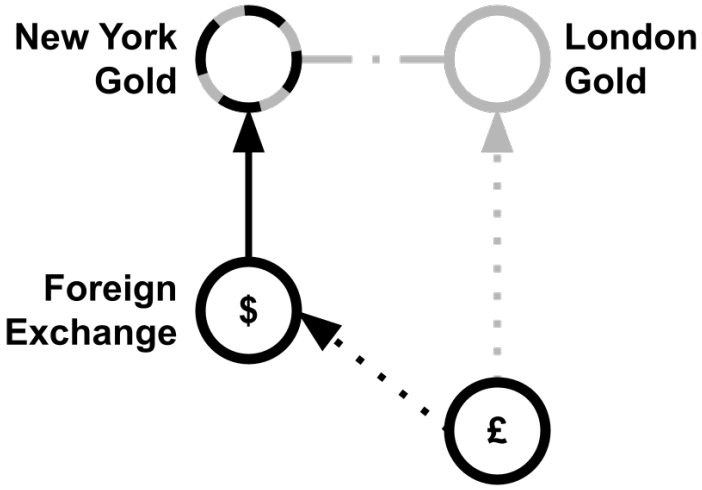

Figure 16: Breakdown of sterling system

Today, the global dollar system is a pure-credit par hierarchy with the Fed at the top. However, the international money hierarchy extends beyond the dollar system. There are banks that use the dollar as money, hold reserves of dollars, and manage dollar cash flows but issue non-dollar liabilities for use as money by those below them. Those banks are the other central banks. Their liabilities are the standard monies for their domestic money hierarchies.

The international money hierarchy—with its diverse array of central banks and standard monies—is no longer strictly a par hierarchy. Nevertheless, it remains a structural hierarchy of entities using other entities' liabilities as money. See Figure 17.

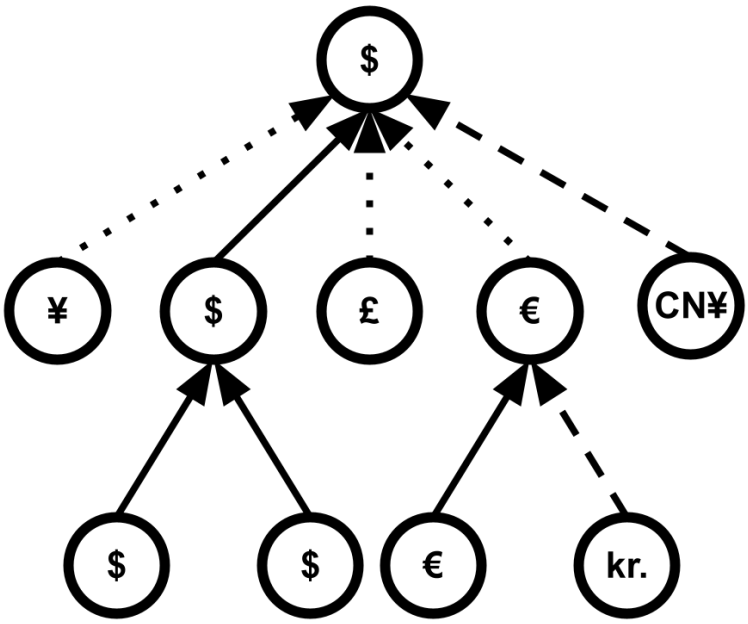

Figure 17: International money hierarchy

> There is no formal dollar area, and good reason why there should not be. The dollar became established as a reserve currency by an evolutionary process which took advantage of the use of currency as a unit of account, medium of exchange, and store of value. It can function as a reserve currency only when it performs these functions. (Kindleberger 1969, 131)

The international monetary standard has changed in the past. It can change again. But there is no longer any par at the top of the hierarchy to violate. Instead, there will be a shift in who's using whose liabilities as money.

Floating Exchange Rates

Even the gold standard had floating exchange rates. The Bank of England actively balanced its gold flows and maintained par redeemability. It did not directly intervene in the price of sterling-denominated FX in foreign markets. Exchange rates were determined by markets. The central bank's monetary policy constrained exchange rates, but the central bank did not *target* exchange rates. See Figure 18.

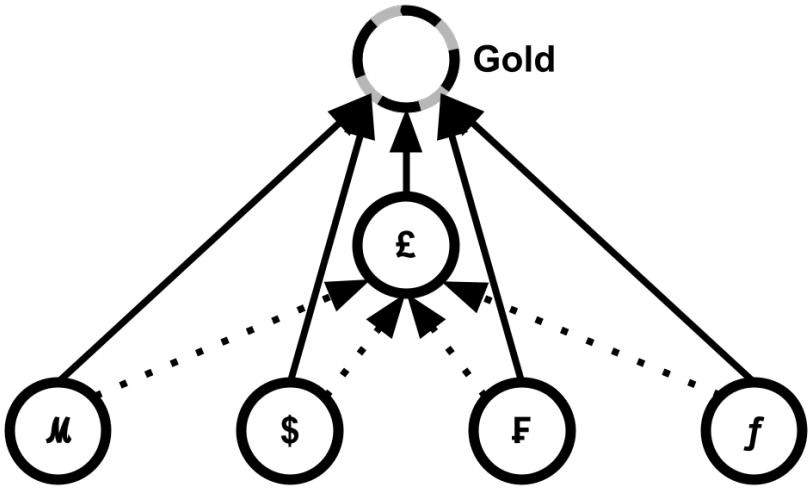

Figure 18: Floating exchange rates under gold standard

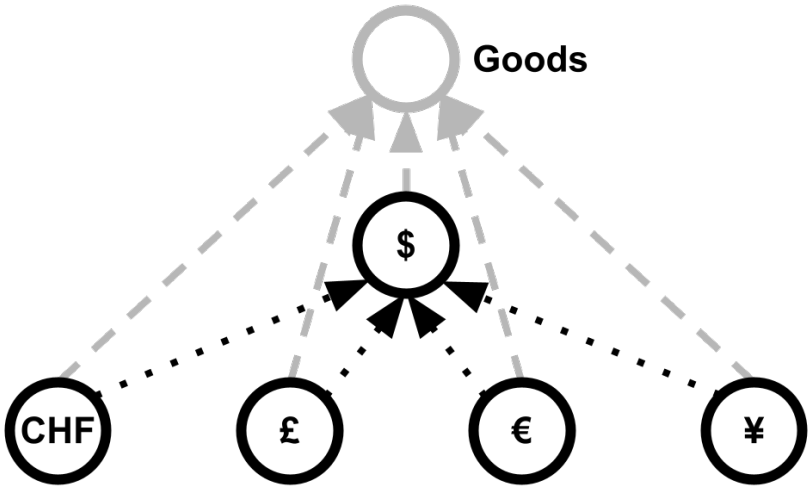

Figure 19: Floating exchange rates with pure credit money

Today, gold parity is gone. But floating exchange rates work largely the same (Figure 19). Instead of parity with gold, the central banks maintain stability against goods. They stabilize the price level. Just as under the gold standard, the monetary stability constraint shows through exchange rates.

Purchasing Power Arbitrage

Today, the big central banks target monetary stability directly. They each stabilize the purchasing power of their respective monetary standards. Purchasing power parity is when the exchange rate between two monies matches their relative purchasing power. For example, if a pound can buy the same amount of goods as two dollars, we would expect the pound to buy two dollars in the FX market.

Deviations from purchasing power parity put pressure on either exchange rates or price levels to adjust. For example, two central banks can target two different inflation rates consistent with a reasonable degree of monetary stability. In such a case, there will be pressure for exchange rates to drift per the differing inflation rates. Any attempt to maintain a fixed exchange rate will eventually result in either a collapse of the fixed exchange rate or a collapse in the purchasing power of the overvalued money.

It need not be price levels that drive deviations from purchasing power parity. It can also come from exchange rates. During a sustained exchange-rate deviation from purchasing power parity, trade flows may gradually adjust to take advantage of the price differential. Otherwise, arbitrageurs can buy commodities using the undervalued money, sell them for overvalued money, and convert the overvalued money back into undervalued money. This trade arbitrage puts pressure on the purchasing power of individual monies. It threatens monetary stability.

Interest Rate Arbitrage

Central banks can use monetary policy to push back against monetary instability. But monetary policy moves interest rates, and financial markets are global, too. Just as trade flows adjust to take advantage of arbitrage opportunities opened up by deviations from purchasing power parity, capital flows (international lending and borrowing) adjust to take advantage arbitrage opportunities opened up by deviations from interest rate parity. Borrowers want to borrow in markets with relatively lower interest rates. Lenders want to lend in markets with relatively higher interest rates.

Capital flows are much quicker and easier to adjust than trade flows. Nothing needs to be produced or shipped. As a result, interest rate parity is a tighter constraint on exchange rates than purchasing power parity. But monetary stability is not optional. The desire of central banks to control interest rates stems from the need for monetary stability. And monetary stability is needed in the first place for money to function as money.

Money does not respect political borders (Avdjiev et al. 2015). Nor is it constrained by geography. As long as capital flows are free to adjust, there can be only one monetary policy (Rey 2015): the monetary policy of the central bank at the top of the international money hierarchy. The Fed is the central bank for the international monetary system—even the non-dollar parts of it. Global interest rates will tend to move together, with the Fed exerting the most influence on the system as a whole. When international interest rates diverge, central banks are keeping arbitrage windows open.

Conclusion

Money is many things to many people. Different views of money reflect different faces of the same underlying structure. And that structure is hierarchical. Money and its hierarchy are natural features of markets. Money is vital market infrastructure. Without a market, there is no money. Without money, there is no market.

> In order to see [the importance of money] in its true proportion we ought . . . to take a completely organised and civilised society, with all the modern developments of commerce and industry, and to examine to what extent such a society might have existed just as it is without the use of money, or which of its characteristics would be necessarily sacrificed. In other words we have to find not the historical but the logical origin of money. (Hawtrey 1920, 2)

Only by understanding money as the standard settlement instrument—the most general form of credit—can we clearly see the structural hierarchy inherent in the logic of money. Only by understanding the logic of money and its hierarchy can we hope to have realistic expectations about what money can do and what we can do with money.

References

Avdjiev, Stefan, Robert N. McCauley and Hyun Song Shin. 2015. "Breaking free of the triple coincidence in international finance." *BIS Working Papers* no 524 (October)

Hawtrey, Ralph G. 1919. *Currency and Credit.* London: Longmans, Green and Co.

Hicks, John. 1989. *A Market Theory of Money.* Oxford: Clarendon Press.

Jevons, W. Stanley. 1875. *Money and the Mechanism of Exchange.* New York: D. Appleton and Co.

Kindleberger, Charles P. 1969. "Measuring Equilibrium in the Balance of Payments." Reprinted in *International Money* by Charles P. Kindleberger, 120–138.

London: George Allen & Unwin, 1981

Macleod, Henry Dunning. 1866. *The Theory and Practice of Banking.* Vol 1. 2nd ed. London: Longmans, Green, Reader, & Dyer.

Mehrling, Perry. 1999. "The Vision of Hyman P. Minsky." *Journal of Economic Behavior and Organization* 39 no. 2: 129–158.

Mehrling, Perry. 2012a. "The Inherent Hierarchy of Money." In *Social Fairness and Economics. Economic Essays in the Spirit of Duncan Foley*, edited by Lance Taylor, Armon Rezai, and Thomas Michl, 394–404. London and New York: Routledge

Mehrling, Perry. 2012b. "The Four Prices of Money" Lec. 1 in *Economics of Money and Banking* (MOOC). *Coursera.* coursera.org/learn/money-banking

Mehrling, Perry. 2017. "Financialization and Its Discontents." *Finance and Society* 3, no. 1: 1–10.

Menger, Karl. 1892. "On the Origin of Money." *The Economic Journal* 2, no. 6: 239—255.

Minsky, Hyman P. 1986. *Stabilizing an Unstable Economy.* New Haven CT: Yale University Press

Murau, Steffen, and Jens van 't Klooster. 2023 "Rethinking Monetary Sovereignty: The Global Credit Money System and the State." *Perspectives on Politics* 21, no. 4: 1319–36. https://doi.org/10.1017/S153759272200127X.

Rey, Hélène. 2015. "Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence" NBER Working Paper No. 21162.

Young, Allyn A. 1924. "The Mystery of Money." Reprinted in *Money and Growth: Selected Essays of Allyn Young.* edited by Perry Mehrling and Roger Sandilands, 265–351. London: Routledge, 1999.