Discussion: How Should We Manage the Supply of Money?

Yiğit Kılıçoğlu*

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Extended question: Some economists argue that the money supply should always increase. Some of them believe that the current system, in which banks create money when they issue loans, is the best way to control the money supply, while others suggest giving the power to create money to the government/an independent committee. A minority believes that the money supply should be fixed/gold-like. Who is *right*? If this question is not very meaningful (i.e. the money supply is not really important), explain why.

About this discussion

We do not give enough thought to how the current monetary system functions, how it evolved over time, and what an ideal monetary system should look like. Topics like taxes, health care, inequality, climate change etc. are obviously worthy of discussion, but if we do not consider the monetary system while discussing modern societies, we can't really see the whole picture. This document contains arguments and ideas related to monetary systems that I came up with/discovered over the past two years. It is meant to be updated from time to time as I learn more.

Note on ideologies

It is very easy to get lost in political ideologies while talking about monetary systems. I refuse to associate the discussions in this paper with certain ideologies, and I ask everyone to view this debate from a technical/mathematical point of view. Questioning/supporting an economic theory does not make anyone a communist/capitalist/libertarian/vegetarian/socialist/moderate/anarchist. This especially goes to some people I have discussed economics with!!!

For this discussion specifically, it is entirely possible to build a communist/capitalist/libertarian/vegetarian/socialist/moderate/anarchist society using any of the three monetary systems explained below. The monetary systems of the US and China are not fundamentally different, but how they use the tools in their hands is very different.

*Yale College. yigitkilicoglu.com.

Money supply ↑↑↑, banks create money by issuing loans

The current system. Bank of England's 2014 Q1 bulletin explains it thoroughly. Check pages 15 and 16.

Arguments for:

1. Inflation encourages consumption.
2. There is no practical limit to the amount of loans, so anyone can get a loan and make investments when they want.

Arguments against:

1. Banks get too much power.
2. There would not be enough money in the economy to settle all debts, causing perpetual indebtedness.

My thoughts:

1. The main idea here is that consumption boosts the economy and thus should be encouraged. While consumption due to inflationary pressures somewhat artificially boosts the economy, these effects mostly get canceled by a recession in the future. The current monetary system heavily depends on the idea that we can play with the amount of money to boost the real economy. It just does not sound convincing to me that a sustainable, permanent growth in the real economy can be achieved by changing a few numbers. It is a viewpoint that I am still trying to understand. Also, I am not sure how healthy it is for the public to have a constant pressure from inflation. [The arguments for this view that I stumbled upon tend to be a bit vague, so it's a challenge for me to give a clear response]
2. This is the most convincing argument for this view. If someone is willing to take a risk and money is just a number in a bank account, why should they be prevented from giving it a try? The most rigorous counterargument I have found is by Positive Money. They argue (with nice graphics) that "the bulk of net new money creation is used for the purchase of pre-existing real estate and financial assets," and that there would still be enough loans to boost the real economy even if banks did not have the ability to create money.

1. I do not know and cannot estimate how much "power" banks have, or whether this is too much or too little. However, if this was an exam where wrong answers do not cause you to lose points, I would have circled the "T" for "true." In essence, banks are not much different than any other private company. They *host* your money just like how website hosting services host your code [1]. They sell you (money-related) products just like how a fisher sells you fish. My instincts tell me that there is not much conceptual difference between the current lending system and a fishing industry where a fisher can spawn fish at a magic portal as long as they can find a buyer.
2. This is related to the "banker on a desert island" story, as explained here. I was initially very certain that this argument was valid, but now it occurs to me that it might not be that simple. More specifically, a high *velocity of money* might mean that the same money

[1] This is incorrect! Interestingly, the legal relationship between a bank and a depositor is a debtor/creditor relationship, and not a customer/vault relationship. So, when one deposits cash to a bank account, they surrender legal title to that cash and receive a right to ask the bank to pay back its debt. If I remember correctly, this counterintuitive approach comes from a court decision in England in the 18th century. I will try to find the book where I first saw this.

can be used in more than one payment for the same loan. The link above does give a sense of this idea, but overlooks the fact that once the loan is repaid, the money that was used to settle the loan no longer exists.

Money supply ↑↑↑, *public* money creation

The money supply is expected to increase. A group(s) decide(s) how much new money should be introduced, and injects this money directly into the economy. The group(s) is usually a committee nominated by the government, as in Positive Money's proposal.

Arguments for:

1. Money would be "debt-free."

Arguments against:

1. A central committee cannot really decide how much money should be printed.

My thoughts:

1. This is in contrast to "debt-based" money, which the supporters of this argument use to describe the money in the current system. The vast majority of broad money in the current system is in the form of bank deposits created by commercial banks themselves (van Lerven et al., 2014, p. 15). This implies that for almost every unit of money in circulation, someone is paying interest for it to a bank. If there is no debt in the economy, then there isn't much money in circulation either. Money is "debt-free" when it is introduced to the system directly without being attached to a loan agreement. Minting coins and distributing them would be an example of "debt-free" money creation. A challenge for this approach is to decide who should receive the new money, and to calm down the others.

1. I need to learn more about what exactly such a committee would do before making a comment about this argument. Skipping for now.

Money supply is fixed/gold-like

The key property of systems in this category is that creating money is hard, meaning that it requires time, energy and resources. Gold, silver and many cryptocurrencies fall into this category.

Arguments for:

1. Prevents governments from possessing too much power.
2. This system is much fairer.

Arguments against:

1. The Great Depression would have been far worse if gold convertibility hadn't been suspended.
2. High inflation when a lot of currency is introduced in a short span of time.
3. There won't be enough money in the economy.

4. Hoarding.

5. Deflation would lead to unemployment.

6. Deflationary spirals can occur.

My thoughts:

1. I am not really sure what "power" exactly means here, nor do I have a strong opinion about how much "power" a government should have. From a technical perspective, yes, my instincts tell me that a government would have less "power" than now if it was unable to print money when it wanted to. Whether or not we want that is too political for this article.

2. Everyone has a different definition of fairness. My definition of fairness in this context would be that no one can increase their percentage ownership of the money supply without spending time, energy and resources. Monetary systems in this category make sure that every piece of money represents some effort in the past, so I tend to agree with this argument.

1. What essentially happened was that the stock market operations turned into a speculation business and people lost all of their money while trying to profit. Returning to the "ownership percentage" idea from my essay titled *Thoughts on Money*, the percentage of a very small minority increased substantially, while the majority virtually lost all of their stake. It is very unfortunate that many innocent people had to suffer from the effects of this financial crisis. Check my thoughts about 6 for an explanation of why gold was not the culprit here.

2. This happened when the Spanish came back from South America with huge sums of gold. Their percentage ownership skyrocketed while decreasing the percentage of the rest of the population. Prices rose as the amount of goods hadn't changed much, making everyone apart from the Conquistadores poorer. The main problem here is how sudden this shift in economic power was, and it is a real problem for systems that are based on metals. In cryptocurrencies this is not really an issue as such surprises do not happen.

3. This is correct, but only in the ancient times. Arguments like this are unfortunately very common. Imagine an ancient token economy with 10 people. 1000 tokens might be enough for this small population. If the population suddenly jumped to 10,000,000, we would all agree that 1000 tokens would no longer be "enough." If we introduced new tokens to the economy to bring the number of tokens to 1,000,000,000, then we would think that these tokens would be "enough." It is natural to think that the economy just needed more tokens. However, what we really needed was a smaller minimum unit of transaction. If we had 1000 tokens for the larger population, the price tag for an apple would be something like 0.000001 tokens. If we can't divide a token, we can't transfer 0.000001 tokens to the seller. Introducing money is just an accounting trick to solve this problem: with 1,000,000,000 tokens, an apple would cost 1 token, which is transferable. If our tokens were divisible, we would be able to pay 0.000001 tokens just as well. This division wasn't possible in the ancient times, but it is trivial in today's digital world. Even 1 token can be enough for the entire world if it is arbitrarily divisible.

4. The argument here usually goes like this: if the currency increased in value over time, people would start stashing money and spending less, thus reducing the money in circulation and eventually killing economic activity. This is a valid concern when the currency can't be transferred in small quantities, and is related to 3 . Coming back to the economy in

the previous bullet point with 1,000,000,000 tokens and 10,000,000 people, if all but 1,000 tokens were "hoarded," then 1,000 indivisible tokens would not be enough to settle all payments in the economy. However, if these tokens were arbitrarily divisible, arbitrarily small payments would be possible and the economy would function as usual. Note here that the prices would adjust to the reduction in the money supply, so a car that cost 1000 tokens would now cost significantly less than 1 token. Check out David Schwartz's StackOverflow answer on hoarding.

5. This video does not explain the argument very rigorously, but it provides a good overview. The argument is that as prices fall, companies would have to reduce their nominal expenses (correct), and so they would cut wages. Employees would reject lower wages, causing some of them to be laid off, as the costs have to be cut in some way. I think that people would be smart enough to understand that lower wages do not mean less purchasing power than before (in this deflationary economy, of course). Even if they get laid off and find another job with a lower wage, it wouldn't take long for them to realize that they can still afford the things they could afford previously.

6. In monetary systems like the current system, I do see why Irving Fisher's fear of deflationary spirals is not unfounded. However, such a problem does not really exist when the money supply is fixed/gold-like and/or money isn't created when banks make loans. Some supporters of this argument, like Positive Money, usually point to Fisher's article from 1933. Their conclusion from the paper is roughly that gold's fixed supply was the cause of the deflationary spiral in those times. However, the correct conclusion should be that the cause was the ability of banks to create money when they issue loans. This does not mean that a fixed supply is a bad idea. It means that a fixed supply *and* money creation with loans cannot work *together*. Among Fisher's conclusions, the (2) in #24 implies that money was indeed being created when banks were issuing loans. #20, #28, #29, #30 say that the main culprit was the decrease in the money supply as loans were being repaid. If the money supply was independent from the amount of loans, such a destructive spiral would not have happened. I recommend `bitcoin.it`'s article on the topic.

What I need to learn

- How does the *fraction* of *fractional reserve banking* relate to how banks create money? I am struggling to describe and compare how a bank's balance sheet would be like in the following scenarios:
  1. Fractional reserve banking & fixed/gold-like money supply.
  2. Fractional reserve banking & *public* money creation.
  3. Fractional reserve banking & money creation by issuing loans (especially when the capital requirements and reserve requirements come into play).
  4. Full reserve banking & fixed/gold-like money supply.
  5. Full reserve banking & *public* money creation.
  6. Full reserve banking & money creation by issuing loans (especially when the capital requirements and reserve requirements come into play).
- How exactly does Keynesian economics attempt to use human psychology to our advantage? This is something that I have heard from many of its supporters.

Useful links

- Dods Research alleges that 90% of Members of Parliament in the UK do not know how money is created in the current monetary system (in 2014, at least).
- *Deflation: Current and Historical Perspectives.* Sample.
- The native inhabitants of Yap islands can teach us a lot about the nature of money.

Acknowledgements

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References

[1] Anon Econ. *Why Deflation is Bad.* 2016. URL: https://www.youtube.com/watch?v=a9YrwaKhNjg.

[2] bitcoin.it authors. *Deflationary spiral.* May 2013. URL: https://en.bitcoin.it/wiki/Deflationary_spiral.

[3] Legal Services Commission. *Banker Customer Relationship.* 2018. URL: https://lawhandbook.sa.gov.au/ch10s06s02.php (visited on 03/31/2022).

[4] *Deflation: Current and Historical Perspectives.* Studies in Macroeconomic History. Cambridge University Press, 2004. DOI: 10.1017/CBO9780511607004.

[5] Irving Fisher. "The Debt-Deflation Theory of Great Depressions". In: *Econometrica* 1.4 (1933), pp. 337–357. ISSN: 00129682, 14680262. URL: http://www.jstor.org/stable/1907327.

[6] Andrew Jackson, Graham Hodgson, and Ben Dyson. *Flexibility in Sovereign Money system.* Positive Money. URL: https://positivemoney.org/our-proposals/flexibility-in-sovereign-money-system/.

[7] Frank van Lerven. *Money Creation & Interest: Is there enough money to pay off all the interest? (Part 1).* Feb. 2017. URL: https://positivemoney.org/2017/02/interest/.

[8] Frank van Lerven, Graham Hodgson, and Ben Dyson. *Would there be enough credit in a sovereign money system?* Positive Money. URL: https://positivemoney.org/publications/enough-credit-sovereign-money-system/.

[9] Michael McLeay, Amar Radia, and Ryland Thomas. *Money creation in the modern economy.* London, UK: Bank of England's Monetary Analysis Directorate, 2014. URL: https://www.bankofengland.co.uk/quarterly-bulletin/2014/q1/money-creation-in-the-modern-economy.

[10] Dods Research. *Parliamentary perceptions of the banking system.* Positive Money, July 2014. URL: http://positivemoney.org/wp-content/uploads/2014/08/Positive-Money-Dods-Monitoring-Poll-of-MPs.pdf.

[11] David Schwartz. *Does hoarding really hurt Bitcoin?* Sept. 2011. URL: https://bitcoin.stackexchange.com/questions/408/does-hoarding-really-hurt-bitcoin.