Professional Practice in Governance and Public Organizations

Max Rangeley *Editor*

The Age of Debt Bubbles

An Analysis of Debt Crises, Asset Bubbles and Monetary Policy

Springer

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Preface

The Structure and Intention of the Book

When I first spoke with Springer about the idea for a book on debt bubbles and central banking, there were a number of avenues down which we could have gone. The quantity of publications from within academia commenting on monetary policy is voluminous to say the least. When talking through possible structures for the book, we decided to go with something different to most academic volumes. The first part of this book goes through an outline of the situation in which we find ourselves; first, we examine the nature of how money is created in a modern economy, then we go on to examine how debt bubbles form and their consequences for the economy. The second part of this book then has chapters from senior policy-makers from the world of politics and central banking. This combination of an academic analytical framework in the first half of the book with the experiences and thoughts of those who have worked "at the coalface" means we can develop a fuller understanding of how debt bubbles form, why they are often missed by the economics establishment and the mechanisms through which they are so damaging. This combination of theory, economic analysis, and senior policy-makers discussing their experiences separates this book from others in this domain.

Why do we start the book with a lengthy discourse on the nature of money itself—what it is and where it comes from? Money creation is so misunderstood by the academic establishment that we had to search hard for any institutions which had a correct framework for understanding the monetary system. The vast majority of textbooks teach a completely wrong, and in many ways a back-to-front, model of how money is created. The errors presented in academic textbooks, ranging from undergraduate right up to Ph.D. level, have cascaded through the intellectual ecosystem of economics to the point where hardly any economics professors can lay a claim to understanding how money is created. We cannot expect policy-makers to understand our monetary system if most economics professors do not seem to truly understand it. Hopefully, our chapter in this book on the topic, *How Money is Created in a Modern Economy*, will clear up many of the misunderstandings.

Following the outline of the money creation process, we then go through many of the data relating to the debt bubble phenomena. We do not cover just the last 5 or 10 years, but the last 40 years. For much of the last generation, from the early 1980s onwards, each recession has been responded to by central banks creating a series of larger and larger debt bubbles by setting interest rates lower and lower. In America, for example, when the bubbles of the 1980s burst, leading to the recession of the early 90s, the response from Alan Greenspan was to set interest rates at 3%, the lowest for generations, and then follow this with several years of the so-called "Greenspan Put" whereby expansionary monetary policy would be used to inflate the stock market, and other asset classes, whenever they began to correct back to historically normal prices. This of course generated what became known as the Dot Com Bubble, the peak of which saw a PE Ratio higher than even 1929.

When this bubble burst in 2000, the response from Alan Greenspan was even lower interest rates, of 1% between 2003 and 2004, which then created an even larger bubble—the housing bubble. Then when this burst in 2008, nearly taking down the global financial system with it, the response was, of course, even lower interest rates, in fact the lowest interest rates in history—more than a decade of zero percent interest rates. This policy was followed in much of the rest of the world, and even countries that had hitherto had reasonable debt levels, such as China, suddenly experienced an explosion in corporate and household debt. In fact, in 2008, total global aggregate debt was around $150 trillion; this was, by some margin, already the largest debt bubble in history, both in absolute terms and relative to GDP, but by the time we started writing this book, global aggregate debt had reached around $300 trillion. In other words, far from bringing about a return to prosperity, zero percent interest rates and other "stimulative" monetary policies have served to essentially double the size of the global debt bubble since the 2008 crisis.

The question therefore presents itself, how is it possible that many economists are still blissfully unaware of the dire situation in which we find ourselves? Of course, as has already been touched on, some of this stems from the fact that most economists do not understand the nature of our monetary system, and, in particular, how money is created—in our current system, when banks make loans, they do not take money from depositors and lend out this money to borrowers, they actually create new money ex nihilo. Yet it is this capacity of banks to create money out of nothing combined with central banks setting lower and lower interest rates for a generation has been the engine and fuel for the creation of the series of ever-larger debt bubbles we have seen during this period, culminating in the current $300 trillion debt extravaganza. Economic historians sometimes write with incredulity about historical bubbles such as the South Sea Bubble, Tulip Mania and the Mississippi Bubble. Yet those we have seen over the last 40 years not only match these in volume but are also the consequence of far more predictable policy errors. Interest rates are a pricing mechanism. When the price of butter or fuel or consumer goods is set artificially low, the consequences are obvious and can be predicted by any economics undergraduate; when the government of Venezuela sets the price of food artificially low, we are not surprised when they have food shortages, conversely, when central banks set interest rates artificially low for years on end we should not be surprised that we have a $300 trillion global debt bubble.

In 2018, at the Economic Freedom Summit in the European Parliament, I had a debate with the head of IMF Europe, Jeff Franks, billed as "Central Banks—The Solution or the Problem?" In Jeff's speech, he discussed how central banks had made recessions shorter and easier to bear by setting interest rates low; I talked through how interest rates set artificially low will of course boost GDP, but GDP is merely a measure of economic activity—the real question is what kind of economic activity is stimulated by artificially low interest rates? By understanding the intricacies of the consequences of interest rate manipulation by central banks, economists can make better macroeconomic predictions, much as they can make effective predictions about the consequences of governments setting prices in other areas of the economy such as food or fuel. I hope that this book will go some way to explaining how debt bubbles form and why they are so destructive to the economy, and in so doing allow us to think more deeply about how we might move towards a more rational and prosperous financial and monetary system.

The Authors

In putting together the plan for this book, I wanted to ensure that we have the best writers available—both the economists for first part and policy-makers for the second part. I've known all of the authors for some time prior to writing this book, and have had many interesting conversations on the problems with the current monetary system and its consequences. In the first part of this book, my co-authors are Roger Koppl, Professor of Economics at Syracuse University in the United States, and Harry Richer, a policy researcher and political advisor in the UK. Roger has written a number of important publications on the failure of technocracy to formulate sound policy, and nowhere has this expert failure been more apparent than within the world of central banking. In 2022, I wrote a book with British member of Parliament Steve Baker on the global debt bubble, for which Harry did excellent work—many of the data from that book have been used for the debt bubbles part of the first part in this work, looking at data from dozens of countries around the world to build a picture of the magnitude of the problem. I co-authored the chapter on money creation in the first part with William White, who also wrote a chapter for second part (see below).

In the second part of this book, we have four authors writing from the policy-makers' perspective on the nature of debt bubbles and modern central banking. William White is the former head of the Economic and Monetary Department at the Bank for International Settlements, the central bank of central banks. Bill has decades of experience of central banking, having worked at the Bank of England and Bank of Canada before going to the BIS, and following the BIS becoming Chairman of the Economic and Development Review Committee at the OECD. Barbara Kolm is the Vice President of the Austrian central bank and is the most prominent Austrian School central banker in the world today; Barbara has also run think tanks focussing on broad areas of economic policy and understands how monetary policy plays into many aspects of a modern economy. Lord Syed Kamall was a member of the European

Parliament for many years, heading the ECR group, at the time the third largest group in the European Parliament; I worked with Syed on the 2016 Blockchain Summit in the European Parliament, where we had the IMF, World Bank, UN and BIS among others discussing the future of money. Having also been a professor of economics, Syed has an excellent knowledge of both the theoretical and practical aspects of how an economy works. Miguel Fernandez Ordoñez is the former Governor of the Bank of Spain and was at the helm when the 2008 crisis hit; Miguel has since become one of the most interesting thinkers in the world when it comes to how we might reform our monetary system. These esteemed authors, all of whom have different perspectives and thoughts on the current monetary system, ensure that this book is a unique contribution in the field of monetary economics.

Finally, I would like to express my gratitude to Johannes Glaeser at Springer—producing novel works in the field of academic literature is far more enjoyable when working with a knowledgeable and enterprising publisher. With Johannes at Springer, we have now produced some of the most innovative books in recent academic history, featuring authors ranging from the prime ministers of major countries to senior central bankers and, for our artificial intelligence book, some of the most interesting AI thinkers in the world.

Plymouth, UK Max Rangeley

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Understanding the Monetary System and Debt Bubbles in Modern Economies

How Money Is Created in a Modern Economy

Max Rangeley and William White

The way in which money is created in a modern economy is misunderstood by many academics and practitioners of finance, including in some cases even central bankers. Broadly speaking, the confusion arises from the view that banks lend out depositors' money when they make loans—this is what is taught in the vast majority of economics textbooks. In reality, when a bank makes a loan, it creates that new money ex nihilo—out of nothing. Rather than taking money that it has in the form of deposits from Bob and lending this out to Alice, the bank expands both sides of its balance sheet when it makes a loan to Alice, thereby creating new money. This idea that banks create new money is often called endogenous monetary theory.

While almost all university economics textbooks teach that banks receive money from depositors and then lend it out to customers, a small number of central banks—most notably those in Germany, the UK, Switzerland and Spain—have written the truth about how money is created. Most of these are short papers or speeches; we shall see some of the key points from these central banks, but this chapter will also present a more general outline of how money creation occurs in a modern economy and some of the consequences, as well as pointing out some of the errors in how economics is generally taught.

The Deutsche Bundesbank, in a paper in 2017 (2017b), outlined the money creation process, and how it occurs without the need for lending out deposits, as follows:

> What the stylised example of the creation of money shows particularly clearly is that a bank can grant loans without any prior inflows of customer deposits. In fact, book money is created as a result of an accounting entry: when a bank grants a loan, it posts the associated credit entry for the customer as a sight deposit by the latter and therefore as a liability on the

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> liability side of its own balance sheet. This refutes a popular misconception that banks act simply as intermediaries at the time of lending – i.e. that banks can only grant loans using funds placed with them previously as deposits by other customers. (2017, p. 17)[1]

The Banco de España similarly described this simple process through which money is conjured into existence by banks:

> Most of the money we use is created by commercial banks when they lend money. When a commercial bank issues a new loan to its customers and credits their current accounts with the corresponding amount, it is creating "inside money." This money will be used to buy goods or make investments and will eventually end up being deposited in other bank accounts. Conversely, when customers pay off their debts, that inside money is destroyed.[2]

Even within the relatively small community of economists who do understand that new money is created when banks make loans, there is still confusion. Many believe that banks are "reserve constrained"—that the reserves held by banks with the central bank constrain how much money they can create. In reality, most central banks are accommodative, they generate whatever reserves are necessary when banks create new money by making loans. The Bank of England (McLeay et al. 2014) explained this concisely and effectively in one of their papers on the money creation process:

> Commercial banks create money, in the form of bank deposits, by making new loans. When a bank makes a loan, for example to someone taking out a mortgage to buy a house, it does not typically do so by giving them thousands of pounds worth of banknotes. Instead, it credits their bank account with a bank deposit of the size of the mortgage. At that moment, new money is created. For this reason, some economists have referred to bank deposits as 'fountain pen money', created at the stroke of bankers' pens when they approve loans.
>
> While new broad money has been created on the consumer's balance sheet, […] this is without — in the first instance, at least — any change in the amount of central bank money or 'base money'. As discussed earlier, the higher stock of deposits may mean that banks want, or are required, to hold more central bank money in order to meet withdrawals by the public or make payments to other banks. And reserves are, in normal times, supplied 'on demand' by the Bank of England to commercial banks in exchange for other assets on their balance sheets. In no way does the aggregate quantity of reserves directly constrain the amount of bank lending or deposit creation. (p. 16)

This misunderstanding among economists with respect to how money is created leads, by extension, to misunderstandings about the effects of the money creation system on the rest of the economy, in particular how bubbles are inflated and how an inefficient use of resources in the economy propagates.

It is worth looking a little more closely at the erroneous model found in most economics textbooks. It goes something along the lines of the following:

> Someone deposits £10,000 in Alpha Bank. Alpha Bank then keeps 10% of this, or £1,000, in reserve, and lends out £9,000—so-called "fractional reserve banking." That £9,000 is then deposited in Beta Bank, which is similarly lent out with 10% (£900) being kept in reserves.

[1] The role of banks, non-banks and the central bank in the money creation process, Deutsche Bundesbank, Monthly Report, April 2017.

[2] This can be found here: https://www.bde.es/wbe/en/areas-actuacion/politica-monetaria/preguntas-frecuentes/definicion-funciones-del-dinero/como-se-crea-el-dinero.html.

> The amount of money in the economy, it is posited by the textbooks, is thereby "multiplied out" over time, leading to the oft-used term "multiplier model" to describe this mechanism. Furthermore, when a central bank wants to "stimulate" the economy through credit creation, it engages in open market operations—it buys bonds from banks, which puts cash onto the balance sheets of the banks. The economics textbooks then outline how this cash is then lent out to customers, increasing the amount of credit available in the economy. Once this is lent out, the borrowers will also of course deposit the cash at a bank, thereby continuing the "multiplier effect" once again. The extent to which base money is multiplied up in the economy is a function of the reserve ratio and the demand for credit, for instance if the reserve ratio is 0.10 (10%), then the multiplier effect will be the inverse of this, 10. In other words, for every £10,000 injected into the economy by the central bank through open market operations, this will, over time, be multiplied up into £100,000 over time as, through each iteration, 10% of deposits are kept in reserve and 90% are "lent out."

This is in fact how most textbooks erroneously describe the process of money creation. For example, in *Modern Money and Banking*, a popular textbook by Miller and VanHoose (1993), they write the following[3]:

> In this example, a person went into bank 1 and deposited a $100,000 check drawn on another bank. That $100,000 became part of the reserves of bank 1. Because that deposit immediately created excess reserves, further loans were possible for bank 1. Bank 1 lent the excess reserves to earn interest. A bank will not lend more than its excess reserves because, by law, it must hold a certain amount of required reserves. (p. 331)

In Mankiw and Taylor's (2014) introductory text, *Economics*, they describe how reserve ratios determine how much of customers' deposits are "lent out," which are then "multiplied up":

> Let's suppose that First European has a reserve ratio of 10 per cent. This means that it keeps 10 per cent of its deposits in reserve and lends out the rest. (p. 569)

In Harvey and Jowsey's (2007) *Modern Economics*, they write of how:

> Banks are companies which exist to make money for their shareholders. They do this by borrowing money from their 'depositors' and relending it at a higher rate of interest to other people. (p. 324)

In Hardwick et al.'s (1999) text *An Introduction to Modern Economics*, they describe how central banks push cash onto banks' balance sheets so that it can be "lent out" to the public (note, we shall examine how central bank operations actually work in more detail later in this chapter):

> Conversely, if the central bank wishes to expand the money supply, it will buy securities on the open market and will pay for them with cheques drawn on itself. The sellers of the securities will deposit these cheques with the commercial banks, which will present them for payment to the central bank. The central bank will credit the commercial banks' accounts and this represents an increase in their cash reserves. The commercial banks will now be in a position to undertake a multiple expansion of bank deposits. (p. 441)

Heffernan's (1996) *Modern Banking in Theory and Practice*, popular with MBA and economics Master's courses, describes how:

[3] Several of the quotations shown here are taken from Werner (2014). Specifically, Miller and VanHoose (1993), Heffernan (1996), Samuelson and Nordhaus (1995) and Stiglitz (1997).

> To summarise, all modern banks act as intermediaries between borrowers and lenders, but they may do so in a variety of different ways, from the traditional function of taking deposits and lending a percentage of these deposits, to fee-based financial services (p. 18).

Even within institutions there have been differences in the understanding of how money is created. On the one hand, Benes and Kumhof (2012) of the IMF wrote a paper in 2012 correctly describing how banks create money, and how the Chicago Plan provided a possible alternative. On the other hand, the IMF's own videos used for teaching finance on the educational platform EdX taught that banks take money from depositors and lend it out to other customers. Similarly, the IMF, in their series explaining banking and finance to a wider audience, in *Banking: At the Heart of the Matter*, describe banking as follows:

> You've got $1,000 you don't need for, say, a year and want to earn income from the money until then. Or you want to buy a house and need to borrow $100,000 and pay it back over 30 years.
>
> It would be difficult, if not impossible, for someone acting alone to find either a potential borrower who needs exactly $1,000 for a year or a lender who can spare $100,000 for 30.
>
> That's where banks come in.
>
> Although banks do many things, their primary role is to take in funds—called deposits—from those with money, pool them, and lend them to those who need funds. Banks are intermediaries between depositors (who lend money to the bank) and borrowers (to whom the bank lends money). The amount banks pay for deposits and the income they receive on their loans are both called interest.[4]

In Samuelson and Nordhaus's famous work, *Economics* (1995), one of the most used textbooks in the world (both Samuelson and Nordhaus won the Nobel Prize in Economics), they note that:

> Each small bank is limited in its ability to expand its loans and investments. It cannot lend or invest more than it has received from depositors (p. 496)

In Stiglitz's (also a Nobel Prize winner) book, similarly titled *Economics* (1997), he writes that:

> It should be clear that when there are many banks, no individual bank can create multiple deposits. Individual banks may not even be aware of the role they play in the process of multiple-deposit creation. All they see is that their deposits have increased and therefore they are able to make more loans (p. 737)

More recently, Nobel Prize winner Paul Krugman, who wrote another economics textbook that is widely used, has used his position as a journalist at the New York Times to ridicule the idea that banks "just issue checks out of thin air," calling it "banking mysticism" and asserting that "any individual bank does, in fact, have to lend out the money it receives in deposits." We have shown a longer quote below to obviate any risk of accusation that we are using cherry-picked quotes:

[4] This outline can be found here: https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Banks.