

Fabio De Masi

# THE ROLE OF MONEY IN THE ECONOMY

This article is a supplement to the study *When Finance Meets Big Data: Financial Technology and the Scramble for Africa* and connects with Chapter 4 of the study. It is recommended for readers who want to learn more about economic theories of money.

“Money is not metal. It is trust inscribed. And it does not seem to matter much where it is inscribed: on silver, on clay, on paper, on a liquid crystal display.”<sup>1</sup>

**Niall Ferguson**, Professor of Economic History and Senior Fellow of the Hoover Institution

Generations of economists have argued over whether money has any (long-term) impact on economic production. It may seem like an odd debate to outsiders. Do we not all know that “money makes the world go round”?

However, even though central banks nowadays mainly agree that (at least in the short run) money affects our economy, most standard economic textbooks feature models without banks and money. Let us briefly revisit this controversy over money. It is a central dividing line between different economic theories. Hence, it may be helpful to better understand why, as argued in the study *When Finance Meets Big Data: Financial Technology and the Scramble for Africa* (<https://www.rosalux.de/en/publication/id/50039/when-finance-meets-big-data>), credit and money is central to investment and economic production.

Why does this matter for understanding debates around financial technology (FinTech)? Because, as shown in that study, most of the money we use for our daily transactions is bank money or just numbers on computers.

Banks command the bulk of the money creation power in society. And most of the things FinTech firms do is shifting bank money from A to B without “disrupting” anything but rather just building a data-driven business model upon banks.

Further, credit money is central to the dynamics of capital accumulation, technological progress, and high growth rates witnessed during the expansion of modern capitalism. However, as capitalism itself it can equally be a destructive force. It may feed bubbles and financial crises, trigger debt

crises, or fund environmentally-harmful economic activities. Hence, the crucial question for shifting economic policy is how to better target credit towards socially-desired activities. This material is intended to provide complementary theoretical background to those interested in money.

## 1 THE ORIGINS OF MONEY

A lot of standard economic textbooks claim that money has three functions: unit of account, store of value, and medium of exchange. However, anthropologists have found that early civilizations (i.e. Sumerians) knew credit and debt relations that were fundamentally accounting entry-payments systems (“banking”) before any evidence of physical money systems (commodity money or coinage such as in Babylon or ancient Egypt).<sup>2</sup>

“Before there was money, there was debt.”<sup>3</sup>

**David Graeber** (1961–2020), Professor of Anthropology and author of *Debt: The First 5000 Years*

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<sup>1</sup> N. Ferguson, *The Ascent of Money: A Financial History of the World*, 2nd ed., London: Penguin, 2008, p. 28. <sup>2</sup> J. Ryan-Collins, T. Greenham, R. Werner, and A. Jackson, *Where Does Money Come From? A Guide to the UK Monetary and Banking System*, 2nd ed., London: New Economics Foundation, 2012, pp. 34–35. <sup>3</sup> D. Graeber, *Debt: The First 5000 Years*, Brooklyn, NY: Melville House Publishing, 2012.

Another historical interpretation of the emergence of money is that ancient societies measured debt owed for injuries. Physical harm affected the economic capacity of a community to survive under harsh living conditions. In that view, money was also a means of settling debt and preventing further bloodshed. Its value reflected the severity of injury. In German, the word debt (Schuld) also means guilt (in the sense of being guilty of something) and Wergeld (or Sühnegeld) was an old Germanic expression and judicial category to settle feuds.<sup>4</sup>

The role of money is still at the heart of the controversy in economics. The following chapters serve to obtain a better understanding of money, as well as if and why money matters. For that purpose, some stylized facts about money in different economic schools of thought will be briefly introduced before we look at the process of money creation in the banking system.

## 2 MONEY IN CLASSICAL ECONOMICS

Classical economists such as Adam Smith, David Ricardo, and Karl Marx witnessed the early phases of industrialization. They assumed the economy in essence to work like a barter economy. To do justice to Marx, he started to understand the principles of a credit economy although he was contradictory about it at times.<sup>5</sup>

Money was primarily seen as a store of value (for future consumption) and a means of exchange to facilitate trade. In other words: if person A produces a table and person B produces food, and A wants B's food but B doesn't need a table, they could still engage in economic exchange. A would pay money to B and B could use that money to buy a chair instead of a table.<sup>6</sup>

Now imagine a stationary economy with mainly agriculture and no growth. Everything which is being produced is also being consumed. Hence, there are no savings. People produce what they need in order to ensure bare survival. Labour is the only source of value (as even tools or "machinery" must be produced by workers and the land must be worked by them as well). To expand production and become more productive (producing more output in the same amount of time) and freeing up resources for industrial production, workers need to make sacrifices first. They must produce and consume less food (potentially going hungry) and devote some of their labour time to invent better tools. So essentially saving comes first, investment second.

Classical economists, whether liberal or Marxist, hence agreed that investment and capital accumulation require expropriation of workers (paying them less than they produce in terms of labour value) to accumulate capital and advance production.<sup>7</sup>

Hence, in classical economics, capitalists expropriate workers in order to invest, while rentiers such as landowners (or in modern terms maybe the finance sector) demand payments in the form of rent which are not based on their own productive contribution to the economy. Classical economists had a class analysis of production independent of their political preferences. Expropriation of workers was seen as a necessary precondition for economic progress from economic philosophers such as Adam Smith to Karl Marx.

However, money in classical economics is just a "veil" with no impact on real output. Increasing the money supply would just increase (or "bid up") prices and hence inflation. This corresponds with a preference for monetary systems backed by gold or other precious metals. Issuing more money will just cause inflation and lower the value of money in terms of the metal (this is the commodity or metallist theory of money).<sup>8</sup>

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4 Ryan-Collins et al., Where Does Money Come From? P. 35. 5 One famous analogy is when Marx describes money being spent to produce commodities to attain more money, or his famous critique of Quesnay's Tableau Economique, see B. N. Ganguli, "Karl Marx on Quesnay", Indian Economic Review, vol. 7, no. 2, pp. 129-69. 6 Ryan-Collins et al., Where Does Money Come From? Pp. 30-31. 7 A. Lowe, "Adam Smith's theory of equilibrium growth", Essays on Adam Smith, Andrew S. Skinner and Thomas Wilson (eds.), Oxford: Clarendon Press, 1975, pp. 415-25. 8 B. Eichengreen, Globalizing Capital: A History of the International Monetary System, Princeton: Princeton University Press, 1996, pp. 20-27. 9 There exist notable exceptions, such as one of the most important neoclassical economists, Léon Walras, who tried to demonstrate the simultaneous equilibrium across many markets and was politically sometimes considered a socialist because he wanted to nationalize land to do away with other forms of taxation, and because he was a social reformer. See R. Cirillo "The 'Socialism' of Léon Walras and His Economic Thinking", The American Journal of Economics and Sociology, vol. 39, no. 3, pp. 295-303.

## NEOCLASSICAL ECONOMICS: MONEY IS NEUTRAL AND INVESTMENT REQUIRES PRIOR SAVINGS

Neoclassical economists view money as neutral to long-term economic output. Money will only affect prices but not real output and savings precede investment.<sup>16</sup> Hence, banks play no important role in their models. Neoclassical economists put forward a “theory of loanable funds” where banks in essence collect deposits from willing savers and lend those deposits to investors.

### 3 MONEY IN NEO-CLASSICAL ECONOMICS (LOANABLE FUNDS THEORY)

Neoclassical economics emerged in the late 19th and early 20th century. The neoclassical economists that dominated academia in the 1980s and 1990s tended to be pro-market, pro-business, and critical of government intervention.<sup>9</sup> They assumed that markets will tend towards a natural equilibrium of supply and demand if prices are sufficiently flexible. For instance, neoclassical economists assume that there exists no involuntary unemployment if prices (wages, in this case) are fully downward flexible (without government intervention such as minimum wage protection). Unemployment (excess supply of labour) would lead to workers accepting lower wages. As wages (and hence the price of labour) fell, more firms would hire workers and hence the price mechanism would eliminate any involuntary unemployment. While the economy is made up of millions of individual transactions, the price mechanism would always steer different markets (the capital market, the labour market, the goods market) towards equilibrium.<sup>10</sup>

In neoclassical economics, capital (and hence not only labour) contributes to economic production (according to marginal productivity of each factor of production).<sup>11</sup> In neoclassical economics, there is productivity and the price mechanism instead of class conflict. Firms and private households respond to price incentives when deciding whether to consume or spend. For instance, private households (which were still workers in classical economics) sacrifice consumption voluntarily as they are offered a particular interest rate on savings. The available pool of capital simply depends on “volitional decisions of economic units to save their money and abstain from consumption”<sup>12</sup> and long-term growth is largely determined by exogenous technological progress and the combination of labour with capital.<sup>13</sup>

Neoclassical economists assumed a decreasing marginal productivity of labour and capital,<sup>14</sup> in the same way agricultural land would become less fertile over time if it gets overused. In other words: putting an additional worker at the same machine will contribute positively to economic output but with a lower rate of productivity. An additional worker (the so called marginal worker) will contribute by less than the previous worker, as workers will start “stepping on each other’s toes” if there are too many employed at the same machine. Hence, in order to induce additional production or hire more workers, it is necessary to lower wages if the other factor of production which is capital (i.e. the machines) is fixed.<sup>15</sup>

In essence, the theory of marginal productivity stipulates that everybody gets their fair share of production (otherwise markets will not clear). If minimum wages set wages higher than the marginal productivity of unemployed workers, unemployment will persist and markets will not clear. Conversely, more investment at a given rate of marginal productivity of capital requires lower interest rates, which are a result of the supply and demand of savings.

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<sup>10</sup> Therefore neoclassical models rely on a neutral auctioneer, perfect information, and economic subjects processing all relevant information in real time, see Ryan-Collins et al., *Where Does Money Come From?* Pp. 30–31. <sup>11</sup> In essence, how much more is being produced by adding another unit of labour or capital while holding the other factors of production constant. <sup>12</sup> B. J. Moore, “Saving Is Never a Constraint on Investment”, *South African Journal of Economics*, vol. 74, no. 1, p. 2. <sup>13</sup> R. Solow, “A Contribution to the Theory of Economic Growth”, *Quarterly Journal of Economics*, vol. 70, no. 1, pp. 65–94. <sup>14</sup> That notion can be challenged empirically as most industries display economies of scale and constant marginal productivity if an economy is below full utilization of its productive capacity. Further, the measurement of marginal productivity is itself a function of distribution, as the Post-Keynesian economist Piero Sraffa demonstrated in forcing the “dean” of neoclassical economics, Paul Samuelson, to concede defeat in that theoretical debate which is still however not reflected in many economic textbooks. See S. Keen, *Debunking Economics: The Naked Emperor Dethroned?* 2nd ed., London/New York: Zed Books, 2011, pp. 129–42. <sup>15</sup> Neoclassical economists assumed markets to clear and hence an economy to operate at full capacity utilization which explains the fixed factor of production. These assumptions were later relaxed and adjusted to incorporate critique of the theory of declining marginal productivity. <sup>16</sup> Ryan-Collins et al., *Where Does Money Come From?* Pp. 31–32.

More investment and hence lower interest rates require increasing savings. Production can be only increased at the expense of wages or consumption. For example, if there are insufficient savings, interest rates will rise, inducing private households to save more and forego consumption today for higher consumption in the future. If savings are too high (too little investment demand), interest rates will fall and hence induce lower savings and higher investment.

Basically, in neoclassical theory unhampered markets maximize economic output and they work best without government intervention. There is no politics, no class conflict, and no effect of money on real economic output (adjusted for price increases or inflation).<sup>17</sup> In other words: if the real world doesn't look like the neoclassical model, it is not the model that is the problem, but rather the real world, as the government has interfered too much with the economy.<sup>18</sup>

#### 4 MONETARISM: WHEN TOO MUCH MONEY CHASES TOO FEW GOODS

Monetarism is the underlying monetary theory of free market economics, stipulating the neutrality of money and urging central banks to let the money supply grow at a rate that corresponds with the appropriate growth rate of the economy. It was popular at the beginning of the 1980s but soon discarded by central banks as it led to very volatile interest rates.<sup>19</sup>

“There may have been people making the actual policy decisions ... who never believed for a moment that this was the correct way to bring down inflation. They did, however, see that [monetarism] would be a very, very good way to raise unemployment, and raising unemployment was an extremely desirable way of reducing the strength of the working classes.”<sup>20</sup>

Sir Alan Budd, founding member of the Bank of England's Monetary Policy Committee

Monetarism is underpinned by the so-called Quantity Theory of Money which stipulates

$$M \times V = P \times Y$$

Where M denotes the money supply, V the velocity of money (how often money changes hands), P the price level, and Y the real economic output. Y or economic output is seen as given (production is fully utilized and all factors of production, capital, and labour are employed) and hence the growth rate of the economy is determined by exogenous technological progress. V is also assumed to be quite stable in the short run. Hence, any increase in the money supply beyond that growth rate will just bid up the price level without affecting real output (too much money chasing too few goods).

### MONETARISM: WHEN TOO MUCH MONEY CHASES TOO FEW GOODS, INFLATION KICKS IN

You may imagine the central bank operating like a helicopter that throws money out onto the streets which people then pick up and carry into the supermarket. In the supermarket they find only a given amount of chocolate, toothpaste, or toilet paper. A larger amount of money chasing those goods will not lead to greater supply of said goods as the economy is already operating at full capacity. More money will just bid up prices as businesses will react to higher demand by increasing prices. Soon the people will realize that they have more money in their wallet but it can not buy them more as prices also rise.

17 While the newer generation of neoclassical Keynesian synthesis or New Keynesian models allow for some short-term effect of money on production as well as rigid prices (i.e. downward sticky wages) the prevailing view is still that money is neutral in the long run (when markets tend to clear towards an equilibrium). This is why John Maynard Keynes once famously remarked in a critique of neoclassical economics “in the long-run we are all dead!” See D. Evans, “How long is the long run?” World Bank Blogs, 11 April 2018, available at <https://blogs.worldbank.org/impactevaluations/how-long-long-run>. Last accessed on 27 January 2023. 18 See Keen, *Debunking Economics*, pp. 103–29. 19 B. J. Moore, “Unpacking the Post Keynesian Black Box: Bank Lending and the Money Supply”, *Journal of Post-Keynesian Economics*, vol. 5, no. 4, pp. 527–38. 20 G. Eaton, “Sir Alan Budd's past criticisms of the Tories”, *New Statesman*, 6 July 2010, available at <https://www.newstatesman.com/business/economics/2010/07/class-war-budd-thatcher-cuts>. Last accessed on 27 January 2023.

Inflation is thus always and everywhere caused by too much money, and the primary role of central banks is to ensure that money supply grows at a certain rate but not beyond that rate, by targeting the money supply or adjusting interest rates accordingly.<sup>21</sup>

## 5 THE OTHER VIEW: CREDIT THEORIES OF MONEY

Post-Keynesian economists in the tradition of John Maynard Keynes tend to argue in favour of government intervention to stabilize the economy. Post-Keynesians, as well as the conservative economist Joseph Schumpeter, opposed the view of the neutrality of money and the loanable funds theory. In their view credit is key to investment and growth, and endogenous credit demand determines the money supply. This means that business and households rather than central banks determine credit demand, while central banks are just able to affect the money demand indirectly via the price of money (the interest rate).

Deeper credit markets, such as those with a high percentage of domestic bank credit in relation to GDP, will positively affect credit and hence investment<sup>22</sup> as opposed to dependency on volatile short-term capital flows from foreign investors. Hence, more credit or money does not necessarily raise inflation if it raises supply and the productive capacity of the economy.<sup>23</sup>

It should be noted, however, that loans can be granted for different purposes, such as financing investment which increases the productive capacity of an economy, or compensating for a shortfall in consumption demand (for example because wages are too low to sustain a certain level of consumption). If there is too little productive investment but a lot of loans for consumers, that might not be sustainable.

Capitalists want to make profits and hence if wages were too high, they would not produce anything. However, wages are not only a cost factor of production; they also affect demand for goods and services. Hence, workers do not necessarily need to sacrifice consumption in a monetary economy in order to enable investment. Credit can also finance investment and pay for itself by enabling future profits.

Markets will not always clear. They may only grant suboptimal economic outcomes without government intervention. Economic agents operate under fundamental uncertainty about the future without perfect information. They may for instance hoard money in times of uncertainty, leading to less consumption demand (higher savings). Hence, businesses might not sell all their goods and services, and this will most likely reduce investment expenditure when planned investment and planned savings diverge (leading to lower economic output).<sup>24</sup>

This may lead to involuntary unemployment. Lower nominal wages will in turn not automatically ensure that unemployment is reduced. Wage reductions may negatively affect the purchasing power of workers, further hampering consumption demand and hence business investment.<sup>25</sup> Likewise, lower interest rates will not clear markets automatically. In times of negative economic expectations even lower interest rates (making credit cheaper) might not induce higher investment if consumption demand is low. Hence, governments should stabilize economic output via government expenditure and central banks should keep interest rates low to induce investment and stabilize expectations unless the economic capacity is fully utilized and the economy overheats.<sup>26</sup>

“In the United Kingdom, money is endogenous—the Bank supplies base money on demand at its prevailing interest rate, and broad money is created by the banking system.”<sup>27</sup>

Mervyn King, former Executive Director of the Bank of England

21 T. M. Humphrey, “The Quantity Theory of Money: Its Historical Evolution and Role in Policy Debates”, Federal Reserve Bank of Richmond Economic Review, May/June 1974, available at <https://core.ac.uk/download/pdf/6917453.pdf>. Last accessed on 27 January 2023. 22 Hansjörg Herr, “Credit expansion and development: A Schumpeterian and Keynesian view of the Chinese miracle”, European Journal of Economics and Economic Policies: Intervention, vol. 7, no. 1, pp. 71–89. 23 Post-Keynesian economists assume that in a capitalist market economy unemployment and economic disturbances are rather the norm and economies operate below full capacity utilization, which thus requires government intervention for stabilization. 24 J. Snippe, “Finance, saving and investment in Keynes’s economics”, Cambridge Journal of Economics, vol. 9 no. 3, pp. 257–69. 25 In essence, Keynes argued that even if we were to accept the notion of marginal productivity in neoclassical economics (which Post-Keynesian economists usually challenge) whereby employment will only increase if wages are lowered, a reduction of the nominal wage can lead to lower consumption demand and hence a lower price level. But if the price level falls to the same or even to a larger extent than nominal wages, the real wage might remain the same or even increase; see D. J. B. Mitchell, “Wages and Keynes: Lessons from the Past”, Eastern Economic Journal, vol. 12, no. 3, pp. 199–208. 26 R. L. Wray, “A Post Keynesian view of central bank independence, policy targets, and the rules versus discretion debate”, Journal of Post Keynesian Economics, vol. 30, no. 1, pp. 119–41. 27 M. King, “The transmission mechanism of monetary policy”, Bank of England Quarterly Bulletin, 1994, no. 3, p. 264.



In Post-Keynesian and other credit theories of money the money supply is not directly controlled by central banks, but rather money demand is endogenous.<sup>28</sup> For instance, if an entrepreneur demands a loan of EUR 100,000 for investment at a commercial bank at a given interest rate, the bank might agree to the loan. Loan decisions might depend on the entrepreneur's collateral and whether they made enough profit in the past, and hence the banks trust that the entrepreneur is able to service the debt and that level of interest. The bank then will enable the entrepreneur to draw upon EUR 100,000 in their account by just entering those numbers in a computer. The money has been created out of thin air (so called fiat money, not backed by gold or anything else) without relying on anybody's prior deposits as in the loanable funds theory. Instead, the loan created the deposit in the entrepreneur's account. Once the loan is repaid to the bank from future profits including interest, the money once again ceases to exist.<sup>29</sup>

## 6 CREDIT: HOW MONEY IS CREATED IN THE REAL WORLD

Banking and the creation of money is hence primarily an accounting exercise, like in the old days of the Sumerians when they recorded debts, as was explained at the beginning of this text. This bank money is the most important form of money that circulates in our economy, next to cash (which is limited) and central bank reserves (which primarily do not circulate in the economy with private households).

Let us consider the following example: an entrepreneur named Thando wants to borrow ZAR 100,000 (South African rand) from Standard Bank, promising to pay back the amount plus interest over the next three years, according to an agreed monthly payment plan.<sup>30</sup>

**T-chart 1: Loan by Standard Bank**

Standard Bank Balance Sheet (Step 1)	
Assets	Liabilities
(What borrowers owe to Standard Bank + bank's money)	(What the bank owes to the depositors + bank's net worth)
Loan to Thando of ZAR 100,000	

Double entry bookkeeping requires equal and opposite accounting entries. Standard Bank creates a bank account for Thando and gives it a balance of ZAR 100,000. That is the liability of Standard Bank to Thando.

**T-chart 2: Banks create loans (assets) and thereby also deposits (liabilities)**

Standard Bank Balance Sheet (Step 2)	
Assets	Liabilities
(what borrowers owe to Standard Bank + bank's money)	What the bank owes to the depositors + bank's net worth
Loan to Thando: ZAR 100,000	Thando's new account: ZAR 100,000

Hence, credit and thus money has been created by an accounting exercise in a computer database.

**“Each and every time a bank makes a loan, new bank credit is created—new deposits—brand new money.”**

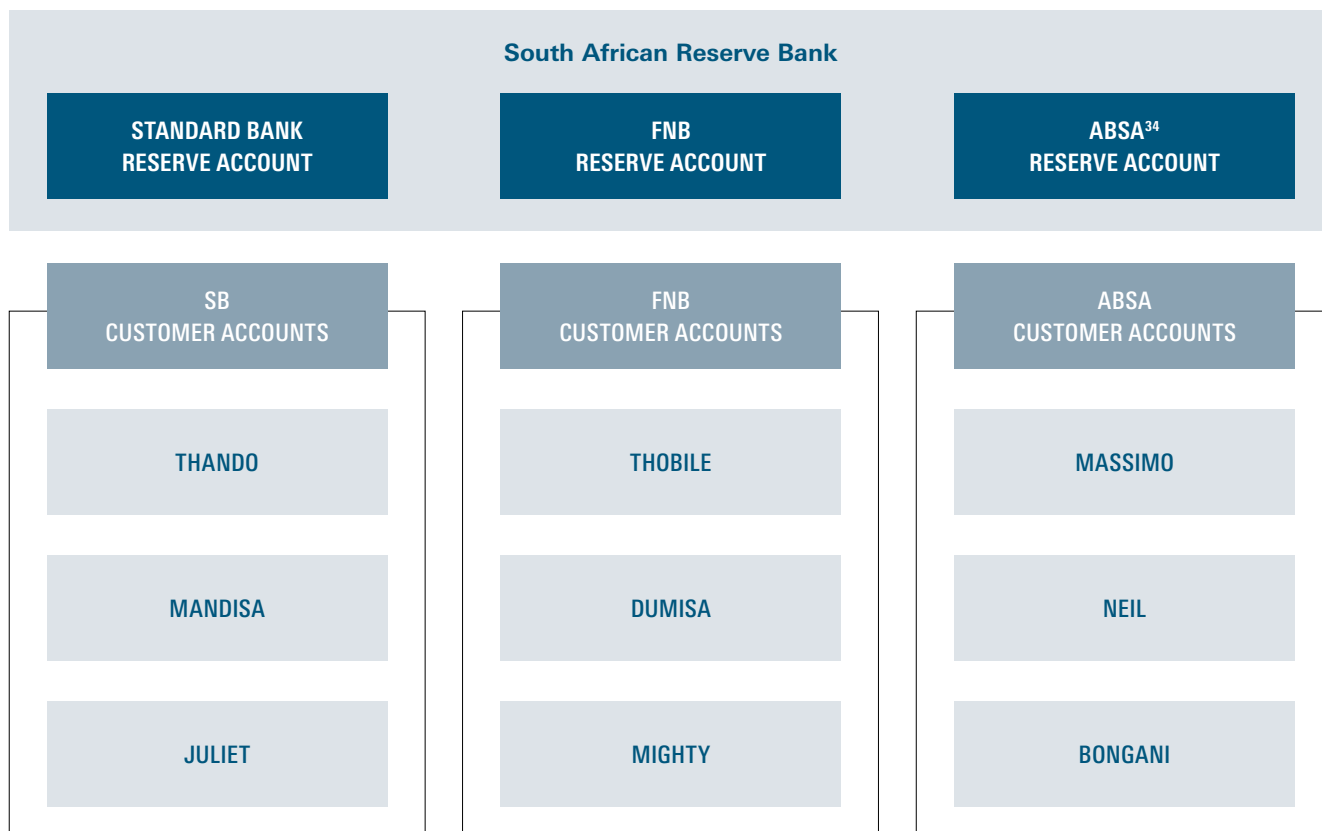
**Graham Towers, former Governor of the Central Bank of Canada<sup>31</sup>**

The central bank thus cannot directly affect money supply. New money being issued or not depends on credit demand and credit being granted by banks. The central bank can only affect the interest rates at which banks can borrow at the central bank<sup>32</sup> and capital and reserve requirements for banks, which do not however limit bank lending during phases of credit expansion.<sup>33</sup>

Commercial banks have bank accounts with the central bank while businesses and private households have bank accounts with commercial banks. The money balances commercial banks hold in their accounts at the central bank are called central bank reserves.

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<sup>28</sup> B. J. Moore, “The Endogenous Money Stock”, *Journal of Post Keynesian Economics*, vol. 2, no. 1, pp. 49–70. <sup>29</sup> S. Faure, and H. Gersbach, “On the money creation approach to banking”, *Annals of Finance*, vol. 17, pp. 265–318. <sup>30</sup> The following explanations and illustrations were taken from the following publication and adjusted to the South African economy: Ryan-Collins et al., *Where Does Money Come From?* <sup>31</sup> G. Towers, “Minutes of Proceedings and Evidence Respecting the Bank of Canada”, Committee of Banking and Commerce, Ottawa, Government Printing Bureau, 1939, quoted in M. Rowbotham, *The Grip of Death*, Oxford: John Carpenter Publishing, 1998. <sup>32</sup> M. King, “The transmission mechanism of monetary policy”, p. 264. <sup>33</sup> Ryan-Collins et al., *Where Does Money Come From?* Pp. 92–110.

## Commercial banks and central banks reserve account



The quantity of central bank reserves is adjusted by the central bank to ensure that there are enough reserves in the system to make payments between banks. If that interbank market dries out because banks do not trust each other, as was the case during the financial crisis of 2007–08, the central bank will step in and create reserves, for example by buying assets such as bonds and shares from commercial banks. It is hence not reserves which determine how much banks can lend to their customers, but rather it is loans by banks and their financing needs which create central bank reserves.<sup>35</sup>

Banks lend to each other when they need to clear their balances from a myriad of payments (i.e. because customers of bank A made more payments to customers of bank B) by the end of a banking day. This will force bank A to take out a short-term loan (or loans) on the interbank market to settle its balance with bank B. Those multiple payments are just offset (netted out) against each other. So suppose if Standard Bank has a lot of outflows because Thando, Mandisa, and Juliet transfer money to Massimo, Neil, and Bongani at Absa Bank, but other Absa customers make payments to Standard Bank customers of an equal amount, nothing will change between those banks. If however Standard Bank had outflows of ZAR 100,000 to customers at Absa Bank and inflows of ZAR 90,000 from customers at Absa Bank, only ZAR 10,000 will be moved from Standard Bank to Absa:

Often there is such a mismatch between inflows and outflows on a particular banking day, and banks then need to borrow on the interbank market. However, no bank will accept a loan from another bank that is more expensive than a loan facility from the central bank (at least in normal times). Hence, central banks can create a ceiling on short-term interest rates. They can further affect long-term interest rates on capital markets by purchasing assets from banks and affecting yields of government bonds.<sup>36</sup>

Those government bonds at the federal level are usually risk-free (if the government borrows in its own currency and the currency is not pegged, let's say, to a foreign currency such as the US dollar). Because a central bank can never run out of its own money (which it creates via the stroke of a pen or by pressing a button on a computer keyboard) and it can never let its own government run out of money,<sup>37</sup> those bonds are the asset class carrying the lowest risk. Hence, a central bank can also set a lower ceiling for the interest rate as nobody will accept less interest than on such a basically risk-free government bond.

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<sup>34</sup> Absa stands for Amalgamated Banks of South Africa Limited, which was created via a 1991 merger. <sup>35</sup> Ryan-Collins et al., *Where Does Money Come From?* P. 65. <sup>36</sup> Ryan-Collins et al., *Where Does Money Come From?* Pp. 77–83. <sup>37</sup> S. Kelton, *The Deficit Myth: Modern Monetary Theory and How to Build a Better Economy*, London: John Murray, 2020, pp. 35–37.

However, while lower interest rates are supposed to induce more credit demand or investment, this is not guaranteed as it depends on economic expectations. Inflation is not the result of “too much money chasing too few goods” but rather of distributional conflicts and cost factors. If workers demand wage increases well above productivity increases, business will increase prices to defend its profit share (unless price competition is very high). If for instance oil imports or other important input factors of production become more expensive, prices might rise as well.<sup>38</sup>

However, sometimes too much credit may exist in certain markets and accordingly asset price inflation may be driven by cheap money. For example, banks might be issuing loans into the real estate markets. Houses cannot be produced the same way that industrial goods can. Hence, house prices will start to rise with a lot of investors buying real estate and thus bid up the value of collateral, enabling more credit until the bubble bursts. However, even here the central bank cannot directly affect the loan demand for houses unless it hikes up the general interest rate and cools down the whole economy by means of a recession. However, there are other regulatory tools central banks could use to make it less attractive to banks to issue loans in a specific market.<sup>39</sup>

In sum, it is not savings which finance investment, but rather investment which creates savings. Imagine a simple barter economy as in chapter 2 where all agricultural output is consumed and there hence exist no savings. If we now add credit into the picture the farmers take on loans. They can devote time to invent better tools without going hungry as they can buy food from others. Hence, credit may kick-start production leading to more food production in the next period which would then allow for higher income and hence savings.

Thus, credit money is central to capital accumulation, technological progress, and high growth rates witnessed during the expansion of modern capitalism. However, it can equally be a destructive force. It may feed bubbles and financial crises, trigger debt crises, or fund environmentally-harmful economic activities. Hence, the crucial question for shifting economic policy is how to better target credit towards socially-desired activities.

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<sup>38</sup> B. Snowdon, H. Vane, and P. Wynarczyk, *A Modern Guide To Macroeconomics: An Introduction to Competing Schools of Thought*, Aldershot: Edward Elgar, 1994, pp. 372–74. <sup>39</sup> T. I. Palley, “Asset-based Reserve Requirements: Reasserting Domestic Monetary Control in an Era of Financial Innovation and Instability”, *Review of Political Economy*, vol. 16, no. 1, pp. 43–58.

According to the credit theories of money, the monetarist quantity theory of money (Chapter 4) is basically a tautology. The equation  $M \times V = P \times Y$  may even be read from right to left meaning that instead of more money leading to higher prices, higher prices or higher economic output creates more money demand. A negative change in economic expectations may also lead to a lower velocity of money as people are hoarding money. Hence, in an economy operating below full capacity it is usually not more money that causes inflation, but inflation is a result of social conflict and other factors (for example higher energy prices, supply bottlenecks etc.) creating greater money demand.

## Imprint

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