Money as a Social Contract

Lecture 2—Transcript

Let me begin this lecture by telling you this story of how I came to own the interesting item that I am holding. Several years ago during the Christmas holiday, my family was visiting my wife's family in Great Barrington, Massachusetts. A baking frenzy was underway, and I have no skills, so I was sent to a specialty store to get some needed spices. While there, being a curious person and it being Christmas, I looked around and saw this item, and I asked the proprietor what it was. The proprietor came and looked at it and then answered, "It is a block of pressed tea. Tea." So I picked it up and looked at it carefully, and I turned it over and saw the repeated pattern that had been molded onto the back. And then it hit me. I recognized that I was holding a lot more than a block of pressed tea. I was holding money.

In today's lecture, I will trace the origins of money from its earliest uses until our modern day. I will argue that money has evolved substantially, and I will identify 5 stages in this evolutionary process. First, barter, where money is not used; then the earliest use of money using a commodity something intrinsically useful, but using it in a different way as money. And then, a form of money with which we are familiar, coins. Finally, we will come very close to the present day with phase 4 and take a look at paper money, but paper money somehow backed by coins. And finally, the fifth stage of the evaluation, fiat money: money that is valuable because the government says it is valuable.

But first we need a working definition of money. What does he mean, you might ask, when he says money? I will give you the standard definition used by economists. Money is something that can be used as a medium of exchange. So, what does that mean? When we make a trade, when we make an exchange, money is something that can be used in that trade and that exchange. But the most important idea of today's lecture is not the definition of money. That is easy. It is that a person values money not because it is intrinsically useful, but because it can be useful in exchange. It can be used to buy other useful things.

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The connection between money and exchange will help us to understand the most important point of today's lecture: that money is a social contract that lowers the cost of trading and has evolved gradually through time. That gradual evolution is not an evolution that was too slow. It was necessarily slow because as the contract evolved, trust was built.

Let's talk about the first phase in the evolution of money, barter, which is no money at all. Jevons, in a famous book called *Money and the Mechanism of Exchange*, said, and I quote, "The first difficulty in barter is to find 2 persons whose disposable possessions mutually suit each other's wants." So, mutually suit each other's wants: "There must be a double coincidence, which will rarely happen." Double coincidence? What does that mean?

Well, you imagine 2 members of an early society. Let's call them Mark and George. Mark is a very skillful hunter who regularly comes back to his village with more meat than his family can eat. What about George? He is the best axe maker in the village. He is really good at finding and crafting the right kind of axe head and then lashing it to a good piece of wood, so that it works very well. The question is: Can Mark and George trade? Mark has meat to offer, but he may not want an axe. He may already have one. George probably wants meat, but he only has one thing to offer and that is an axe. That is what Jevons meant. Not only do I have to something to offer, but I have to have what the counterparty, in exchange, wants.

The search for such a narrowly defined trading partner—meat, axe, meat, axe—is costly because it takes time to find someone who wants an axe and has meat to trade. Indeed, an axe maker might trade his axes for, say, grain only because he thinks it will be easier to find someone who will trade meat for grain than someone who will trade meat for an axe. Wow, that is wasteful right? Not wanting grain, but buying some just because you can then trade it away?

The costs of locating trading partners and negotiating trades are disincentives to specialization. They lead George to be less willing to ply his trade as an axe maker, where he is really excellent. In fact, if the costs are high enough, the best axe maker in the world may decide to split his time between making axes and raising cattle. That is a waste, and you know what, economists hate waste.

Primitive societies face tremendous incentives to lower the cost of barter and often settled on successful schemes even including credit arrangements. Think about that. Primitive societies where there was no money, nevertheless, were able to come up with arrangements where someone would give their meat today, but receive payment a little bit in the future in order to facilitate the trades that made that society better off.

Well, Adam Smith, again in the *Wealth of Nations*, suggested the next state in the development of money when he said, and I quote, "Every prudent man in every period of society … must naturally have endeavored … to have at all times by him … a certain quantity of some one commodity or other, such as he imagined few people would be likely to refuse in exchange." As Smith suggested, the next stage was the development of commodity monies.

A society uses a commodity money when individuals typically buy and sell the goods they want by offering in exchange a particular commodity that is agreed upon in the society to be acceptable in exchange. Commodity money has taken many different forms. Salt was used in many societies and many different geographic locations. Cowrie shells were used—I have some—in Indochina and in Pacific regions. We do not know exactly why, but cowrie shells are beautiful, and they are available, but it takes effort to collect them. Economists would say that cowrie shells are scarce because of the effort it takes; and it may be that cowrie shells were used as commodity monies in areas where the political leader, the chief, liked wearing cowrie shell necklaces.

There are other famous examples of commodity money. Pretty much everyone in school has seen these pictures of large stones on the Island of Yap. That is an example of commodity money. Back to my tea brick, tea bricks were used as money in inner Asia. And that pattern that I pointed out to you on the back? Why was that there? It was there to make it easier to make change. It allowed that tea brick to be broken into smaller uniform pieces. It was a device that made that block of tea more efficient in facilitating trade.

Before we leave commodity money, I want to point out that government often played a role in deciding what commodity would function as money. Animals such as oxen or birds were more likely to be money in societies where live animal sacrifice was required. If the ruler favored a certain kind of shell or feather, it might become money. Keep in mind that the commodity chosen as money would have to be scarce. If anyone could pick up unlimited quantities of money from the seashore or the backyard, then no one in his right mind would give up something that he worked to produce in exchange for those shells or feathers.

Well, as we think about the evolution to the next phase of money development, we have to realize that primitive peoples traveled beyond their borders of their homelands. When they did, they frequently found that what they considered to be money at home was not accepted by potential trading partners in the new lands that they visited. But what they did observe was that metal, especially gold, silver, bronze, copper, and iron, were valued in other lands. Indeed, Captain Cook on his voyage was able to give iron nails from the Endeavour to the peoples he visited. They liked to have those nails. So, the next stage of the evolution of money was the use of metals and the coining of those metals.

Several forces favored the use of metals rather than other commodities as money. Metal was more likely to be useful in trade in other lands because it could be used to make a variety of useful goods such as knives that were used throughout the world. Metal was durable, and typically, metal was more valuable, per unit weight, which made the cost of transporting it on a trade mission sufficiently more efficient. But, there were 2 important disadvantages to the use of lumps of metal as money. It was costly to verify the true metallic content of a lump and that purity of that lump. Remember all that glitters is not gold. It was also costly to weigh the lump.

But by creating coins from metal, government again played an important role. They lowered the cost of using metal as money. Coins are very old. The earliest known coins are from Lydia, which is in modern Turkey, from the 7th century B.C. Copper, bronze, silver, and gold coins are widely found in ancient Greece and in ancient Rome. Words in use today trace their origins to early coins. We have heard of the phrase "the pound sterling." But a sterling was originally a silver penny used in England by the Normans at around 1300. Today, sterling has a technical meaning, an alloy that is 92.5% silver. How about the word "dollar"? The word "dollar" derives from the German word "Thaler," which was a minted in Bohemia in the early 16th century.

We have already argued that governments play an important role by coining money. It is solving the problems of weight and measures, and governments typically derived important revenues from its coining operations. The governments owned the mints that converted raw metals into coins, and they collected fees from those who sold metal to the mint. Ah, ha! But the owner of the mint, the government, could also raise revenue by lowering the metal content of its coins.

The word "seigniorage" denotes the revenue that a government obtains by deflating the value of its money and that word, "seigniorage," derives from the French word for "lord." Now, when I say "lord" here, I mean lord of the manor, the seignior. How does seigniorage work? It could be as simple as shaving metal from the edges of the coin, or it could be as complicated as changing the price that the mint offered for metal to be coined. It was a big deal, this seigniorage revenue, a big deal for government.

In 1542, Henry VIII earned—this is a staggering statistic—6 times the normal annual crown revenue by lowering the silver content of English coins. Six times. Every day, we handle quarters and dimes minted in the United States and every day, if we think about it, we realize that those quarters and dimes are fluted. They have fluted edges. Why? Was it the coin maker's art? Not at all. It was a very practical reason. The ridges in our quarters and dimes derive from the early attempts to assure the coin owner that the coins had not been shaved. Well, there is no silver in our quarters and dimes anymore, so it is no longer necessary, but that is why those ridges are there.

The transition from coins to paper money is rooted in the practice of allowing citizens in many civilizations to deposit their goods in temples and palaces. This is a very old practice. Temples and palaces were not only places of worship. They were not only places to which you came to offer sacrifice, but they were places that were secure and well guarded, and they evolve to take on the role of protecting the wealth of their citizens. In Babylon, by 1000 B.C., private deposits were accepted at the Babylonia temple. Even the Code of Hammurabi set out the rules for those deposits. Officials issued receipts to depositors and allowed them to transfer their deposits to third parties.

So the next step in the evolution of money is the use of money that is backed by metal such as gold or silver, but itself takes on paper form. The origins of this paper money are the warehouse receipts that we just talked about. Those receipts are receipts given by depositors for the precious metals that their customers left or their temple worshipers left in their possession. The warehouse receipts began to function as money, not when the metal was deposited, but when third parties traded them for commodities rather than withdrawing their deposits. Let's think of an example here.

So, I have deposited, let us say some gold, at my temple. I have received a paper receipt. I now, say weeks later, wish to make a purchase for my home. I go to the individual who is going to sell me what I desire, and instead of first going back to the temple to get the gold, I simply present my warehouse receipt. I, in a sense, sign it over to the person from whom I am buying. When that third party, the person who is selling me goods, takes my warehouse receipt and thinks of it as her own, or his own, that is when those receipts begin circulating as money.

Marco Polo found money printed on mulberry bark in China in the 13th century. In the west, London goldsmiths gave receipts for gold deposited with them, and those receipts functioned as money in the 17th century. The use of paper money lowered exchange costs since it was a heck of a lot easier to exchange warehouse receipts than the actual deposits. For one thing, the receipts were for a particular quality and quantity of gold, and the receipt actually said that. If you handed over the gold, you would have to weigh and it and assay it again.

Ah, and here is a very subtle, but very, very important step in the evolution. Think about the people who are managing the depository: the London goldsmith. We will talk about that London goldsmith in detail in another lecture, but let's just get a highlight. Those goldsmiths soon realized that they could make loans to new parties by issuing new warehouse receipts. The scheme worked because on any given day, only a very small fraction of the people who had deposited gold with those goldsmiths actually tried to get it back. So, here we are with money as gold or silver or copper coins. But we know that that is not our money today, so what happened? The final demise of the gold standard, according to Angelo Redish, occurred in 2

steps. In August 1971, United States President Nixon temporarily suspended the convertibility of the U.S. dollar into gold and made that suspension permanent in 1973.

So we come then, to the final step in the evolution of money from barter where there is no money, through commodity money, through gold coins, to fiat money; money that is valuable by fiat. It is valuable because the government declares that it is valuable. So, let's do a kind of experiment here. Pause for a minute, reach into your pocket, and take out a dollar bill. This is a little bit like a scavenger hunt. Search on that bill for evidence that that bill is not just money, you knew that, but fiat money. You're doing it? Well, you will not have to search for long before you find the words, "This note is legal tender for all debts, public and private." Folks, that is the clear declaration that our money, the U.S. dollar, is valuable because the U.S. Government says it is.

In 1844, the Bank of England established a rigid link between the amount of paper money in circulation and the gold reserves of the Bank of England. This meant that the supply of money in England would fluctuate with the gold reserves of the bank and with the availability of gold in general. For example, discoveries of gold in the new world led to rising prices of goods in terms of gold. As gold became more plentiful, its value decreased.

It was typical for the next 130 years for western economies to back their paper money with gold. In most cases, paper money was convertible. Holders of the paper money could demand gold in exchange at a rate set by the government. So they could bring their paper money to the government and get the predefined amount of gold whenever they wished. Ah, ha. But in times of national emergencies, obviously World War I and then again, World War II, nations, United Kingdom among them, abandoned the gold standard, and it suspended the convertibility of their currencies into gold. Why would they do that?

Well, suspending convertibility allowed nations to finance some of the costs of the war by issuing more currency than their gold stocks would have previously permitted. They wished to buy more munitions, buy more soldiers, and buy more of all the other war goods that were required, and they did not want to be limited by the amount of gold in their repositories. But, at the end of World War I and again at the end of WWII, nations did return to the gold standard. But they quickly experienced problems, problems that they had not had before.

The supply of gold was growing too slowly and also too erratically to allow the supply of money to keep pace with growth in the world's developed economies. Money in the form of gold was not growing as rapidly as production in the post-World War II economies of the nations of the world. So for a time, the International Monetary Fund, and we will talk about them in a future lecture, attempted to keep the gold standard working by supplementing the supply of gold with paper gold that were called special drawing rights. But, the gold standard ended, as Redish reminds us, with President Nixon's decisions to suspend convertibility, to make a break between the number of U.S. dollars and the quantity of gold held by the United States.

Today, in western economies, we have pure fiat monies that are backed by no commodity at all. The money is valued partly because governments declare the money to be "legal tender for all debts public and private." But ultimately, money is valued because people agree it is valuable. It is valued because people agree to accept money in exchange. It is valuable because people believe they can accept money and then turn around and purchase useful things whenever they wish.

Four important themes have emerged from our examination of the evolution of money. First, money is truly a social contract in which the members of a society agree to accept money in exchange for goods and services. It is an act of faith for me to give something that is truly useful, an axe or a pound of meat, in exchange for a piece of paper that really would not even do a very good job of lighting a cigarette or starting a fire. It is true that the words "In God We Trust" are printed on the back of our bills. But if we want to understand why the dollar has value, we would be far better off with the words, "In One Another We Trust."

Second, the social contract that is money has developed gradually through history because it has taken time to develop the trust necessary to exchange

something of intrinsic value, a pound of nails, for something of no intrinsic value, a British pound note. That trust had to be developed very slowly and had to be developed in the context of the codes, the laws, and the belief of the society that began to accept different forms of money.

Third, the contract has developed as it has because members of society have constantly sought to meet 2 goals. I have always found that those goals to be in competition with one another. They have constantly sought ways of changing the money contract to lower the cost of trade. We want trade to be efficient and inexpensive, so that we could do more of it. But at the same time, we have wanted to make sure that we adopt a money that holds its value. Throughout history, government has played a crucial role in development of the money contract. From coordinating the choice of a particular commodity, to ensuring that the contracts made by goldsmiths were honored so those goldsmiths did not just renege, to setting up rules for the coining of precious metals, to developing laws that define the powers and responsibilities of the Federal Reserve.

So, government is essential to organization of monetary arrangements, and that is not surprising. We are government. A fiat money system is highly efficient. Valuable metals such as gold and silver are not tied up as backing for money but are released to alternative uses in electronics, jewelry, and many other purposes. The Federal Reserve can allow the supply of money to keep pace with the growth in our nation. But our fiat money holds its value only if our Federal Reserve keeps the supply of money from growing too rapidly. If the Fed fails, inflation results, and inflation is the modern counterpart to seigniorage.

Thank you very much.