

# RETHINKING CAPITALISM

Economics and Policy for Sustainable and  
Inclusive Growth

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# RETHINKING CAPITALISM

## Economics and Policy for Sustainable and Inclusive Growth

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*Edited by*

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# 3.

## Understanding Money and Macroeconomic Policy

L. RANDALL WRAY AND YEVA NERSISYAN

### Introduction

MACROECONOMIC POLICY is not working. The best part of a decade after the financial crisis, developed economies have still not returned to anything like normal conditions. Unprecedentedly low interest rates, continuing high deficits, weak growth in most countries and anxieties over the risks of deflation indicate painfully that policy-makers have not been successful in restoring their economies to health.

Yet it is not for want of trying. Though initially governments reacted to the crisis by introducing fiscal stimulus packages, these were short-lived. As growth rates plunged, initial fiscal stimulus measures, combined with falling tax revenues and other automatic stabilisers, served to raise government deficits and debt. These in turn fuelled calls for fiscal austerity. As sovereign debt in the euro zone rose, further support was lent to the claim that governments had to balance their budget or else face the catastrophic consequences of higher borrowing costs and unsustainable debt repayments. The successive crises in which Greece found itself were said to be a warning to all.<sup>1</sup>

With the emphasis turning toward fiscal austerity, governments looked toward respective monetary authorities and monetary policy to help lift their economies out of a slump. The US Federal Reserve and the Bank of England started by using conventional policy tools, lowering interest rates. But in the face of continuing recession they then found themselves compelled to try more unconventional approaches, first providing liquidity facilities to financial institutions and then engaging in large-scale asset purchase programmes, known as quantitative easing (QE). The European Central Bank (ECB) gradually followed suit, despite anxieties that this would violate its constitutional powers. The scale of these operations was staggering: between 2008 and 2014 the cumulative total of the bail-out, liquidity support and credit guarantees the Federal Reserve provided to the financial sector amounted to \$27.8 trillion.<sup>2</sup> The Fed also purchased over around \$4.5 trillion of assets under QE mechanisms. The Bank of England started its asset purchase programme in 2009, buying £375 billion worth of assets, largely gilts, by autumn 2012.<sup>3</sup> Yet both banking systems and economies as a whole remain worryingly fragile.

The justifications for austerity policies are rooted in orthodox monetary theory. In this view, government spending should be constrained by the amount of revenue it raises through taxation and borrowing. The government should try to balance its budget, if not every year, then at least over the medium term, so as to avoid an unsustainable increase in its debt. Government finances should be subjected to close market scrutiny and discipline. To reduce market uncertainty and allay lenders' concerns about any potential risk of government insolvency and

default, sovereign debt levels should be limited to what governments can readily service out of tax revenues. More importantly, governments should not be allowed to ‘print money’ to finance their spending. To do so would be inflationary.

While in most countries these principles are a matter of policy, in the euro zone they are built in to the design. Individual governments effectively gave up their power to ‘print money’ when they adopted the euro issued by the supranational ECB; any flexibility they might have is only with the acquiescence of the ECB. They also agreed to fiscal rules that set ceilings on government deficits and debt as a proportion of gross domestic product (GDP). As these limits risked being exceeded during any downturn as a result of the operation of automatic stabilisers, the aim was for governments to balance budgets over the course of the business cycle—surpluses in good times would provide the policy space to run small deficits in recessions. In sum, orthodox theory places the government on the same footing as private firms and households, whose ability to spend is constrained by their income and borrowing and by financial markets’ view of their creditworthiness.

While the orthodox view underpinning current macroeconomic policy is widely acknowledged, it is less often observed that this in turn rests on a very particular theory of money. Rarely questioned in ordinary life, the creation and regulation of money in modern economies is in fact a highly complex—and contested—subject. In this chapter we shall show how different theories of money give rise to very different views on macroeconomic policy.

In particular we explore how the approach known as ‘modern money theory’ offers a much richer understanding of how money works than the orthodox view; and in turn how this casts new light on why current macroeconomic policy has not succeeded—and what would do better.<sup>4</sup> We will seek to show how this understanding of contemporary financial systems can demonstrate why fiscal policy is a much more powerful and effective tool than monetary policy for combating recessionary forces and stimulating growth. For a nation with its own currency, government spending is not constrained by available funding from taxation or borrowing. Government budgets are not like household budgets and thus the current emphasis on fiscal austerity is misplaced. We shall argue that low interest rates and unconventional monetary policy measures, such as QE, are at best weak in stimulating aggregate spending in the economy and do little to address concerns about the indebtedness of households and companies.

The deeper problems today’s economies face are complex, related to the longer-term processes of increased financialisation. This is discussed by William Lazonick, Andrew Haldane and Mariana Mazzucato in their chapters in this volume.<sup>5</sup> In this chapter we confine the analysis to arguing that only with a proper understanding of the nature of money can the role of national fiscal policy be properly understood.

## The orthodox view: exogenous money

Many economics textbooks offer brief accounts of the origins and evolution of money.<sup>6</sup> Some typically note how money reduced the inefficiencies of barter, thereby facilitating the exchange

of goods and services, and then go on to describe the evolution of paper money as a promise ‘to pay the bearer’ a specified amount of a valuable commodity such as gold or silver in exchange. The available supply of the precious metal set limits on the amount of paper IOUs (‘I-owe-yous’) that could be issued. In turn, there was always a risk of default—failure to pay the valuable commodity if there was a sudden rush to redeem paper for gold. Eventually, according to this basic account, governments issued ‘fiat money’, that is, national currencies no longer backed by any commodity.

But from an orthodox perspective, the problem with fiat money is that there are no natural limits to its supply once it is freed from a commodity backing such as gold. The growth of fiat money can outstrip the growth in the volume of output produced each year in the economy. This creates the danger that excess growth in the supply of fiat money would lead to inflation, with ‘too much money chasing too few goods’. This ‘quantity theory of money’, subsequently developed by Milton Friedman, argued that if governments were allowed simply to ‘print money’ to finance spending, this would inevitably lead to higher inflation.<sup>7</sup>

Consequently, orthodox economists believe that government spending should largely be constrained by tax revenue. Governments can also borrow, but this must necessarily be limited. First, if governments borrow to finance spending they will compete with the private sector for loanable funds and will thus push up interest rates, which in turn will ‘crowd out’ private borrowing and spending. Second, forward-looking households will take the view that deficit spending today will have to be paid for by taxes in the future; accordingly, they will curb spending today and save more. In the extreme case, proponents of the orthodox view believe that government spending has no positive impact on the economy, since private spending decreases sufficiently to offset the increase in government spending, effectively making for a zero multiplier effect. Lastly, if government debt as a proportion of GDP gets too high, and financial markets believe there is a high risk of default, governments may be charged such high interest rates that they are effectively shut out from financial markets and left unable to borrow at all.

From an orthodox perspective, the quantity of fiat money in existence appears to be ‘exogenous’ to the real economy. That is, the supply of money is determined by the central authorities independently and separately from the production of goods and services. This idea lies at the heart of the ‘classical dichotomy’ in macroeconomics, where monetary variables are seen as independent of real variables. In the orthodox view an excess growth of this exogenously determined money supply relative to the growth in real output causes a rise in the general price level; for this reason, controlling the money supply is central to the control of inflation.

## Endogenous money and modern money theory

But this view of money does not actually accord with the facts. As Hyman Minsky pointed out, money is not created simply by the central authorities.<sup>8</sup> It is effectively created whenever commercial banks lend money, since such lending increases the purchasing power of those who

borrow. It is therefore the demand for loans by businesses and households in the economy which determines the money supply. Money, in other words, is *endogenous* to the real economy, and is not independent of the production of goods and services at all. It is this insight which lies at the heart of ‘modern money theory’.<sup>9</sup>

But though most money is not created by government, the state nevertheless has a crucial role in its supply of the currency, which in modern economies is a ‘fiat’ IOU issued by the treasury or central bank. The question arises as to why anyone would accept fiat money at all. On a British £5 note is written ‘I promise to pay the bearer on demand the sum of five pounds’. But the Bank of England would not give the holder of this note anything other than another government IOU—that is, another £5 note (or the equivalent sum in coins). It is frequently assumed that the acceptance of government IOUs is due to the simple fact that they are ‘legal tender’ within a particular national jurisdiction. But in fact this is neither a sufficient nor a necessary condition; after all, in several countries the US dollar is used interchangeably with the local currency despite it having no official legal tender in these jurisdictions. In reality, the reason why, for example, British households and business accept pounds, and US ones dollars, is because they have to make payments—including, importantly, taxes—to their respective governments. It is the tax obligations that are required and enforced by the sovereign state that ensure wider use of their currency. While the government cannot readily force others to use its currency in private payments, it can force use of its own currency to meet the tax obligations it imposes.

The ability of the state to impose and enforce taxes creates an important advantage for a sovereign government. If the state’s currency is not pegged to another currency or metal, then it is *the* means of final settlement in an economy. This allows the government to spend by issuing its own IOUs.<sup>10</sup> The imposition of taxes grants the government credit against the entities who owe taxes. The ability to spend by issuing tokens of indebtedness therefore allows the government to move resources from the private to the public sector—the basis of its capacity to achieve public purposes.

In the past, states directly spent their metallic coins and paper notes into existence and then collected them as payment. In contemporary English the word revenue can be traced from the Latin *revenire*, meaning return, through the old French *revenue*, meaning returned. What was returned? The state’s own debts. We still use the term ‘tax return’ from which most of the state’s revenue derives. But today, states no longer spend coins and notes into existence, nor accept tax payments in those forms. Rather, state spending and taxing is handled through electronic book-keeping, a computerised system of debits and credits on the balance sheets of the central bank and private banks. This adds a layer of operations that obscures, but does not fundamentally change, the nature of sovereign spending.

The modern financial system is an elaborate system of electronic recordkeeping. Instead of money being created ‘at the stroke of a pen’ it is now created through a series of keystrokes on the computer. Credits and debits are entered electronically. Understanding the central bank’s balance sheet provides a critical insight into the nature of government spending and finances.<sup>11</sup> Commercial banks hold their own accounts at the central bank and the latter also acts as banker

to the government (e.g. the Federal Reserve acts as banker to the US Treasury). Government spending and taxation occur through electronic entries. When the US government spends, the Fed credits the reserves of private banks who have accounts with the central bank. When taxes are paid, the central bank debits the private bank's reserves.

Some may find that somewhat bewildering. Yet the relationship between the treasury and the central bank and that between the central bank and commercial banks is not as complex as it first appears.<sup>12</sup> When governments pay civil servants this occurs via electronic transmission to the commercial bank accounts of the employees. The central bank credits the receiving bank's reserves, while the commercial bank credits the employee's deposit account. For this reason, any spending by the national government results in a rise in bank reserves held at the central bank. The key point is that the government did not have to wait for any tax revenue to be made available in order to pay the civil servants in the first place. It happened at a keystroke.

It follows from this that the claim that a sovereign government is financially constrained is simply wrong. A sovereign government cannot become insolvent in its own currency and it clearly does not need tax revenue before it can spend. On the contrary: if taxpayers need to use the national currency (i.e. government fiat money IOUs) to pay taxes, then the government must spend before taxes can be paid. In practice, tax payments reverse the procedures outlined above: the deposit account of the taxpayer is debited by the commercial bank, and the central bank debits the reserves of the commercial bank. If the state is the only source of government IOUs, then, as a matter of logic, it must issue them first and receive them later. Once government IOUs are 'returned' in the form of tax or other payments to the state, they simply cancel the government's 'debt' as the outstanding stock of IOUs is reduced. It is this 'cancelling out' that occurs electronically on central bank balance sheets.

This process is perhaps easier to see in relation to government bonds (such as US Treasury bonds), since bonds are normally what make up most of 'government debt' (the rest takes the form of cash plus bank reserves). When a bond matures, the government pays the bondholder by crediting the bondholder bank's reserve account at the central bank; the commercial bank then credits the bondholder's account at their private bank. While it may seem that this operation reduces government debt, in reality it simply substitutes one type of debt for another, as the outstanding stock of bonds (government liabilities or IOUs) goes down, but the level of reserves (also government liabilities or IOUs) goes up. By contrast, when tax payments are made to the government, the level of reserves goes down without an offsetting increase in any other government liability, thus lowering the outstanding level of government IOUs and debt.

This may seem as if we are suggesting that governments *sometimes* 'print money' to finance their spending. It is often thought that governments have a choice on how to finance their spending, through taxation, borrowing or printing money. But 'printing money'—or, more accurately, crediting bank accounts through electronic keystrokes, as it is currently done—is not something government can either choose to do or to avoid. Rather, it is the *only* way that a sovereign government spends. Through the system of electronic credits and debits, government spending *always* leads to an increase in bank reserves. Arguing that governments have a choice between debt financing (which is regarded as unsustainable) and money financing (which is



seen to be inflationary) is based on a misunderstanding of how modern governments spend. In fact, both tax payments and bond sales logically come *after* the government has spent.

One may wonder, then, why sovereign governments sell bonds if they do not need to raise revenue by ‘borrowing’. After all, policy-makers typically think that when governments sell treasury bonds they are engaging in a borrowing operation to finance their spending, whereas when the central bank sells bonds this is regarded simply as an ‘open market operation’ for purposes of monetary policy. From the point of view of the respective sellers this is a valid way of looking at the operations. However, from the point of view of the buyers of bonds, the impact is exactly the same: the private banks will end up holding fewer reserves and more bonds. In either case, reserves must exist before government bonds can be purchased, since the purchase can be completed only by debiting bank reserves.

Another simple example serves to illustrate this point. The only avenue for private entities to purchase government bonds is through their commercial bank account. So when a government sells its bonds, the buyer’s bank facilitates the purchase for them by offering reserves they hold at the central bank. The central bank will then debit that bank’s reserves and credit the balance of the government treasury. The net result is that the central bank has reduced its IOUs to the commercial bank but increased its IOU to the treasury; the treasury’s IOU to the bond purchaser is balanced by its claim on the central bank; the commercial bank’s claim on the central bank as well as its deposit IOU to the bond purchaser are eliminated; and the bond purchaser’s deposit claim on the commercial bank is exchanged for a bond claim on the treasury. The key point here is that banks must already have reserves before they buy treasury bonds. The reserves must have been created by the central bank to allow the purchase of treasury bonds to go forward.

So for the sale of government bonds to proceed, the central bank and private banks will need to have put in place operating procedures to ensure banks can obtain reserves that can be used to purchase the bonds when they are sold. There are a number of ways that reserves to purchase bonds can be provided, either in advance or simultaneously: (a) the central bank can stand ready to lend them; (b) treasury spending will lead to credits to banking system reserves; (c) the central bank can buy bonds (open market purchase) at the same time that the treasury sells bonds; and (d) the central bank could also allow the banks more ‘float’, that is, let them buy bonds while postponing debiting their reserves (which amounts to the same thing as lending reserves).

We do not need to go more deeply into the technical details. All that is important to understand is that banks *must have* reserves (a debt at the central bank branch of government) in order to buy treasury bonds (a debt at the treasury branch of government). These reserves must have been created either through the central bank or by government spending to allow the purchase to go forward. The effect of bond sales is to substitute high-earning bonds for low-earning reserves in the portfolio of the private sector.

So seen from the perspective of modern money theory, sovereign governments do not need to ‘borrow’ their own currency in order to spend. They offer bonds on which banks, households, businesses and foreigners can earn interest. They do this out of choice rather than necessity.

Governments do not need to sell bonds *before* they spend; indeed, they cannot sell them without reserves being in place. Reserves are provided either through government spending (i.e. fiscal policy) or through central bank operations (i.e. lending or open market purchases).

In sum, modern money theory observes, a sovereign government with its own currency (and central bank) is *not* financially constrained. Its spending is not ‘financed’ by tax and bond revenue. As a matter of logic, government spending or central bank lending must precede tax collections and bond sales. Moreover, all government spending is already ‘money financed’ and can remain so simply by leaving the reserves in the system and foregoing bond sales.

We should be clear that this *does not* mean that government should spend without limits. Although modern money theory recognises that a sovereign government with its own currency can always afford to spend (via a few keystrokes on computerised accounting systems), it does not suggest that it should. While governments do not face financial constraints, they do have to deal with real resource constraints. For example, spending in excess of the output gap can lead to inflation. Spending on particular resources that are already being fully utilised in the private sector can lead to higher prices for those resources (though not necessarily a general price increase). Inflation results from too much spending, not too much money per se, although the two are usually conflated. How this spending is ‘financed’ does not determine its inflationary impact.

The recognition that the government is not financially constrained does not necessarily lead to a particular view on how much a government *should* spend. There may be good reasons why the government should spend less, but claims that the government is ‘running out of money’ or ‘is becoming insolvent’ should not be one of them. Austerity efforts in the US and UK are now rarely done in the name of ‘controlling inflation’. Rather, the case for fiscal consolidation is based on claims that these countries are ‘running out of money’ or spending in excess of ‘hard-working taxpayers’ money’ such that governments need to ‘tighten their belts’, as if the government budget were the same as a household budget. By contrast, a fiscal policy based on a correct understanding of the nature of money would only call for austerity measures if the economy were facing inflationary pressures.

## Money and monetary policy

We observed earlier that the orthodox view of money is particularly concerned that an exogenously determined excess amount of money in the economy will lead to inflation. As Marvin Goodfriend has put it in relation to the ending of the gold-dollar standard underpinning international monetary relations in the early 1970s: ‘With the collapse of Bretton Woods, for the first time in modern history, all the world’s currencies were de-linked from gold or any other commodity. The lack of any formal constraint on money creation contributed to nervousness about inflation.’<sup>13</sup> Orthodox economists, informed by the quantity theory of money, felt that monetary policy-makers should ensure that the quantity of money available in the economy did not contribute to inflation.

The push to mandate central banks to target inflation can be understood as a way to establish

some anchor for the value of ‘fiat money’. As Paul Volcker, the former chair of the Federal Reserve Board (1979–87), observed in the midst of the subprime crisis: ‘We all live in a world of fiat money. Nothing lies behind the dollar, the euro, or any national currency other than trust—trust that, at the end of the day, central banks and governments will resist the temptation to inflate. Maintaining that trust is particularly crucial in the case of a nation and a currency that has been, and still is, at the heart of the international financial system.’<sup>14</sup> Since the dollar is not backed by any ‘real’ commodity, the entity that controls its quantity must be committed to price stability to ensure that citizens and businesses continue to accept their paper money. Today, having been given greater independence in the overall conduct of monetary policy, most central banks are explicitly committed to the pursuit of price stability as part of their constitutional mandates.

Despite what many commentators may believe, central banks do not independently and directly inject money into the economy. Almost all of the money we use today has been created by private banks through their lending. Central bank money in the form of reserves is held only by commercial banks and cannot get into the economy; central bank money in the form of paper notes does get into the economy, but only to satisfy the public’s demand for cash (as bank deposits are converted at ATM machines—changing the form of the money but not the quantity in the hands of the public). Nevertheless, orthodox monetary theory has long argued that the central bank can control the amount of money available in the economy.

In the orthodox view, private banks are merely financial intermediaries who receive deposits from customers and then lend these funds to borrowers. They keep a proportion of the deposited funds back in the form of reserves, so as to meet day-to-day withdrawals and clearing. Banks may voluntarily set their own reserve ratio that they deem prudent, or it may be a legal requirement (as in the US). The person who borrowed the money will spend it and the recipient will deposit money received at their own bank, allowing further bank loans to be made. As this process of further bank lending continues, the total amount of deposits (bank money) created is a simple multiple of the initial increase in the first bank’s reserves created by the initial deposit. Alternatively, the central bank can lend reserves to commercial banks, which then allows them to create a multiplied quantity of bank money through loans through a similar process. This is the so-called ‘money or deposit multiplier’ familiar to economic students taught the orthodox view.

Since central banks are the ultimate source of reserves in the economy, this view holds that a central bank can control the amount of bank lending by constraining private banks’ access to reserves. It can do so directly through open market sales—if the central bank sells securities to the private sector, banks will have to pay for these with reserves, thereby reducing them. Alternatively the central bank can use indirect means to curb bank lending. If, for example, it decides to increase the interest rates at which it lends to banks, it makes borrowing more costly for banks and thereby discourages further lending. Finally, the central bank can tighten up on its own lending of reserves.

For proponents of modern money theory, however, this view of the process of bank credit creation, and the accompanying belief that the central bank can control the quantity of money

available in the economy, is a fiction. Banks do not in fact lend from the deposits made by households and businesses. When a household goes to a bank for a loan, the bank does not wait for others to deposit funds of equal value in order to be able to approve the borrowing request and make the loan. Assuming they judge the household to be creditworthy, the bank will simply credit the household's account with the deposit money requested. In other words, new money has been created on demand. Banks do not need to have deposits or reserves before they issue loans—they create the deposits as they make the loans.

In contrast to the orthodox view in which deposits create loans, modern money theory sees bank loans as creating deposits, thus creating the need for reserves either to meet reserve requirements or for clearing purposes. If necessary, banks will turn to the central bank to borrow reserves. In other words, the supply of bank money is not independent of the demand for bank money; it results from it, as banks create deposits when they make loans to creditworthy borrowers who want them. This is what is meant by money being endogenously determined. Bank money is created to meet the demand, regardless of the quantity of reserves in the system. While the orthodox money multiplier view of monetary policy is still taught in most textbooks, it is not how money is created in practice. Today even central bank economists acknowledge that banks do not wait for deposits, that bank money is created on demand and that lending is not reserve-constrained.<sup>15</sup>

One may argue that the central bank can limit banks' access to reserves, thus discouraging them from granting loans. But this would ignore the reality of central bank policy-making today. If a central bank pursues an interest rate target, then it cannot, in practice, refuse to supply reserves. If a commercial bank does not have enough reserves for clearing or to maintain a required amount, then it will try to borrow them from other banks in the money market at the overnight interest rate. If the banking system as a whole is short of reserves, the competition between banks for a limited amount of reserves will bid up the overnight rate—possibly above the central bank's target interest rate. So if the central bank wants to secure its target rate, it will *have to* supply reserves. This is usually done through an open market purchase, where the central bank buys a security, paying for it with reserves. In the opposite situation, when banks have more reserves than they desire, the central bank needs to drain reserves through an open market sale to prevent the interest rate from dropping below its target. In this sense open market operations are defensive operations, where the central bank supplies or drains reserves to private banks to 'defend' its interest rate target from pressures that push the actual overnight interest rate away from its target. But more importantly, the central bank has to provide reserves when banks need them, or else risk jeopardising clearing between banks. This is indeed arguably the most important reason why the central bank cannot choose not to supply the reserves.<sup>16</sup>

In sum, while the orthodox view sees central banks as choosing between controlling reserves and controlling interest rates, endogenous money theory argues that interest rate control is in fact the only tool at the central bank's disposal. The quantity of money in the economy in practice depends on many variables, with interest rates being only one of them. In any case, once one disposes of the quantity theory of money, the stock of money in the economy becomes a relatively unimportant variable. What is important for the economy is the total level of

aggregate demand, and the quantity of money does not determine its level, but rather is mostly a consequence of the decision to lend to finance desired spending.

## Quantitative easing

Since the onset of the financial crisis in the US and Europe, and with inflation below central bank targets, increasing attention has been paid to the risk of economies descending into a deflationary spiral similar to that experienced during the so-called ‘lost decade’ in Japan in the 1990s (now approaching three lost decades).<sup>17</sup> Monetary policy-makers were confronted with the limits of the conventional tools of monetary policy: how could they attempt to stimulate private spending with further cuts to interest rates when their key short-term rates were already near zero? The situation was exacerbated by the fact that private banks were displaying greater caution in lending to households and businesses, as they tightened up assessments of creditworthiness and sought to meet domestic prudential banking reforms and international guidelines in relation to leverage ratios and capital requirements.

The result was the use of unconventional monetary policy tools such as QE designed to increase liquidity in credit markets and to encourage banks to lend to households and businesses. The US Federal Reserve embarked on three QE programmes (2008–2014) amounting to a cumulative total of \$4.2 trillion. The Bank of England undertook £375 billion of asset purchases under QE over the period between March 2009 and July 2012. The European Central Bank was slower to embark on QE. Nevertheless, a minimum of €1 trillion was allocated for QE and the ECB committed €60 billion per month from January 2015 through to March 2017.<sup>18</sup>

These central banks differed slightly in their rationales for QE and their views regarding the precise nature and duration of the ‘transmission mechanism’, that is, the process whereby the provision of extra liquidity would translate into higher spending and output. But in general policy-makers hoped that QE would promote the necessary spending to sustain hesitant economic recoveries. The policy of QE was based on the view that the banking system following the financial crisis was somehow ‘starved of cash’ and that the purchase of bonds and other securities by the central bank would therefore provide the reserves required for recalcitrant banks to lend to credit-constrained private businesses and households. In this way growth in the economy would be rekindled. Some opponents of QE, from a more orthodox perspective of money, warned that this electronic ‘printing of money’ by the central bank to purchase securities held privately would eventually prove to be inflationary. From the perspective of modern money theory, however, both these views are misguided. Both misunderstand how money is created in the modern banking system.

As we saw in the previous section, bank lending is not constrained by reserves. Banks do not need additional reserves to push them to lend, nor can banks lend reserves except to one another (the reserves created through QE remain in the banks and cannot get out into the economy to finance spending). Therefore having more reserves will not induce banks to lend more. What banks need are willing and creditworthy borrowers, and these have been relatively

lacking in recent years as both households and firms have focused on paying down their accumulated debts and governments have reduced public spending. The problem, in other words, lies in the demand for finance, not its supply. If borrowers do emerge, then banks will increase lending, which in turn will boost spending in the economy. And so long as the economy experiences only weak recovery, with continuing spare capacity and high unemployment in the economy, QE is also unlikely to prove inflationary. Banks could have made additional loans even without the additional reserves they acquired through QE. Therefore, QE is no more inflationary than any central bank open market operation designed to increase reserves in the banking system.

When the central bank buys bonds and other securities, at a keystroke it electronically credits the reserves of the banks equivalent to the value of securities it has purchased. So QE is essentially an electronic accounting adjustment reflecting the exchange of securities for reserves. In other words, what QE really does is exchange one type of asset (long-term government securities) for another (bank reserves) held on bank balance sheets. This change in the composition of commercial bank portfolios does not raise the incomes of private businesses and households, and should not therefore be expected to generate more spending.

The manner in which QE ‘works’ is in fact not unlike the way conventional monetary policy uses interest rates to shape business and household borrowing and spending. QE affects longer-term interest rates through the central bank’s purchases of longer-term bonds and securities, raising their price and lowering their return. It may also affect other interest rates in the economy by reducing the ‘term spread’ (the difference between short-term and long-term interest rates) and ‘risk spread’ (the difference on yields between different debt instruments according to market perceptions of credit risk).<sup>19</sup> Lowering long-term rates, in turn, will boost any interest-sensitive spending. The housing sector, for example, is generally considered to be more sensitive to interest rate movements, although this varies across countries.

In sum, the impact of QE on aggregate demand, and thus on the real economy, largely depends on the ability of interest rate reductions to stimulate more spending. In practice, since overnight rates were already near to zero and longer-term rates were very low, QE was not able to lower rates much. However, were QE to work, it would do so almost entirely through private sector leverage, not through additional income or net wealth for the sector.<sup>20</sup> And increasing private sector indebtedness is arguably not a desirable course of action in economies that continue to suffer from debt overhang.

There is a way in which QE can create additional private sector income. If its scale is significant enough to push up the prices of the financial assets being purchased by the central bank, this would represent an increase in the private sector’s equity via a capital gain. When realised, this would generate income. In this sense, QE would effectively be an act of fiscal policy.<sup>21</sup> But this is not the professed goal of quantitative easing, in the United States or elsewhere. As Ben Bernanke—chair of the Federal Reserve Board throughout the financial crisis—argued, asset purchases ‘with a fiscal component, even if legal, would be correctly viewed as an end run around the authority of the legislature, and so are better left in the realm of theoretical curiosities’.<sup>22</sup>

Yet we should also note that, if the goal of QE is to boost aggregate demand, its impact may not be entirely positive. While lower rates *may* boost interest-sensitive spending, they also lower private sector interest income (in particular, interest received from government bonds) and thus consumption.<sup>23</sup> And concerns have been raised about the distributional effects. The Bank of England has concluded that QE in the UK disproportionately benefited higher income groups: by pushing up a range of asset prices, asset purchases have boosted the value of households' financial wealth held outside pension funds. Such holdings are heavily skewed, with the top 5 per cent of households holding 40 per cent of these assets.<sup>24</sup>

Overall, QE suffers from the same problem that plagues conventional monetary policy: it is a blunt tool for stimulating aggregate demand. If policy-makers were finally to recognise that the core problem of the developed economies today is insufficient aggregate demand, then there is a better tool for tackling that, namely fiscal policy. With a proper understanding of the nature of money, we could use this powerful tool to boost income and employment without having to engage in roundabout QE gymnastics.

## Implications for the euro zone: the re-integration of money and fiscal policy

The region of the world which has experienced perhaps the most damaging outcomes from the application of the orthodox theory of money to macroeconomic policy-making is the euro zone. In many ways the design of the European single currency was based on the orthodox theory, and it has severely limited the ability of euro-zone countries to deal with the aftermath of the financial crisis.

It is crucial to recognise here that the emergence of sovereign debt problems within the euro zone after the crisis broke in 2008 cannot be simply put down to 'profligate spending' by irresponsible governments. Notwithstanding legitimate concerns about Greek accounting practices and tax collection, most economies on Europe's periphery (Greece, Italy, Spain, Portugal and Ireland) only experienced debt problems once their economies had entered into recession after the crash. But from that point on, they were severely hampered in their attempts to respond.

As Stephanie Kelton's chapter in this volume explains, the financial positions of the private sector, the public sector and the foreign sector are interlinked. If one sector is in deficit, then it follows that at least one of the other sectors must be in surplus. This is a matter of basic national macroeconomic accounting identities: together, all sectoral balances must add up to zero. This simple insight offers the key to understanding the nature of the economic problems afflicting the euro zone.

From the perspective of sectoral financial balances, what happened in euro-zone economies after the crisis was that the domestic private sector moved toward surplus, as indebted households cut back on spending, businesses shelved their investment plans and fragile financial institutions reduced their lending. At the same time most of these economies were

experiencing persistent deficits on their trade balances, partly a reflection of the strength of Germany's exports with a competitive euro replacing its strong mark, and its resulting current account surplus. So it was simply a matter of macroeconomic accounting that the domestic private sector surplus in most countries (saving in excess of investment) had to be mirrored in national public sector deficits (government spending in excess of revenues).

While each country's circumstances were different (in Ireland and Spain, for example, the bursting of property bubbles had a big impact), the rise in government deficits and debt in the economies of Europe's periphery was mainly due to the operation of the 'automatic stabilisers' in the downturn resulting from lower tax and other revenues and higher social security payments, along with some discretionary spending measures aimed at rescuing ailing banks. Falling incomes, rising unemployment and deleveraging all contributed to falling private sector spending. The crisis triggered increased saving by households and a reduction in investment by businesses, which was then mirrored in rising public sector deficits. The latter were not the result of policy-makers purposefully and irresponsibly spending more than they could 'afford'.

Yet EU institutions responded to the financial crisis not by allowing public sector deficits to rise, but by strengthening their commitment to fiscal consolidation. The so-called 'fiscal compact' (Treaty on Stability, Coordination and Governance) embedded a commitment to balanced budgets while subjecting governments to greater EU-level surveillance. But domestic public sector balances can only move toward surplus if this is offset by rising budget deficits (except in those few countries that could achieve trade surpluses). If all governments are obliged to cut back on spending/or raise taxes simultaneously, irrespective of the state of their economies, then this effectively imparts a deflationary bias to the euro-zone economy. Implementing austerity in weakened economies when the private sector is unwilling or unable to reduce net savings inevitably hit economic growth. As most euro-zone governments found, efforts to reduce government deficits were not only difficult but self-defeating, with deficits rising instead of declining.

Crucially, individual euro-zone governments could not rely on obtaining revenue from other EU countries or from the centre. Unlike the US, for example, where federal government revenues are automatically transferred to states experiencing slower growth and higher unemployment, the EU has no federal-level budget that automatically redistributes income from richer regions to poorer ones. (There is no 'Uncle Fritz' equivalent of 'Uncle Sam'.) The lack of an automatic fiscal transfer mechanism at EU level was reflected in the political tensions surrounding the negotiation of successive Greek rescue packages, where images were conjured up of hard-working German taxpayers having to bail out irresponsible and profligate governments in Athens. Such complaints—that New Yorkers have their hard-earned money transferred to poorer Mississippi—are rarely heard in the US. The EU budget is limited to around 1 per cent of EU GDP—smaller than Belgium's—and always has to be in balance.

Moreover, since euro-zone countries do not issue their own national currencies, the peripheral European governments could not indefinitely issue bonds to finance large and/or continuous budget deficits. At some point market discipline was going to catch up, forcing them into austerity. As countries accumulated debt, financial markets raised the risk premiums attached



to their bonds. These higher interest rates only added to their deficits, risking accumulating sovereign debt turning into a wider solvency crisis and raising market fear of default. As Mathew Forstater noted in 1999, in euro-zone countries ‘market forces can demand pro-cyclical fiscal policy during a recession, compounding recessionary influences’.<sup>25</sup> Most euro nations had no option but to turn to fiscal austerity at a moment when the opposite course was necessary.

The problem here arose directly from the orthodox view of money, which underpinned the euro zone. For any sovereign state that issues its own currency, in the quite unlikely event that financial markets refuse to buy government debt, there is always the option of its central bank acting as ‘buyer of last resort’. That is, the central bank can purchase government bonds through an ‘electronic keystroke.’ But, unique among the major central banks, the ECB was set up without this function: it was explicitly prohibited from buying sovereign bonds in the new issue market. The orthodox view of money holds that if central banks can finance government deficits, this will erode fiscal discipline and lead to inflation. By not allowing the ECB to finance government deficits through electronic keystrokes, the EU therefore ensured that governments would be obliged to seek funding in financial markets at market interest rates. If they borrowed too much, they would face the rising costs of servicing their debt and be forced to cut back on spending and/or to raise taxes. Limiting fiscal policy through market discipline was purposefully built into the design of the euro zone from the outset.

Had the ECB started buying the bonds of the deficit countries in the secondary markets early on, it would have mitigated market fears regarding the risk of sovereign default. It would also have lowered the interest rate these nations paid on their bonds, allowing them to stimulate their economies. While almost all major central banks intervened heavily during the financial crisis, the ECB did relatively little and then only gradually. In 2012, the ECB President, Mario Draghi, announced that it would do ‘whatever it takes’ to save the euro, establishing the Outright Monetary Transactions (OMT) programme through which the ECB would purchase an unlimited amount of sovereign bonds, but only in secondary markets and under certain conditions. This was a landmark decision, a de facto step toward ‘buyer of last resort’; but it was later challenged in the German constitutional court, which declared that the ECB had violated its legal mandate.<sup>26</sup> Furthermore, in contrast to the Fed and the Bank of England, the ECB was also much slower to adopt quantitative easing (indeed, it did so at a time when the Fed had already begun the process of tapering its QE programme). With its own key interest rates at the zero bound, concerned about a prolonged period of inflation below its 2 per cent target, the ECB introduced its ‘expanded asset purchase programme’ in January 2015.<sup>27</sup>

The difficulty euro-zone governments have had in stabilising their economies and promoting growth results directly from the orthodox view of money under which the euro zone was created.<sup>28</sup> The euro zone was designed to prevent governments both from running large deficits and from creating money through central bank lending of last resort. Without the ability to keystroke their own currencies, and without fiscal transfers from richer regions, weaker euro-zone economies have been left largely unable to deal with accumulating sovereign debt and weak growth following the financial crisis and recession. The ECB’s decision to ‘bend the

rules' and purchase unlimited quantities of sovereign bonds if needed—an explicit rejection of the orthodox view—gave the euro zone temporary respite. But if the prospect of long-term growth is to be restored, a much more fundamental recognition of the proper role of fiscal policy in boosting demand will be needed.

## Conclusion

Prior to the financial crisis, policy-makers congratulated themselves for achieving low inflation, improving growth performance and financial stability. In the US, Fed Chairman Ben Bernanke described the apparent decline in macroeconomic volatility as the 'Great Moderation'. In Bernanke's view, it was largely due to the introduction of a successful monetary policy framework focused on ensuring price stability.<sup>29</sup> In Britain, Chancellor of the Exchequer, and later Prime Minister, Gordon Brown declared that the Labour government (1997–2010) had aimed to avoid returning to the 'boom and bust' of previous eras. His confidence stemmed from his early decision to grant operational independence to the Bank of England in the conduct of a monetary policy. In his initial letter to the Bank of England, Brown wrote: 'price stability is a precondition for high and stable levels of growth and employment, which in turn will create the conditions for price stability on a sustainable basis.'<sup>30</sup>

But the Great Moderation thesis was blown away by the global financial crisis. And in the past decade the failure of macroeconomic policy based on the orthodox theory of money has been laid bare.

Resting on the belief that governments, like households, are financially constrained by their income, policy-makers have forced fiscal austerity onto their already weak economies and instead put their faith in the ability of monetary policy—both conventional and unconventional—to secure sustainable economic growth. Central banks in Japan, the US, the UK and the euro zone have all engaged in QE in hopes of boosting borrowing through lower interest rates. In the periphery of Europe, financial markets and the eurozone authorities have pressurised countries to reduce their debt burdens even at the expense of mass unemployment and rising economic hardship. Even countries that did not face similar market pressures, such as the UK, have engaged in programmes of fiscal consolidation.

While central bank intervention as a lender of last resort is a critical component in the early stages of a financial crisis, once any run to liquidity is halted, there is not much more monetary policy can do once interest rates have fallen to the zero bound. Yet as we have seen, for countries whose fundamental problem is a lack of total spending in the economy, QE is a very blunt policy tool for increasing aggregate demand, to say the least. If it succeeds in doing so, it will only be by increasing already high levels of indebtedness in the private sector. Fiscal policy, on the other hand, can directly stimulate aggregate demand, with governments having a large degree of control as to where—and for whom—to boost spending. Further, such fiscal expansion can raise demand without worsening private sector balance sheets; indeed, government deficit spending actually improves private sector finances by providing income and safe government liabilities to accumulate in portfolios. As we have argued in this chapter,

governments with monetary sovereignty are not financially constrained: they spend as they issue their own IOUs. They can use this capacity to buy real resources, and in doing so to promote full employment.

The priority of fiscal policy as a tool for economic stabilisation and management of growth is of course not a revelation: it was well understood in the postwar period. But the understanding at that time was incomplete. While it was commonplace to recognise that budget deficits were needed in downturns, the connection between fiscal policy and the *nature* of money was not well understood by most economists. So-called ‘Keynesian’ fiscal activism rested on weak monetary foundations. Similarly, the ‘money’ or ‘deposit multiplier’ view of private money creates a weak foundation for monetary policy. Modern money theory provides an alternative view of the endogenous nature of money in modern financial systems which leads to a much richer understanding of both fiscal and monetary policy. Applied intelligently, it would do much to make modern macroeconomic policy-making effective.

## Notes

- 1 Several insightful publications on the Greek economy can be found at the Levy Economics Institute. See <http://www.levyinstitute.org/topics/greek-economic-crisis> (accessed 19 April 2016).
- 2 J. A. Felkerson, *\$29,000,000,000,000: A Detailed Look at the Fed’s Bailout by Funding Facility and Recipient*, Working Paper No. 698, Levy Economics Institute, December 2011.
- 3 Federal Reserve, [http://www.federalreserve.gov/monetarypolicy/bst\\_crisisresponse.htm](http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm) (accessed 19 April 2016); Bank of England, [http://www.bankofengland.co.uk/monetarypolicy/Pages/qe/qe\\_faqs.aspx](http://www.bankofengland.co.uk/monetarypolicy/Pages/qe/qe_faqs.aspx) (accessed 19 April 2016); and M. Joyce and M. Spaltro, *Quantitative Easing and Bank Lending: A Panel Data Approach*, Bank of England Working Paper No. 504, 2014, <http://www.bankofengland.co.uk/research/Documents/workingpapers/2014/wp504.pdf> (accessed 19 April 2016).
- 4 L. R. Wray, *Modern Money Theory: A Primer on Macroeconomics for Sovereign Monetary Systems*, 2nd ed., Basingstoke, Palgrave Macmillan, 2015.
- 5 Other aspects of financialisation can be found in L. R. Wray, *Financial Markets Meltdown: What Can We Learn from Minsky?* Public Policy Brief Highlights No. 94A, Levy Economics Institute, 2008, <http://www.levyinstitute.org/publications/financial-markets-meltdown-what-can-we-learn-from-minsky> (accessed 19 April 2016). Alternative perspectives can be found in G. Epstein, ed., *Financialization and the World Economy*, Cheltenham, Edward Elgar, 2005.
- 6 See for example N. G. Mankiw, *Macroeconomics*, 9th ed., New York, Worth Publishers, 2016, and A. Abel, B. Bernanke and D. Croushore, *Macroeconomics*, 9th ed., Oxford, OUP, 2016.

- [7](#) M. Friedman, 'The role of monetary policy', *American Economic Review*, vol. LVIII, no. 1, 1968, pp 1–17. See also M. Friedman, 'An interview with Milton Friedman', Library of Economics and Liberty, September 2006, <http://www.econlib.org/library/Columns/y2006/Friedmantranscript.html> (accessed 19 April 2016).
- [8](#) H. P. Minsky, *Stabilizing an Unstable Economy*, New York, McGraw Hill, 2008. See also L. R. Wray, *Why Minsky Matters: An Introduction to the Work of a Maverick Economist*, Princeton, NJ, Princeton University Press, 2015.
- [9](#) Wray, *Modern Money Theory*.
- [10](#) It should be noted that within the European Union the Maastricht Treaty places legal limits on the ability of governments to increase public spending through money creation; but in principle those countries within the EU which have retained their own currencies could do so.
- [11](#) Wray, *Modern Money Theory*. See also L. R. Wray, *Understanding Modern Money: The Key to Full Employment and Price Stability*, Cheltenham, Edward Elgar, 1998; E. Tymoigne and L. R. Wray, *Modern Money Theory 101*, Working Paper No. 778, Levy Economics Institute, November 2013.
- [12](#) G. Rule, *CCBS Handbook No. 32 – Understanding the Central Bank Balance Sheet*, Bank of England, 2012, <http://www.bankofengland.co.uk/education/Pages/ccbs/handbooks/ccbshb32.aspx> (accessed 19 April 2016).
- [13](#) M. Goodfriend, *How the World achieved Consensus on Monetary Policy* (No. w13580), Cambridge, MA, National Bureau of Economic Research, 2007, p. 5.
- [14](#) P. A. Volcker, 'Rethinking a bright new world of global finance', *International Finance*, vol. 11, no. 1, 2008, pp. 101–7.
- [15](#) M. McLeay, A. Radia and R. Thomas, 'Money creation in the modern economy', *Bank of England Quarterly Bulletin*, vol. 54, no. 1, Q1, 2014, pp. 14–27.
- [16](#) S. T. Fullwiler, 'Timeliness and the Fed's daily tactics', *Journal of Economic Issues*, vol. 37, no. 4 (December 2003), 851–80.
- [17](#) 'Europe's deflation risk', *OECD Observer No 300*, Q3 2014, October, [http://www.oecdobserver.org/news/fullstory.php/aid/4485/Europe\\_92s\\_deflation\\_risk.html](http://www.oecdobserver.org/news/fullstory.php/aid/4485/Europe_92s_deflation_risk.html) (accessed 19 April 2016). See also OECD Deflation Watch, [http://www.oecdobserver.org/news/fullstory.php/aid/4807/Deflation\\_watch.html](http://www.oecdobserver.org/news/fullstory.php/aid/4807/Deflation_watch.html) (accessed 19 April 2016).
- [18](#) Federal Reserve, [http://www.federalreserve.gov/monetarypolicy/bst\\_crisisresponse.htm](http://www.federalreserve.gov/monetarypolicy/bst_crisisresponse.htm) (accessed 19 April 2016); Bank of England,

[http://www.bankofengland.co.uk/monetarypolicy/Pages/qe/qe\\_faqs.aspx](http://www.bankofengland.co.uk/monetarypolicy/Pages/qe/qe_faqs.aspx) (accessed 19 April 2016); Joyce and Spaltro, *Quantitative Easing and Bank Lending*; ECB, <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html> (accessed 19 April 2016).

19 A. Blinder, 'Quantitative easing: entrance and exit strategies', *Federal Reserve Bank of St. Louis Review*, vol. 92, no. 6, November/December, 2010, pp. 465–79.

20 S. T. Fullwiler, 'An endogenous money perspective on the post-crisis monetary policy debate', *Review of Keynesian Economics*, vol. 1, no. 2, summer 2013, pp. 171–94.

21 Ibid.

22 B. S. Bernanke, 'Japanese monetary policy: a case of self-induced paralysis?', paper presented at the ASSA meetings, Boston, MA, 9 January 2000, p. 24.

23 W. B. Mosler, 'The Fed is starving economy of interest income', *CNBC*, 24 January 2012, <http://www.cnbc.com/id/46115110> (accessed 19 April 2016).

24 Bank of England, *The Distributional Effects of Asset Purchases*, 2012, <http://www.bankofengland.co.uk/publications/Documents/news/2012/nr073.pdf> (accessed 19 April 2016).

25 M. Forstater, 'The European Economic and Monetary Union: introduction', *Eastern Economic Journal*, vol. 25, no. 1, winter 1999, pp. 31–4.

26 P. De Grauwe, 'Economic theories that influenced the judges of Karlsruhe', *Vox*, 13 March 2014, <http://www.voxeu.org/article/economic-flaws-german-court-decision> (accessed 19 April 2016).

27 ECB, *Asset Purchase Programmes*, <https://www.ecb.europa.eu/mopo/implement/omt/html/index.en.html> (accessed 19 April 2016).

28 D. Papadimitriou and L. Randall Wray, *Euroland's Original Sin*, Levy Economics Institute Policy Note 2012/8, 2012.

29 B. S. Bernanke, *The Great Moderation*, Federal Reserve Board, 2004, <http://www.federalreserve.gov/boarddocs/speeches/2004/20040220/> (accessed 19 April 2016).

30 G. Brown, *The New Monetary Policy Framework*, 1997, <http://www.bankofengland.co.uk/monetarypolicy/Documents/pdf/chancellorletter970506.pdf> (accessed 19 April 2016).