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ECON 101: THE VALUE OF MONEY

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Econ 101: The Value of Money

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About the Series

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About the Author

Dr. Coats is a fellow at the Johns Hopkins Institute for Applied Economics, Global Health, and the Study of Business Enterprise. He retired from the IMF after 26 years of service in May 2003 to join the Board of Directors of the Cayman Islands Monetary Authority. He was chief of the SDR division in the Finance Department of the IMF from 1982–88 and a visiting economist to the Board of Governors of the Federal Reserve in 1979. In March 2019, *Central Banking Journal* awarded him for his “Outstanding Contribution for Capacity Building.” His recent books are *One Currency for Bosnia: Creating the Central Bank of Bosnia and Herzegovina*; *My Travels in the Former Soviet Union*; *My Travels to Afghanistan*; *My Travels to Jerusalem*; and *My Travels to Baghdad*. He has a B.A. degree in Economics from University of California, Berkeley, and a Ph.D. in economics from the University of Chicago.

During a discussion of Bitcoin with friends, it became clear to me that it might be helpful if I explained some fundamentals of how the value of money is determined. Like most everything else, money's value is ultimately determined by its supply and demand.

Demand for money reflects the public's need to keep an inventory of it in order to use it for making payments. Bitcoin are generally held as a speculative asset rather than for payments as almost no one will accept them in payment.¹

The supply of money is determined by those who created it, generally central banks. Generally central banks issue their currency, thus increasing its supply, by lending it (generally to banks) or by buying assets, generally their government's debt. When anyone holding that currency no longer wants it and has the right to redeem it, the central bank takes it back in exchange for the asset it purchased in the first place, thus reducing the money supply. Under the gold standard, currency was redeemed for gold. The rules governing a central bank's issuing and redeeming its currency defines the nature of its monetary regime. That is the topic of this econ 101 lesson.

As none of us has ever redeemed our currency, it is understandable that my friends confused spending their money with redeeming it. Spending it transfers it to someone else without changing its supply, while redeeming it reduces its supply. Cryptocurrencies add a new category to our discussion of money. As noted by "a billionaire hedge-fund manager... cryptocurrencies are a 'limited supply of nothing.'" ²

As discussed further below, the supply of Bitcoin increases slowly and steadily over time as determined by an unchangeable formula and Bitcoin cannot be redeemed for anything. The U.S. dollar and virtually every other national currency in the world grow at more erratic rates as determined by their issuing central banks. So what makes the value of the dollar relatively stable over long periods of time? The fall in its value by about 8% over the last month is nothing compared to bitcoin's fall of 23% over the same period and over 50% over the last half year. Over the past 15 years the dollar's value has declined less than 2% each

¹ <https://wcoats.blog/2014/01/25/cryptocurrencies-the-bitcoin-phenomena/>

² <https://www.washingtonpost.com/business/2022/06/03/crypto-skeptics-growing/>

year. Unlike Bitcoin, dollars are widely accepted for payments that are denominated in dollars, including our taxes, and thus held (demanded) to make such payments. Almost no Bitcoins are held to make payments as almost no one will accept them for payments. But I want to focus on a currency's supply.

There are fundamentally three broad approaches to determining the supply of a currency. Historically, the supply of most currencies were determined by fixing their price to what they could be redeemed for, such as gold or silver. I have called such a system for regulating money's supply, a hard anchor.³ The value of a currency can be fixed (the price set) to something real such as gold or a basket of goods. A country with a strict gold standard, which the U.S. never really had, issues its currency (dollars) whenever anyone wants to pay the fixed gold price for more of them. If the dollar price of gold in the market rises above its official price, there would be an arbitrage profit from buying gold from the central bank at its lower official price. Such gold could be resold in the market at the higher price. But the key point is that this mechanism (what I call currency board rules) of **redeeming** currency reduces its supply and thus reduces prices in this currency in the market (deflation). Several of the monetary systems I helped establish, work in this way (Bulgaria and Bosnia and Herzegovina).⁴

The most common system of monetary control today is for the central bank to determine its currency's supply by buying or selling it in the market (the Federal Reserve can buy treasury bills, etc. to increase the supply of achieve an inflation target (a much more complicated subject).⁵ Generally they do so by setting an intermediate target for a short-term interest at which market participants (banks) can borrow from the central bank. Such fiat currencies, such as the U.S. dollar, are not redeemable but are widely accepted in payment for goods, services, and debts.

This brings us to Bitcoin. The supply of Bitcoin is determined by a formula that predetermines its gradual growth to 21 million by 2140. There are currently about 19 million in existence. The supply is increased by giving them to successful

³ *Real SDR Currency Board*. https://works.bepress.com/warren_coats/25/

⁴ *One Currency for Bosnia: Creating the Central Bank of Bosnia and Herzegovina*.

<https://www.amazon.com/dp/B09429ZWC5/ref=dp-kindle-redirect?encoding=UTF8&btkr=1>

⁵ *Czech National Bank: Inflation Targeting in Transition Economies*.

https://www.cnb.cz/export/sites/cnb/en/about_cnb/.galleries/publications/download/infl_targ_case_cr.pdf

miners for verifying the legitimacy of each transaction (another complicated subject). Thus, the issuer (the formula) received services (protection against double spending the same coin) but no assets such as gold or treasury bills for creating and issuing new Bitcoins. Once created, an issued bitcoin can never be redeemed (i.e., the outstanding supply can never be reduced). When you spend or give away your Bitcoins you are circulating them to other holders, not redeeming them.

When my imaginary aunt Sally discusses Bitcoin and cryptocurrencies more generally, she tends to mix up the marvelous new payment technologies for paying my dollars all over the world with private money such as Bitcoin and Tether. She also doesn't seem to quite understand that most money has always been privately produced including the U.S. dollars that we spend in various ways (occasionally even by handing over cash).⁶

But these distinctions are critical when considering what role the government should play in our monetary system. The truly amazing technical progress we have experienced and the dramatic increase in the standard of living of the average person it has delivered over the last century was made possible by a government that provided a general framework in which we, the consuming beneficiaries of this progress, could make informed choices. Our government, wisely, generally did not make such decisions for use.

With that in mind consider “a letter addressed to Senate Majority Leader Charles E. Schumer (D-N.Y.), Senate Minority Leader Mitch McConnell (R-Ky.), House Speaker Nancy Pelosi (D-Calif.) and other congressional leaders, [from 26 influential technology personalities that] outlined what it described as potentially grave dangers of cryptocurrencies.”⁷ They are absolutely correct to expose and condemn the technical and economic weaknesses of blockchain technology—the distributed ledger with which Bitcoin claims to avoid the need for trusted third parties to record and document payment transaction (as happens on a centralized ledger when you pay from your bank deposit).

⁶ *A Shift in Monetary Regimes*, <https://wcoats.blog/2021/08/09/a-shift-in-monetary-regimes/>

⁷ *Letter in Support of Responsible Fintech Policy*, <https://concerned.tech/>

But the fact that foolish people invest in Bitcoin and other cryptocurrencies does not justify our government prohibiting and restricting them from doing so. The government requires the banks in which we put our money to publish properly audited financial statements of the assets backing our deposits and to set minimum capital requirements to protect against the possible loss of bank asset value (e.g., loan defaults). Cryptocurrencies claiming redeemability at a stable value (so called stable coins) should similarly be required to disclose the rules by which they operate and the composition and value of the assets backing their digital coins. In short, government regulations should help us decide what we want to buy and/or hold without restricting the ability of fintech pioneers to explore and innovate products to offer.

Overly restrictive regulations create incentives for incumbents to create barriers to competition. Large and intrusive governments tend toward corruption. The Federal Reserve System seems quite aware of these risks as it cautiously explores whether to compete with the private sector in developing a central bank digital currency.⁸

So when considering the government's role in money and payments be sure to clearly distinguish money from payment technology and limit government to setting the rules of the game that maximize the ability of private consumers to make wise choices. But perhaps the biggest policy decision of all is how the government should determine/regulate the supply of its currency, most of which is privately created. I support a currency whose value is fixed to something real (a hard anchor) and whose supply is determined by the market via currency board rules.⁹

⁸ *Econ 101: Retail Central Bank Digital Currency*, <https://wcoats.blog/2022/05/14/econ-101-retail-central-bank-digital-currency-cbdc%ef%bf%bc/>

⁹ *A Libertarian Money*, <https://wcoats.blog/2022/04/20/a-libertarian-money%ef%bf%bc/>