MONEY'S WORTH

How the concept came to be

ON 12 JUNE 1667, London was in a panic. The English fleet was under attack to the southeast. Samuel Pepys (1633–1703) wrote in his well-known journal of his fear that if the Dutch destroyed the fleet, they could sail up the Thames and capture London.

For Samuel Pepys, a naval administrator whose diary offers such fascinating insights into London in the 1660s, the crisis was that the largest part of his money might be taken. He kept most of his wealth in gold coins, locked in a strongbox in his house. Desperate with worry, he loaded them up in cloth sacks and sent his wife and father to hide the money on a country estate outside of town.

The Dutch did not sack London, and Pepys recovered his gold from the garden of a country house—where to his dismay it had been buried in broad daylight only six inches deep. It is not easy to hold on to wealth in coin form. Buried hordes of coins have been found in many parts of the world. A cache of 40,000+ Roman coins was recently found in the little town of Senon, in northeast France. Well over 1,000 caches of coins have been found in the UK. There have been many more hidden, buried, or submerged deposits that have been recovered.

Modern methods of saving wealth seem easier and safer. On the other hand, can anyone say with confidence where one's life savings are? Does the money exist anywhere, or is it just an entry in a computer database? One could buy gold with one's savings, but in the last 100 years the value of gold has ranged between $20 and $4,300 per ounce—hardly a steady anchor. Preserving wealth has been a vexing problem for as long as money has existed.

For the largest part of human history we had no money. If we needed something that someone else had, we could trade for it. People living in barter-based societies have long been bewildered by the idea of currency. According to an account in the document, "Travels and Explorations of the Jesuit Missionaries in New France,

ABOVE Money cowrie shells—© Tententenn/Dreamstime

1610-1791," a Wendat (Huron) tribesman living near Québec City told a Jesuit missionary: "You French are mad. The paper you chase is nothing."

The original basis for exchanges was barter: "I trade you my large ceramic storage jar for your bushel of grain." This exchange is based on what economists call the "double coincidence of wants." I want some grain and have a storage jar, you want a jar and have some grain, so the exchange works. But if you do not want a jar, we cannot help each other.

One very early form of money arose from this lack of coincidence of wants. That conversation went like this: "I want your storage jar, but my grain is still growing in the field, so I'll give you an IOU promising to give you the bushel of grain when the crop is harvested." Economists base the credit theory of money on this because the promise itself is something of value. Some of the earliest written documents in the world were exactly this sort of thing: a promise to pay.

Another theory of money holds that the commodity itself could be a form of money—for example, a sheep, a quantity of sea shells, or, if the society values metals, a small nugget of silver. One object that came to be widely traded as a status object, and finally a form of commodity money was the cowrie shell (*Monetaria moneta, Cypraea moneta*). Its shiny, porcelain-like shell was beautiful and widely traded as a status object and a measure of value in India and far up into China. Cowrie shells are small—less than an inch in length—and easily transportable. They have been referred to as "the first global currency" because of their wide use, eventually from Japan and New Guinea across Asia and Africa.

An early example of where cowrie shells have been found is the tomb of the high-status woman, Fu Hao, who died around 1200 BCE. Her burial pit contains about 7,000 cowrie shells. She was consort of Wu Ding (ca. 1250–1192 BCE), who was a ruler of China during the Shang Dynasty (ca. 1600–1046 BCE). Fu Hao's tomb inscriptions describe her as a military general as well as a woman of the royal court. The cowrie shells seem to have been intended to give her wealth to live on in the afterlife. The tomb is extraordinary, with around 750 jade objects, several hundred bronze vessels, six sacrificed dogs, and sixteen people buried with her. Like the tomb of the minor Pharoah Tutankhamen (active ca. 1330 BCE) in Egypt, her burial place is special not because it was the largest or most impressive, but because it was never to be looted in prehistory, so we can see what the grave goods in a high-status Shang tomb would have been.

Some of the 2,518 Roman gold coins found in Trier, Germany, in 1993. —dpa/Alamy

Cowrie shells were referred to in several early Chinese documents as standards of value. A text from about 950 BCE says: "Citizen Ju Bai received from Qiu Wei one jade tablet worth eighty double strings of cowrie for six fields of his lands." This sort of commodity currency was good for establishing the comparative value of things. In later times, many of these shells came from the Maldives, 700 kilometers southwest of the southern tip of India, although they were not used for exchange there. Economic anthropologists suggest that shell money was good at enabling long-distance trade across boundaries and between people who didn't know each other. Its commodity value was in its beauty because it was widely used as jewelry. It was also due to its scarcity and the fact that the shells were carried far from their source. Some examples of commodity money from the Americas include "wampum" shells, made from the purple parts of Quahog clam shells, and cacao beans, the source of chocolate.

Standardized pieces of metal bridged the gap between "commodity money" and "fiat money"—currency that is guaranteed by a government or other organization. Gold, silver, copper, and bronze played that role in many societies. Silver could solve the "coincidence of wants" problem by representing a certain amount of value, similar to the barley IOU tablet. True money came into existence through this sort of logic. But when it was just a nugget of silver or gold, an accurate scale was needed to figure out what it was worth. It was not until roughly 650 BCE that a group of Lydian traders, from what is now western Turkey, started measuring out electrum (a gold-silver alloy) to a standard weight, and stamping it with

A late Uruk period (3300-3100 BCE) barley tablet. Four symbols of barley stalks can be seen on the table, along with numerical notations. —©The Trustees of the British Museum

One of three Roman coin hoards discovered by archaeologists in Senon, northeastern France—believed to have served as a form of ancient safe or long-term savings. —© Simon Ritz, INRAP

an official seal, attesting to its weight and value. The Lydians were part of the Greek world at the time.

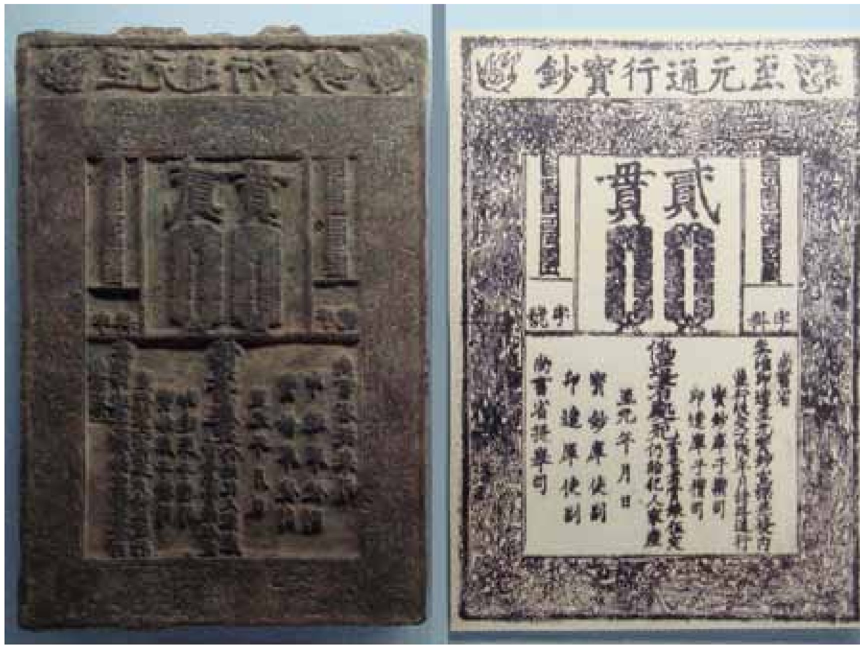
On the eastern end of the Silk Road, people in China had begun to cast and standardize bronze currency at about the same time. Recently, Chinese archaeologists documented a metal-casting site with shovel-shaped coins in Henan Province, China, dating to about 640-550 BCE.

Gold, silver, and bronze are useful to have around. However, no one metal has a greater intrinsic value than another. Things have value because people want them. In the Middle Eastern world, gold came to be more valued for cultural reasons, starting with the ancient Mesopotamians. In religious documents from before 3000 BCE, gold is praised for its symbolic connection to the bright radiance of the Sun and the fact that it doesn't tarnish as readily as copper and silver. The ancient Egyptians venerated gold even more. During the Old Kingdom (ca. 2543 to ca. 2120 BCE), temple texts speak of gold and silver being part of the body of the sun god Ra. The king became like Ra and the texts record: "The king's flesh is gold; his bones are silver."

Having money in the physical form of a coin was critical for the growth of market economies. In the 1860s and 70s, European economists were elaborating theories of how money works. Economist Carl Menger (1840–1921) wrote of how certain commodities through everyday practice came to serve as money because they were easy to buy and sell and everyone would generally trade them for something. Economist William Stanley Jevons (1835-1882) talked about how money could serve four functions: it was useful in trading; it quickly established a widely shared measure of value; it was a standard of value that could measure the size of debts; and it could store value. These things came to be codified in a rhyme:
Money's a matter of functions four:
A Medium, a Measure, a Standard,
a Store.

Having tangible wealth causes a sort of insanity in some. Author Mary Ann Evans (1819–1880), writing under her pen name George Eliot, describes this madness in her character *Silas Marner* (1861):

> But at night came his revelry: at night he closed his shutters, and made fast his doors, and drew forth his gold. Long ago the heap of coins had become too large for the iron pot to hold them, and he had made for them two thick leather bags...How the guineas shone as they came pouring out of the dark leather mouths!...He spread them out in heaps and bathed his hands in them; then he counted them and set them up in regular piles, and felt their rounded outline between his thumb and fingers . . .



Yuan Dynasty banknote (1287 CE) and wooden printing plate for 2 guan, each equivalent to a string of coins. The text below reads: "Can be circulated in various provinces without expiration dates. Counterfeiters will be put to death." —PHGCOM, photographed at Tokyo Currency Museum, Wikimedia

In the 1668 comedy, *The Miser*, Moliére (1621?–1673)'s character Harpagon cannot wait to visit his gold: "Ah! my dear little strongbox, my treasure… how happy I am to see you again…". And then his greatest fear comes to pass when his money is stolen! "My money! My poor money! They've taken it from me!" *The Miser* is loosely based on a second century BCE Roman play *Aulularia (The Pot of Gold)* by Plautus (ca. 254–184 BCE). Plautus's character Euclio also loses his treasured gold: "I'm ruined! They're taking my gold! Oh Apollo, help me, save me!" Separated by 2,000 years, their characters acted in the same ways.

But setting aside this obsession, coins were an important lubricant of trade between cultures. With an agreed-upon standard of value, people from different cultures could trade over long distances. It reduced the need for a common language. The "market"—once just a place where bartering took place in a village—now stretched across Asia, and merchants traveled between Baghdad and Xi'an, trading in many languages. For a long time, the most desirable currency was silver coins from the Persian Sasanian Empire (224-651 CE), which encompassed parts of modern Iran, Iraq, and the Persian Gulf. After the Islamic control of the region, silver *dirhams* and gold *dinars* from Baghdad were most sought after. Another important currency was the Byzantine gold *solidus*, found in sites and caches across central Asia.

In China, however, the economy wasn't based on gold. The monetary system was based on copper or bronze coins. Gold was seen as valuable, but mainly for jewelry. Bronze coins were used for everyday transactions. Chinese bronze coins are occasionally found in the Middle East, but were never used as a currency there. Similarly, gold *dinars* are found in archaeological deposits in China, but they are not common. There is a gradient across Asia where gold *dinars* are preferred on the western end, and bronze coinage more useful on the eastern end. The commodities that served as a common medium were silver *dirhams* from the Islamic world, silver ingots, and bolts of silk cloth.

An interesting note on Chinese bronze currency is that bigger transactions required thousands of coins, so in the 1020s the Song Dynasty (960–1279 CE) began to issue paper money in large denominations. People were required to accept these for transactions, and soon they were not questioned. Marco Polo (1254–1324) was amazed by the paper currency when he visited in 1275. He wrote:

> With these pieces of paper, made as I have described, [Khubilai Khan] causes all payments on his own account to be made; and he makes them to pass current universally over all his kingdoms and provinces and territories, and whithersoever his power and sovereignty extends. And nobody, however important he may think himself, dares to refuse them on pain of death. And indeed everybody takes them readily, for wheresoever a person may go throughout the Great Kaan's dominions he shall find these pieces of paper current, and shall be able to transact all sales and purchases of goods by means of them just as well as if they were coins of pure gold."

Those pieces of paper are truly a "fiat" currency. They only have value because the government says so, and because we all agree that they do. Like all forms of money, a dollar or cowrie shell or bitcoin has no inherent worth independent of the social agreement that underpins it; its value exists only within a shared system of trust and exchange.

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