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# Introduction

THE NATURAL starting point for understanding monetary phenomena lies in the definitions of currency and money. The two concepts are distinct in a “paper” currency system, where currency holds no intrinsic value, which is unlike a commodity currency regime, where currency derives its value from a precious metal, such as gold or silver. However, it is useful to clarify the definitions first in the context of a commodity standard before delving into “paper” currency systems.

In a metallic currency regime, a currency was defined in terms of a specific quantity of grains of a precious metal, and the content in circulating metallic coins was certified by the embossed portrait or coat of arms of the authority minting them. For instance, the Florentine Florin, which circulated from 1252 to 1533, had 54 grains (3.499 grams, 0.1125 troy ounces) of gold.

Defining money can be a nuanced task, as it does not fit neatly into the category of objects or even nouns. Hayek once expressed that “. . . it would be more helpful for the explanation of monetary phenomena if ‘money’ were an adjective describing a property which different things could possess to varying degrees” (Hayek, 1976, p. 56). Therefore, it is beneficial to delineate money by enumerating its functions and assessing whether a particular security or object qualifies for this property.

The three commonly attributed functions of money are as follows: *unit of account*, *medium of exchange*, and *store of value*. In a metallic currency system, money aligns with circulating coins, essentially making money, coin, and currency interchangeable concepts. Coins, functioning as a *medium of exchange*, facilitate the exchange of goods. Due to their ability to preserve their metallic content over time, they also serve as a *store of value*.

The *unit of account* property refers to the *numéraire* in which the prices of goods are denominated. Interestingly, this *unit of account* was not always



served by the currency in circulation. Einaudi (1936) describes an imaginary currency, the lira, used in Europe from the time of Charlemagne to the French Revolution. It functioned solely as a unit of account that never circulated but was defined as “the unit that did not vary in a world of changing coins.” According to the definitions provided, it was neither currency nor money.

The transition from a metallic standard to a paper or digital fiduciary currency system marks a significant discontinuity. Paper currency or digital tokens, unlike specie, lack intrinsic value and are not convertible into units of a precious metal. In this context, a currency is a claim that promises to pay in units of itself. In the current dollar monetary system, a dollar is a unit of the central bank’s liabilities. This definition allows the central bank to print dollars at will, without significant resource requirements. If currency were defined in terms of a commodity or another currency, the central bank would be unable to increase its amount at will unless the currency were appropriately backed by the commodity or reference currency. In recent examples of a decentralized currency system like Bitcoin, the currency, which is again a claim to itself, is defined by the digital token that can be virtually created through a suitable mechanism or algorithm, making it verifiable and uniquely identifiable.

The existence of an identifiable and verifiable currency is not a sufficient condition for the existence of a fiduciary currency system, since it does not imply that the currency will be used for payments. The road toward the acceptability of an intrinsically worthless currency to one with a value attached to it by agents is not trivial, and certainly controversial according to literature in this field (see Selgin, 1994). Therefore the second essential factor of a currency system is that some transactions should be settled in units of that currency for a prolonged period. With a fiat currency, this is done by its being imposed as legal tender.

Let us consider as the foremost example a monetary system with a central bank. As already mentioned, a currency is defined precisely by the central bank’s liabilities. Unlike money, these liabilities are a well-defined accounting object, and are usually called base money or monetary base. They comprise cash (coins and banknotes), as well as reserves, and reserves are the central bank’s short-term claims that, unlike cash, potentially carry a nominal interest rate.

In this monetary system, the currency can serve as the *unit of account*, which is the unit of measure in which prices of goods, financial claims, or contracts can be denominated.

Currency, cash and reserves, serves also as a *medium of exchange* (or means of payment). This is an essential element of the fiduciary currency system.

Some transactions should be settled using currency or securities denominated in that currency, meaning that at least on one side of the exchange the settlement takes place through an instrument denominated in the currency. Base money can naturally play this role. The reason depends, again, on a special property of central banks' liabilities: they are free of any risk, by definition. Therefore, under the nontrivial condition that currency is accepted, base money is the most suited type of financial claim for carrying out those transactions, since it provides certain payment in all future contingencies without any risk.

The last property of currency is that of its being a *store of value*. If cash is issued, it can maintain its currency value unchanged across time and contingencies. Reserves paying a positive nominal interest rate can not only store value, but increase it while maintaining the certainty of the payoff. If the central bank supplies cash, the nominal interest rate on reserves (and the risk-free interest rate) cannot go below zero—absent transaction frictions. Otherwise, arbitrage opportunities would be possible, creating unlimited profits for cash holders. In a completely cashless economy, in contrast, the nominal interest rate can go negative. Should this happen, reserves will not store the value of currency unchanged across time, although they will still provide a certain payoff.

It is tempting to define the *store-of-value* property by requiring currency to keep its value unchanged in terms of the purchasing power of goods. This definition, however, would significantly rely on the stability of the value of currency, which is not a property of currency.

Within this framework, money is a claim on base money, i.e., on what defines currency, and shares with currency, to varying degrees, the *store-of-value* and *medium-of-exchange* properties, as underlined above.

Brunner (1989) wrote: “The distinction between monetary base and the nation’s money stock is hardly informative or relevant for pure commodity money regimes. The distinction becomes important with the emergence of intermediation. Financial intermediation inserts a wedge between the monetary base and the money stock” (Brunner, 1989, p. 175). He further underscored that privately issued money represents a claim on another type of money, which is an “ultimate money without regress to other types of money.”

Private financial institutions or the treasury can also supply liabilities that promise to pay in units of currency at a future date; here, again, the currency is precisely identified by the liabilities of the central bank. However, the promises can only be maintained if the units of currency to fulfill them, or other means of payments in the same units, are available, in one way or

another, at the maturing date. The attribute of money is then extended to private and public claims that replicate or approximate the properties of base money in the payment system and, in general, in the financial markets. Indeed, money is defined by its properties. The concept of money is therefore broader than that of base money, encompassing it, with borders between what is money and what is not often vague and prone to creating instabilities in the financial markets, as we will discuss later.

Chapter 1 illustrates a monetary economy with a single currency in which the currency plays the three roles described above, but is cashless in equilibrium. The chapter investigates the intricate issue of how the value of a currency is determined through an appropriate specification of monetary policy that includes setting a target for the nominal interest rate and implementing appropriate balance-sheet policies.

Chapter 2 considers the same framework but gives a privileged role to cash in providing liquidity. It discusses the control of the value of currency by means of the monetary base, exploring whether that makes any difference with respect to interest rate policies. The chapter concludes by examining the conditions under which a currency can prevail as a medium of exchange in a multiple-currency environment.

Chapter 3 discusses the implications of the central bank's issuance of a digital currency in the form of deposits held by households at the central bank. This framework changes the way the central bank controls the value of a currency, giving a significant role to central bank reserves in influencing inflation beside the interest rate policy.

Chapter 4 extends the special liquidity properties that cash has, discussed in Chapter 2, to risk-free debt securities, those issued either by the government or by private intermediaries. These securities characterize a special class of assets called "safe assets." This category plays an important role in the financial system as collateral or as something exchanged for goods or other assets. Moreover, the deterioration of the quality of these assets can make the economy prone to a liquidity crunch, as Chapter 11, later, will show. Chapter 4 further considers who should supply the liquidity, the government or the private sector, through financial intermediaries, and whether this brings any challenges for the control of the value of currency. The chapter concludes by analyzing currency competition for the denomination and payment settlements of "safe assets".

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