

# A GUIDE TO PUBLIC MONEY CREATION

Outlining the Alternatives  
to Quantitative Easing

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# 1. INTRODUCTION

Despite a surge in growth in 2014, a number of issues still threaten the sustainability of the UK's economic recovery. Global growth has been at its lowest since the 2008 financial crash (OECD, 2015). Low productivity is puzzling UK policymakers<sup>1</sup>. UK households have exceptionally high levels of debt and the lowest savings ratio in history (ONS, 2015).

Low inflation risks turning into deflation. Ultra-loose monetary policy – setting Bank of England (**BoE**) interest rates close to zero – and the use of Quantitative Easing (**QE**), has fuelled asset price bubbles in the financial and property markets (Turner, 2015; van Lerven, 2015; Jackson, 2013; Ryan-Collins et al., 2013). Indeed, there is a growing consensus that policymakers aiming to keep another recession at bay have run out of ammunition<sup>2</sup>.

Accordingly, such conditions have brought newfound interest to a number unconventional monetary policy proposals, also known as 'Helicopter Money', 'Overt Monetary Finance' (**OMF**), 'Strategic QE', 'Green QE', 'Green Infrastructure QE', 'People's QE' and 'Sovereign Money Creation' (**SMC**).

These unconventional monetary policy proposals are similar in that they all advocate the proactive creation of central bank money to stimulate growth in the real economy. Therefore, Positive Money uses '*Public Money Creation*' as an umbrella term for all of these proposals.

With the subject of central bank money creation now part of mainstream debates, there is confusion surrounding the different *Public Money Creation* proposals. While these proposals have similarities, they do have important differences, with distinct implications for the economy.

There is also some confusion regarding the differences between *Public Money Creation* proposals and the BoE's on-going £375 billion QE programme. This 'conventional' QE shows that the central government is willing to create new money to stimulate the economy. Indeed, proposals for *Public Money Creation* first emerged because they intend to provide a policy alternative to QE, which is believed by many not to have worked as intended.

The aim of our paper is to provide an accessible guide to QE and the different proposals for *Public Money Creation*. Instead of comparing the strengths and weaknesses of *Public Money Creation* proposals, we seek to demonstrate how each proposal would impact current operations at the BoE. This will give the reader an improved understanding of the differences between QE and each Public Money Creation proposal.

## 1.1 A Framework for Understanding Public Money Creation and QE

There are various ways of categorizing the differences and similarities between QE and each of the *Public Money Creation* proposals. We analyse the following 7 aspects of each proposal:

1. Intended Objective
2. Proposed use of central bank money
3. Transmission mechanisms and processes
4. Implications for the central bank's balance sheet

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1 See for example the Bank of England's 2014 Q2 Quarterly Bulletin, 'The UK Productivity Puzzle' (Barnett et al., 2014).

2 For example, the front cover of The Economist's February 20th 2016 print edition was titled "The World Economy: Out of Ammo?"

5. Implications for private sector balance sheets
6. Reversibility and offsetting policy levers
7. Impact on central bank independence

### **Aspect 1: *Intended objective***

QE and *Public Money Creation* are similar in that their ultimate purpose is to increase spending. However, QE aims to stimulate spending **indirectly**, through a number of complex channels. By injecting new money into the financial markets, it is hoped that: increased liquidity and lower borrowing costs will stimulate new lending; and, wealthier asset owners increase their levels of consumption. In altering the cost of borrowing and price of financial assets, QE attempts to persuade the private sector to change its borrowing and spending behaviour.

In contrast, *Public Money Creation* proposals aim to use the BoE's money creating powers to boost spending in the real economy directly.

Some of the proposals aim to strategically direct credit towards businesses outside the financial sector, and towards infrastructure projects. With these, the BoE would create money for an intermediary (i.e. public investment bank), who can then lend to the private sector; newly created money is lent into the real economy. By directly stimulating lending in the real economy, spending should be increased.

Conversely, other proposals aim to directly increase spending, without the private or public sector having to increase its net level of debt. In these proposals, newly created money is effectively spent, rather than lent, into the economy.

### **Aspect 2: *Proposed use of central bank money***

When compared to QE, *Public Money Creation* proposals have different recommendations as to how the central bank's ability to create money could be used. Four general approaches can be distinguished:

1. Proposals that advocate using central bank money to directly finance lending to large businesses, SMEs, social enterprises, co-operatives, and local governments.
2. Proposals that advocate using money that is newly created by the BoE to finance infrastructure investment (via lending or spending).
3. Proposals that advocate using newly created money to finance either a tax cut, or direct cash transfers to households, such as a one-off "citizen's dividend" (a non-repayable grant to every citizen).
4. Proposals that offer a mix or combination of the three options above.

### **Aspect 3: *Transmission mechanisms and processes***

QE and each *Public Money Creation* proposal has a different set of transmission mechanisms and processes, with a different impact on private sector incomes, spending, employment, output etc. By specifically outlining the processes and transmission mechanisms of each proposal, we show how each proposal intends to influence the economy. We also outline how the process of each proposal works in terms of the balance sheets of different sectors in Appendix 2.

### **Aspect 4: *Implications for the central bank's balance sheet***

There are also important implications for the BoE's balance sheet to consider. In these proposals, central bank money is created in exchange for government bonds (the government's debt securities). If the BoE holds these bonds permanently on its balance sheet, then there will be a permanent increase in base money (money created by the central bank). In contrast, if the BoE eventually sells these securities, or

allows them to mature without rolling them over<sup>3</sup>, then these securities would no longer be on its balance sheet. The BoE will only have temporarily held these securities, meaning base money will have been temporarily increased.

In proposals where government expenditure is to be financed by newly created money, the BoE is intended to permanently hold a corresponding amount of government debt. This means that government spending will not have been financed through the traditional channel of borrowing – selling newly issued bonds to the private sector. Instead, spending will have been financed by a permanent increase in the stock of central bank money (and a corresponding equal increase in the stock of bank deposits held by the public).

It is important to understand that the amount of government debt securities – in the form of bonds – permanently held by the BoE, will not enter the government budget constraint and will not count towards the long-term debt-servicing burden of the government (Turner, 2015). This equates to monetary financing, as government spending is financed by central bank money creation, and spending will have taken place without increasing the net public debt.

Conversely, a temporary increase in the stock of central bank money cannot finance government spending without increasing the government's future debt burden. When the BoE intends to hold a certain value of government debt “temporarily” on its balance sheet, it can be said to have financed government spending only temporarily. Once the BoE stops holding the government debt on its balance sheet, by selling it back to the private sector<sup>4</sup>, then the government's debt servicing burden to the private sector will have increased accordingly.

Therefore in *Public Money Creation* proposals, where the objective is not to finance government spending but to finance lending to the private sector, central bank money only needs to be temporarily created. This is because central bank money is created for a public intermediary, for the duration of the lending it is intended to finance. The particular enterprises borrowing money from the public intermediary will have to repay their loans over time. Once the public intermediary has been paid back in full and the decision has been taken to bring the programme to an end, the intermediary can pay down its debt to the BoE. This would remove the public intermediary's debt from the BoE's balance sheet, and the stock of central bank money would decrease.

### **Aspect 5: Private sector balance sheet implications**

The different composition of each proposal means that there will be different implications for the balance sheet of the private sector.

When central bank money is created to finance spending, private sector incomes will automatically increase without increasing the private sector's level of debt.

This is because government expenditure boosts the aggregate level of private sector income. Government spending directly increases the private sector's gross income; and a tax reduction will increase the disposable income of the private sector. In doing so, the government increases the net amount of financial assets (in this case, in the form of bank deposits) held by the private sector. The private sector acquired these assets without having to incur any liabilities (i.e. without having to borrow).

However, government expenditure is financed by taxation and borrowing from the financial markets. Government expenditure tends to exceed the revenues generated via tax, and is thus partly financed by new borrowing. So while government expenditure increases private sector incomes it can also increase the government's debt servicing burden.

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3 When bonds mature, the principal of the loan (and all remaining interest) is due to be paid. A ‘rollover’ would involve the BoE reinvesting the funds from the matured government security into a new issue of exactly the same government security. If the BoE doesn't rollover government securities, it is not using the funds acquired from maturing securities to buy new securities.

4 Alternatively, if the debt held by the BoE matures and the BoE does not renew its holding of government debt then the government debt would no longer be on its balance sheet. In order to pay down its debt to the BoE, the government would issue new bonds to the private sector – taking out a new loan to pay down an old debt. In which case, the private sector will have been called on to re-finance the government original spending and the government's net debt burden will have increased.

If the BoE purchased government debt and permanently held it on its balance sheet, then government's spending will have boosted private sector incomes without increasing the government's long-term debt servicing burden to the private sector.

In proposals where central bank money is created to finance new lending, private sector assets would increase but so would private sector debt. The private sector would need to borrow, so the private sector's assets (i.e. bank deposits) would increase but so would its liabilities (i.e. debt obligations). Throughout these transactions, the private sector's balance of net financial assets has not increased. It is therefore necessary to further deconstruct the private sector, to better understand; 1) what types of assets the private sector is holding, and 2) how assets and liabilities are distributed amongst households and businesses.

### **Aspect 6: Reversibility and offsetting policy levers**

There are two issues worth considering:

1. If *Public Money Creation* is to finance specific investment, then it need not be permanent and can be reversed. The proposal should explain how that would be done. If however money creation is intended to stimulate activity by increasing the disposable income of the private sector (without increasing net debt levels) then it must be credibly permanent and should not be reversed;
2. If inflation starts to rise, then that can be handled through the BoE's normal inflation targeting processes. But this requires an adequate stock of transferrable assets, which the BoE can use to drain money from the banking system. If stocks are insufficient then the government must be prepared to allow the Bank to sell assets acquired under *Public Money Creation* even if that was intended to be permanent<sup>5</sup>.

Since the BoE can create and drain money through several different balance sheet transactions, there are different policy levers available for reversing or offsetting the impacts of each proposal.

### **Aspect 7: Impact on Central Bank Independence**

The issue of the BoE's current independence has been debated at length. It is clear that the lines within which the BoE can be said to independent are blurred. We take the view here that the BoE is currently operationally independent, yet has its targets set by government and is ultimately accountable to the government<sup>6</sup>.

This means that it is the democratically elected government who determines the mandate for the BoE. Government sets the BoE's objectives and targets and decides what tools it can use to reach those objectives. It is then up to the BoE to independently decide how best to use those tools to achieve its mandate. The BoE will independently come up with proposals on how it wants to use the tools at its disposal – it may even come up with proposals for using new tools. However, the BoE needs to submit those proposals to the Treasury for approval. Only after the Treasury has given its approval, can the BoE implement its proposals.

Some *Public Money Creation* proposals see the Treasury taking the leading role in the decision-making process, in which case the Treasury would be taking an active role in devising the plans and operations of the BoE. In this case, the Treasury is not simply approving the proposals put forward by the BoE, but directly telling the BoE what to do and how to do it.

An important aspect of central bank independence is whether it provides mechanisms to prevent the abuse of money creation by the government. To prevent such abuse, it is often argued that monetary policy proposals need an appropriate separation of institutional powers. Politicians would need to be prevented from being given direct control over money creation, as there is a risk that political pressures could lead

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5 Blyth, Lonergan, and Wren-Lewis (2015) suggest that: "If the Bank ever runs out of the assets it needs to do this, the government can commit to provide them in much the same way as it has already done for potential QE losses. A government that would renege on this commitment and allow inflation is also a government that would abolish the independence of the Bank to achieve that aim."

6 While our position is that the BoE is operationally independent and accountable to the government, we do believe that this accountability can be substantially improved.

governments to creating too much money. Similarly, unelected public administrators of the central bank should not have a say in how public money is used, as this would enable them to gain influence over government policy.

Along these lines, it is often argued that central banks should have the operational independence to decide how much money to create. The decision of where to allocate money should be taken separately by elected politicians (or a group of people directly accountable to elected politicians).

Therefore, when reviewing the impact of QE and each *Public Money Creation* proposal upon central bank independence it is important to understand:

1. Who determines the quantity of new money to be created?
2. Who determines how the new money is allocated?

## 1.2 Structure

Part 1 of this report begins by giving a concise overview of the economic conditions that prompted QE. Next we look at the BoE's current QE programme in more detail, and then explain the general criticisms of QE from the perspective of the proponents of *Public Money Creation*. In Part 2, we go through each proposal for *Public Money Creation* according to the above framework. We conclude by discussing the main differences and similarities of QE and the different *Public Money Creation* proposals.

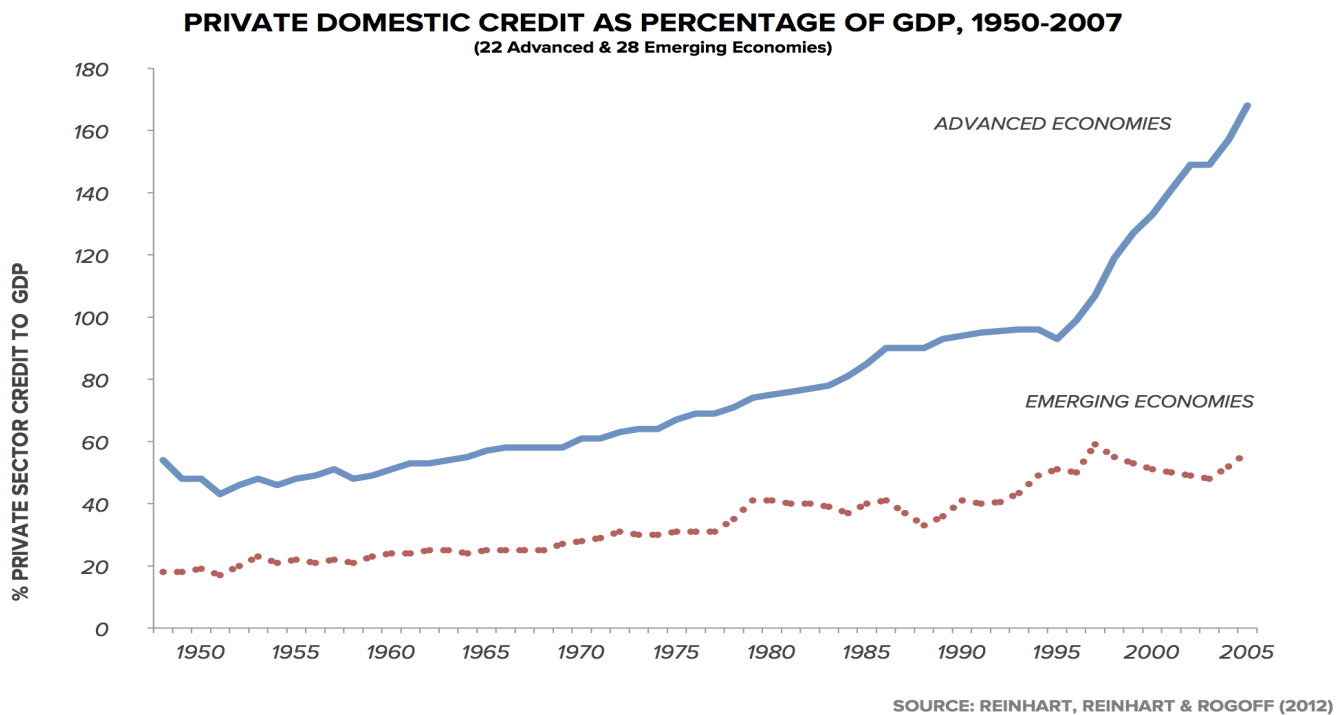


## 2. UNDERSTANDING QE AND ITS CRITICISMS

This section gives a brief outline of the factors that led to the implementation of the BoE's QE programme. We provide an overview of the QE programme and then highlight the primary criticisms of QE.

### 2.1 Private Debt and the Financial Crisis

For many of the world's major economies, the run-up to the 2008 global financial crisis was characterised by excessive private sector credit growth. Across advanced economies, private sector debt on average stood at 90% of GDP in the mid-1990s, and nearly doubled to 170% of GDP by 2007. Over the same period, private sector debt in the UK grew from 120% of GDP to 200%.



The build-up in private sector credit was largely the result of unconstrained private bank lending into the financial and property markets<sup>7</sup>. Bank loans create new money and therefore increase the available spending power in the economy<sup>8</sup>. The increased availability of money (spending power) leads to an increase in the aggregate demand for goods and services in the economy.

7 See Dyson and Jackson (2013).

8 For a more detailed explanation of how private commercial banks create money see the Bank of England's [2014 Q1 Bulletin](#).

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## Box 1: Assets and Liabilities

A balance sheet is an accounting record records everything that an entity owns, is owed, or owes. The balance sheet comprises three distinct parts. Assets are everything that an entity owns or is owed. Assets can be cash, government bonds, central bank reserves, and other financial products, such as mortgages and loans. Liabilities record what an entity owes to other people, organisations, or banks. An entity that takes out a loan (by issuing a bond or borrowing from a bank) has increased its liabilities (the loan) as well as its asset (the money which it can spend). Equity is simply the difference between assets and liabilities. It represents what would be left over for the owners of an entity if all assets were sold and the proceeds used to settle the entity's liabilities (i.e. pay off its creditors).

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By creating extra money to finance the purchase of property and financial assets, private bank lending increased demand for these assets (see Box 1 above). As supply in such markets reacts extremely slowly to demand, if at all, the main impact of bank lending was to push up asset prices (Jackson, 2013). Since most lending was used to buy pre-existing assets in the property and financial sectors (rather than being invested in the productive capacity of the real economy), it increased the level of private debt but did not lead directly to an increase in national income (see Box 2 below). **The level of debt had increased faster than private sector incomes**, making the economy more susceptible to shocks (Minsky, 1984).

The increase in private debt could not outpace the growth of private sector incomes forever. Demand for new loans and new money creation eventually slowed down, triggering a fall in demand for property and financial assets. Property prices and the financial assets linked to them eventually collapsed in value, and a financial crisis ensued (Jackson, 2013).

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## Box 2: The Financial Economy and the Real Economy

Between 2000-2007, UK private banks created more than £1 trillion worth of new money, increasing the money stock 2.5-fold. 31% of this newly created money was used to finance mortgages – people's homes, another 20% for commercial real estate loans, and 32% went to the financial sector. These sectors are referred to here as the 'financial' economy, the FIRE (Finance, Insurance, and Real Estate) sector of the economy. For the large part, the activities of the FIRE sector do not directly contribute to GDP growth, which is a measure of new (final) goods and services produced each year and a measure of the income that the economy generates. Trading of pre-existing financial assets does not produce new goods and services, and therefore much of the activity in the financial economy is not recorded as part of GDP.

In contrast, 8% of newly created money went to businesses and another 8% went to households for consumption (which could provide demand for their products). The residual 1% went to public sector organisations. These sectors are known as the real economy as they directly contribute to the production and distribution of new goods and services.

Source: Van Lerven (2015a)

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## 2.2 The Debt Overhang

The rapid increase in private sector borrowing was a primary cause of the 2008 crisis<sup>9</sup>, but also explains the intensity of the ensuing recession and prolonged recovery (IMF, 2012; Jorda et al., 2013; Koo, 2013).

Concerns over risk and the weak state of the economy caused the banking sector to reduce its lending. Faced with a high debt burden, as the crisis struck, households and businesses began deleveraging (paying off their existing debts)<sup>10</sup>. Since banks were unwilling to lend, entrepreneurs did not want to invest, and the private sector sought to deleverage, causing a fall in consumption and investment<sup>11</sup>.

As demand and spending declined, so did the incomes of households and businesses. Lower incomes led to a decline in tax revenues, while higher levels of unemployment implied increased social expenditures. Declining tax revenues and rising expenditures led to a significant increase in public sector deficits.

Consequently, public sector debt in the UK soared as the government borrowed more in order to finance the growing deficit<sup>12</sup>. Concerns about public sector accounts eventually led to the government introducing austerity policies.

However, austerity policies are contractionary over the short-term<sup>13</sup>. A reduction in public spending and/or higher taxes necessarily entails a decline in private sector incomes (from what they otherwise would have been). Lower private sector incomes lead to a reduction in available spending power, and thus to a reduction in aggregate demand.

In sum, the debt crisis led to a substantial reduction in aggregate demand. Austerity in the public sector meant that public spending was being sacrificed to reduce the budget deficit. Meanwhile, deleveraging in the private sector meant that spending was being sacrificed in order to pay back existing loans. This is also known as a debt overhang.

## 2.3 Monetary Policy and Aggregate Demand

Policymakers can stimulate aggregate demand and mitigate the negative effects of a debt overhang through monetary and fiscal policy. Relaxed fiscal policy – a cut in taxes and/or increased public spending – can boost private sector incomes and thus aggregate demand, and facilitate the paying down of private sector debt. However, this approach is currently politically unacceptable to many governments, as it would entail a further increase in public debt. The job of stimulating aggregate demand has thus fallen to monetary policy.

Conventional monetary policy entails the central bank attempting to influence aggregate demand by altering the ‘base’ rate of interest on the reserves banks hold at the central bank. In turn, this is primarily intended to change the interest rates that banks charge on their lending, changing the level of debt and money created by the private banking sector. Lowering base rates is thus intended to induce banks to lower their interest rates on lending, in order to stimulate private sector borrowing, resulting in more bank money creation, increasing the available purchasing power, and thus boosting aggregate demand.

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9 For the UK, see Jackson (2013) and for the Eurozone see van Lerven (2015b).

10 The recession and high levels of unemployment put downward pressure on household incomes, making it less attractive to take on more debt. Meanwhile, poor prospects for growth reduced the risk appetite of businesses; meaning businesses were not willing to take out new loans for investment.

11 A 2014 study by the BoE found: “There is evidence that high levels of household debt have been associated with deeper downturns and more protracted recoveries in the United Kingdom. Cuts in spending associated with debt are estimated to have reduced the level of aggregate private consumption by around 2% after 2007...” (Bunn & Rostom, 2014).

12 A deficit is when government spending exceeds tax revenues. A government surplus is when tax revenues exceed government spending.

13 See Turner (2015).

According to this principle, the BoE lowered interest rates close to zero. However, this failed to generate the desired increase in borrowing and money creation. For the most part loan repayments still exceeded new loan issuance, households and firms chose to use their income and run down their savings to repay debt rather than spend, and aggregate demand was in danger of contracting.

Jackson (2013) and van Lerven (2015b) show that when faced with a debt overhang, the impact of conventional monetary policy can be limited. This is because a change in the BoE's base rate is aimed at altering the price of credit and financial assets: the objective is to get the private sector to alter its behaviour and borrow more. However, if the private sector refuses to take on more debt, because it is trying to pay down existing debt or is pessimistic about future growth, then the transmission mechanism of monetary policy breaks down.

The BoE eventually became concerned that spending would continue to decline and the associated contraction in aggregate demand would lead to deflation, jeopardising the BoE's principal mandate of low (but positive) inflation<sup>14</sup>. As it became apparent that conventional monetary policy had become ineffective, the BoE turned to 'unconventional' policy measures. In terms of scale, Quantitative Easing (QE) has been the most prominent unconventional monetary policy measure.

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### Box 3: Creating Central Bank Reserves

The government, via the Bank of England, issues three kinds of money: metallic coins, paper banknotes, and electronic central bank reserves.

Central bank reserves can be seen as an electronic equivalent of cash. They are held in electronic 'reserve accounts' at the Bank of England. These reserve accounts are available only to banks, building societies, the central government and a small number of other strategically important financial sector companies. Central bank reserves cannot be held by non-bank businesses or members of the public, and are therefore not considered part of the money supply held by the public (measured by the Bank of England's statistical series 'M4').

As banks' respective customers pay each other by transferring deposits (mostly electronically), banks settle any net obligations between themselves by transferring central bank reserves between their accounts at the Bank of England. This means that central bank reserves serve as the final means of settlement between banks.

If the BoE wishes to inject new central bank reserves into the banking system (for example in response to a demand for reserves from a commercial bank), it can do simply by temporarily purchasing bonds held by commercial banks in exchange for central bank reserves. This is known as a repurchase agreement (repo), where the BoE purchases bonds with the agreement to sell them back to the bank, and the bank agrees to repurchase the bond, at a specific future date.

To purchase the bonds, the BoE would credit a commercial bank's reserve account with reserves it creates through balance sheet entries. In effect, the BoE creates new central bank money and trades it with the bank for bonds. The commercial bank swaps the bonds it held for central bank reserves.

A similar process of removing central bank reserves from circulating amongst banks occurs when the BoE sells the bonds (for example, when a repo matures). By selling the bonds in return for a reduction in the balance of the bank's account at the BoE, the balance of the BoE's central bank liabilities (reserves) would be reduced, in effect removing central bank reserves from circulating amongst commercial banks.

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<sup>14</sup> According to the BoE's website, "The Bank's monetary policy objective is to deliver price stability – low inflation – and, subject to that, to support the Government's economic objectives including those for growth and employment. Price stability is defined by the Government's inflation target of 2%." <http://www.bankofengland.co.uk/monetarypolicy/pages/framework/framework.aspx>

Therefore, central bank reserves are created every time the BoE purchases new bonds. They are destroyed (removed from circulation) every time the BoE sells the bonds it holds.

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## 2.4 Quantitative Easing

In early 2009, the BoE announced that it was launching an expanded asset purchase programme, otherwise known as Quantitative Easing (QE). As of January 2016 the BoE's asset purchases totalled £375 billion.

**Intended Objective:** According to a BoE report (2009), “The aim of quantitative easing is to inject money into the economy in order to revive nominal spending” (Benford et al., 2009). By increasing asset prices and decreasing interest rates, QE was originally intended to increase spending by encouraging more private sector borrowing. In addition, QE was intended to increase the wealth of asset owners – encouraging them to spend more.

**Proposed use of Funds:** Under QE, central bank money is created to purchase financial assets from institutions other than banks. The vast majority of these assets were government bonds<sup>15</sup>.

**Transmission Mechanisms & Processes:** The immediate effects of QE were to increase the prices of government bonds (since the BoE had to bid more than the then market price to buy the required quantity) and to increase the amount of central bank reserves and private sector deposits in the banking system.

The BoE established a new subsidiary to conduct QE, the Asset Purchase Facility (APF)<sup>16</sup>, usually referred to simply as the APF. The money created by the BoE to finance QE is lent to the APF and the APF purchases the bonds. This means that the BoE's balance sheet shows just the value of the loan to the APF as the asset backing QE. The bonds purchased through the QE scheme are held on the APF's balance sheet and it is the APF's balance sheet that carries the market risk, if any. The BoE has secured an indemnity from the Treasury against any losses that the APF may incur in winding up QE.

If the government bonds that are sold to the QE scheme had been owned by commercial banks, then the result of the exchange would have been that the commercial bank swaps bonds for central bank reserves, and there is an increase in the stock of central bank reserves held by banks. This does not change the quantity of deposits held by the public. In contrast, if the bonds are held by a non-bank (e.g. pension fund), then the exchange results in an increase in central bank reserves held by banks and an increase in the amount of bank deposits held by the private sector (see Appendix 2 for a full explanation of this process).

The exact channels through which this process may influence the economy are still subject to heavy debate. However, the most commonly cited channel is the *bank-lending channel*, which suggests that by injecting new central bank reserves (liquidity) into the banking system, banks will be more willing to lend.

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15 To a much lesser extent central bank money was used to purchase commercial paper and corporate bonds. Because only £0.5bn of the £375bn created was actually used to purchase corporate bonds and commercial paper our discussion is limited to discussing QE in the context of purchases of government bonds.

16 The APF allows the BoE to maintain a clear balance sheet distinction between QE and conventional monetary operations, despite the processes being effectively the same. A primary difference between QE and conventional BoE reserve creation is that under conventional monetary operations the BoE creates reserves in the form of loans to banks with government bonds of greater value put up by banks as collateral. This means that the BoE is exposed only to the risk that the borrowing bank may default, in which case the collateral may be sold to redeem the debt, and since the BoE demands bonds worth more than the debt, the chances of not being able to redeem the debt are small.

With QE, however, the BoE purchases the bonds outright and is therefore exposed to the daily fluctuations of their price on the market. Whilst this should not matter so long as QE is maintained and the bonds are held to maturity, the BoE has declared that QE is temporary and therefore the bonds would be classified as ‘held for sale.’ Under accounting rules this means that they should be regularly revalued at market prices, which would mean that the BoE's balance sheet would exhibit considerable variability. To prevent this variability from being exhibited on its balance sheet, the BoE established the APF.

The *portfolio-balancing channel* is also meant to encourage increased lending, by lowering long-term interest rates. By buying government bonds the BoE pushes up their price, which simultaneously pushes down their yields (the return earned by purchasers of pre-existing bonds). The lower yields are intended to encourage investors to move their investments into riskier assets with higher yields (such as corporate bonds and shares), directing more credit towards businesses and households. Similarly, lower yields mean lower interest rates (borrowing costs) for businesses, making it cheaper for them to invest or spend.

Through QE, the BoE shows the financial markets that it is committed to keeping interest rates low over the long-term. This is known as *the expectations (or signalling) channel*, as investors 'price in' their expectation of lower borrowing costs for the long-term, and alter their investment portfolios accordingly.

The *wealth channel* suggests that by increasing the price of financial assets, QE automatically increases the wealth of the asset owners, which is believed to lead to a boost in their spending.

While not mentioned by the BoE, there are also *the exchange rate channel and the fiscal channel*. The former works by lowering long-term interest rates in UK markets, which will incentivise investors to look for foreign assets that offer higher returns. This requires them to exchange pounds for a foreign currency. The lower demand for the pound means that it becomes less valuable relative to other currencies. A devalued currency is thought to help the economy, by making exports cheaper, which should encourage demand for exports from UK businesses.

The *fiscal channel* works in two ways. By increasing government bond prices and pulling down bond yields, QE lowers the interest rates that the government has to pay on its bonds. This lowers public sector borrowing costs. Moreover, as the BoE buys government bonds, interest payments on those bonds go from the Treasury to the Bank. However, profits of the BoE are remitted back to the Treasury. The overall effect is that the interest payments the government pays out eventually return to the Treasury.

**BoE Balance Sheet Implications:** The BoE publically states that it intends to unwind QE, meaning the money created by the BoE is intended to be temporary and will at some stage be withdrawn. The Office for Budget Responsibility is operating under the assumption that the BoE will sell off all the assets acquired through QE by 2022-2023.

However, if it became desirable to *increase the size of the QE programme*, the BoE would have to expand its balance sheet and issue newly created reserves to purchase pre-existing government debt.

In the meantime, *the BoE needs to maintain QE at its current level* by keeping £375 billion of government debt on its balance sheet until 2022-2023. However, every year a certain amount of the government bonds purchased under the QE scheme will mature, and the Treasury will need to pay the face value of those maturing bonds to the Bank of England. This withdraws an equal amount of central bank reserves from circulation.

Consider a hypothetical example, where £20 billion of government bonds held by the Bank of England mature and the Treasury has to pay down its debt to the BoE. The Treasury will then finance the repayment due to the BoE by selling newly issued bonds to the private sector, which withdraws reserves from the inter-bank lending market. By paying down its debt to the BoE, £20 billion of central bank reserves are deducted from the Treasury's account at the Bank of England. Therefore, only £355bn of central bank reserves would remain circulating in the banking system.

If the Bank of England chooses to 'maintain QE at its current level' (as opposed to reducing it by £20 billion) then the Bank of England must create another £20 billion to put into the interbank market, to replace the £20 billion withdrawn earlier. It does this by buying another £20 billion of government bonds from the private sector. A process such as the one laid out in this hypothetical example can happen many times throughout the year, depending on the maturity schedules of the bonds purchased.

To *unwind QE*, the BoE will either sell the APF's assets back to the private sector, or let a certain amount of debt mature, destroying both the £375 billion central bank reserves and an equivalent amount of bank deposits. If the BoE sells the government bonds it holds to the private sector, the debt servicing costs of the government would increase. If the government bonds held by the APF mature, then the Treasury would

issue new bonds to the private sector to finance its repayments to the BoE, which would increase the public sector's debt burden. In either case, the end result of unwinding QE is that the BoE will not have financed government spending by creating money.

**Private Sector Balance Sheet Implications:** The immediate impact of QE on the financial sector aggregate balance sheet was the exchange of government bonds for bank deposits. So the non-bank financial sector saw merely an exchange of assets and an increase in liquidity, whilst the banking sector saw an increase in deposit liabilities and a matching increase in central bank reserves – itself an increase in liquidity (see Appendix 2). It is in this sense that QE is often labelled as a large-scale asset swap.

By increasing liquidity in the economy, these transactions should incentivise more lending. Moreover, by increasing the prices of assets, long-term interest rates are reduced, which should encourage more private sector borrowing. In this particular sense, the income of the aggregated private sector is supposed to be boosted by incentivising banks to lend more and encouraging the private sector to take on more debt. This means private sector assets (i.e. the stock of bank deposits held by the private sector) will increase, but so will private sector liabilities (i.e. private sector debt).

However, the UK's QE programme does not directly target lending for the real economy. Instead, QE is primarily focussed on getting banks lending again. As explained in the previous section, 80% of private bank lending goes to activities in the financial and mortgage markets that do not directly contribute to GDP growth. Without specifically targeting QE at the real economy, QE implicitly reinforces the status quo and runs the risk of favouring the FIRE sectors (financial) over the real economy.

This has important implications for the private sector's balance sheet. To the extent that QE does result in increased levels of lending and borrowing, the majority of bank loans would not go to businesses for investment in productive revenue generating assets<sup>17</sup> that would provide a new continuous flow of goods and services over time. Rather, loans are provided to households to finance spending on pre-existing assets (i.e. houses) that do not add new flows of value to the economy, but inflate the price of pre-existing assets instead (Ryan-Collins et al., 2013).

But QE also has balance sheet implications for the private sector agents that hold financial assets. The effect on investors' and companies' balance sheets that sold their financial assets to the BoE, netted them a small capital gain on the premium paid under the QE programme. For the rest, savers and investors holding financial assets who hadn't participated directly in QE saw the values of their holdings rise, as the fall in yields caused by QE drove up the prices of stocks and shares across the board.

**Reversing and Offsetting QE:** QE is intended to be temporary. To date, the Monetary Policy Committee has not chosen to reduce ('reverse' or 'unwind') the level of QE, and there are doubts about whether it will ever be able to. However, if it did choose to, it could be done either through (a) selling government bonds back to the private sector, or (b) by letting the bonds it holds mature.

**Central Bank Independence:** The degree of institutional separation between the Treasury and the BoE, especially with regards to QE, is extremely blurred. From the exchange of correspondence between the former Governor of the BoE Mervyn King and former Chancellor of the Exchequer Alistair Darling<sup>18</sup>, it appears that the BoE submitted the proposals for the QE programme to the Treasury for approval. This suggests that the BoE had to get formal authorisation or approval from the Treasury before financing asset purchases with central bank money.

Indeed, the BoE required the Treasury's authorisation for the amount to be spent, the classes of assets that could be purchased, and the overarching time scale for purchasing such assets. Within this remit, the BoE had discretion over what specific securities to buy and when.

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17 Meaning real capital assets that are used to produce new flows of goods and services.

18 Letters between the BoE Governor and Chancellor on QE and the Asset Purchase Programme are available at: <http://www.bankofengland.co.uk/monetarypolicy/Pages/qe/facility.aspx>.

At the BoE, it is currently the members of the independent Monetary Policy Committee (MPC) who decide on the quantity of assets that the APF should purchase. However, it is the APF – staffed by 4 Directors of the BoE – that decides what type of assets to buy<sup>19</sup>.

## 2.5 Criticisms of QE

Understanding the criticisms of QE will help provide some context as to why proposals for *Public Money Creation* first emerged – and will give insight into how they are different from conventional QE. However, an exhaustive analysis of QE is beyond the scope of this paper<sup>20</sup>. Instead, we show some criticisms of QE from the perspective of those advocating for *Public Money Creation*.

**Intended Objective:** The BoE clearly states that the purpose of QE was to stimulate spending. But QE appears to have been an extremely inefficient way of going about it. For example, in putting forward the proposal for Sovereign Money Creation, Jackson (2013) suggests:

“For every £1 of money created via QE, UK GDP increased by just 10p-15p. While these effects are significant, they are undeniably small in comparison to the magnitude of the stimulus: it required £375 billion of Quantitative Easing – then equivalent to around 26% of GDP – to create just £37-£56 billion of additional spending.”

**The Bank Lending Channel:** Instead of increasing bank lending by injecting central bank reserves into the banking system<sup>21</sup>, in proposing Green QE, Anderson (2015) argues that QE had the opposite effect:

“In fact, in the UK, bank lending actually fell. QE therefore did not provide a lending boost to firms, and hence to output and employment, that its advocates had hoped for. One consequence of this was that the distributional impact was regressive: money for bonuses and dividends, but not for bringing unemployed people into employment.”

Jackson (2013) gives some insight into why the bank lending channel did not have its desired effect:

“First, banks do not tend to be constrained by a lack of reserves...In the uncertain recessionary environment that follows a financial crisis, banks are unlikely to have confidence in new loans being repaid and so they will be reluctant to lend regardless of the provision of reserves through QE.”

**The Portfolio-Rebalancing Channel:** There is also ample evidence that the portfolio-rebalancing channel did not encourage investment or lending to businesses in the real economy. Instead of leading to new spending on goods and services, this money has generally remained in the financial sector and inflated the price of pre-existing assets. In proposing Strategic QE, Ryan-Collins et al. (2013) argue:

“It is highly uncertain that this mechanism of ‘portfolio rebalancing’ works in reality. Instead – as evidenced by current volatility in stock, bond and currency markets – investors reacting to QE are likely to channel their money mainly into financial assets. This inflates the price of such assets, and enriches the assets’ owners, with minimal positive impact on the real economy.”

**The Wealth Channel:** By increasing the price of financial assets, QE may increase inequality. This is primarily because it is the wealthiest households who own the financial assets that are increasing in price. Therefore, many criticisms of QE point to a 2012 study by the BoE showing that QE results in an average

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19 Ryan-Collins et al. (2013) explain: “The APF is structured as a limited company, the Bank of England Asset Purchase Facility Fund Limited, wholly owned by the Bank of England. It is the directors of the APF who decide on the allocation of purchases. There are two directors, Spencer Dale and Paul Fisher, both of whom are executives of the Bank of England and who directly report to the Deputy-Governor, Charlie Bean, who in turn reports to the Governor. It is this group of Directors that ultimately decides on how QE funds will be allocated.”

20 For a more comprehensive analysis of QE see Ryan-Collin et al. (2013), Jackson (2013), and van Lerven (2015b).

21 For further analysis of the failure of the bank lending channel, see Butt et al., (2014) and Bezemer and Gardiner (2010).



increase in financial wealth of £10,000 per UK household (Bell et al., 2012). However, because the bulk of assets are owned by the wealthiest households, more than 40% of these gains went to the wealthiest 5% of households. The report further shows that QE could have increased the wealth of the richest 10% of households by up to £322,000 per household (Bell et al., 2012).

But more importantly, the wealth channel is considered weak because boosting the income of the wealthiest people is not likely to induce them to increase their spending in the real economy. For example, Ryan-Collins et al. (2013) suggest:

“Investors, companies and richer households seem to prefer holding on to the extra liquidity or wealth that QE has provided them with rather than invest their money in GDP-related transactions.”

**Expectations (signalling) Channel:** The criticism of the expectations channel is not so much that it is ineffective but that a number of other policies could achieve the same effect. For example, in putting forward the case for OMF, Turner (2015), states: “Such signalling could also however be achieved by direct forward guidance”. Indeed, van Lerven (2015b) argues that the benefits related to the expectations channel could be just as easily achieved “by taking other positive actions, such as monetary financing for the real economy”.

**Exchange Rate Channel:** There are doubts about the extent to which an exchange rate channel will result in devaluation and the extent to which devaluation can help the economy. Jackson (2013) for example argues:

“However, the likelihood of this [exchange rate channel] leading to an increase in exports is small, since other major economies are simultaneously engaging in QE so that the effects cancel each other out.”

**Fiscal Channel:** There is a consensus that QE did work through the fiscal channel, as it lowered the interest payments of the government; and the profits of the BoE from holding government securities were remitted back to the Treasury. By 2013, Ryan-Collins et al. (2013) suggest that QE saved the government around £55 billion. However, it is also worth mentioning that lowering interest rates will lower payments from the government to the members of the private sector holding government bonds, in effect lowering incomes.

However, while advocates of *Public Money Creation* may agree that the fiscal channel works under QE, they also suggest (either explicitly or implicitly) that the ‘fiscal effect’ will be much greater under their proposals<sup>22</sup>. This is simply because *Public Money Creation* proposals involve the central bank creating new money to directly finance government expenditure, in the process saving the government billions in interest payments to banks and other creditors.

**Adverse Side Effects:** In addition to promoting inequality, QE promotes leveraged financial speculation and asset bubbles. As noted by Hines and Murphy (2010) in their proposal for Green Infrastructure QE:

“The benefit (of QE) has been captured almost entirely by the financial services sector whilst further asset boom and bust cycles are, at least potentially, being recreated with resultant risk to the economy.”

Moreover, by encouraging the private sector to take on more debt, QE puts the sustainability of any potential recovery at risk. As noted by Jackson (2013):

“If the increase in lending reflate an asset price bubble, then the reduction in interest rates may simply be setting the stage for a longer and deeper recession in the future.”

Turner (2015) suggests that the potential for asset price bubbles and ensuing financial instability has even prompted the Bank of International Settlements to argue that ultra-loose monetary policy should be abandoned. Indeed, Turner (2013) suggests that QE is an extremely dangerous strategy given that excessive private debt is what caused the global financial crisis:

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22 See for example, Van Lerven (2015b).

“We got into this mess because of excessive creation of private credit and money: we should be concerned if our only escape route implies building up a future excess.”

In this regard, QE is not dangerous because it largely relies on increasing levels of debt to boost incomes, but because it reinforces the same type of lending that led to the 2008 financial crisis. Therefore, under QE, lending to the FIRE sectors (financial) is preferred over the real economy; and lending to households is preferred to businesses. The bulk of loans taken out by households are spent on ‘non-productive’ pre-existing assets (i.e. houses). Rather than creating new flows of goods and services for the economy, this type of lending will merely increase the prices of pre-existing assets and will lead to unsustainable levels of household debt (Ryan-Collin et al., 2013).

# 3. MONEY CREATION FOR THE PUBLIC

QE showed that central banks are willing and able to create new money to stimulate the economy when commercial banks are unwilling to create money through lending, when firms and households are unwilling to take on more debt and when other policies to stimulate the economy have failed. The inefficiency and adverse side effects of QE have prompted a number of alternative proposals for the use of the central bank's ability to create money. Instead of using central bank money to stimulate lending and spending through indirect, complex channels, *Public Money Creation* advocates using newly created central bank money to stimulate the real economy directly.

There is a strong intellectual body of history behind the *Public Money Creation* proposals dealt with here, dating back to the likes of Irving Fisher, John Maynard Keynes, and Milton Friedman (for more information, see Appendix 1). There is also a long history of central banks creating money for investment in the real economy. In fact, throughout history money creation by central banks has been the norm, not the exception (Ryan-Collins, 2015).

Accordingly, the *Public Money Creation* proposals discussed here build on this intellectual history to show that the BoE can create money to stimulate the economy. We will compare and contrast the following proposals:

- **Strategic QE** – Proposed by the New Economics Foundation
- **Green QE** – Proposed by Victor Anderson, endorsed by Molly Scott Cato (MEP)
- **Helicopter Drop** – Proposed by Ben Bernanke (and a number of others)
- **People's QE** (based on Green Infrastructure QE) – Proposed by Richard Murphy and Colin Hines, and lately by the Labour Party.
- **Overt Monetary Financing & Sovereign Money Creation** – Proposed by Adair Turner and Positive Money<sup>23</sup> respectively, and sufficiently similar to be treated as one proposal.

There are a number of other proposals that could be classified as *Public Money Creation*, but most of them are a variation of the themes above. Our hope is that by understanding the differences and similarities between the above proposals, the reader will be equipped with a basic framework for understanding other proposals for *Public Money Creation* not discussed here.

## 3.1 Strategic QE

Strategic QE is an adaptation of conventional QE proposed by Ryan-Collins et al. (2013) on behalf of the New Economics Foundation. It is based on the premise that traditional QE did not achieve the increase in investment and lending to productive sectors of the economy necessary to restore sustainable levels of nominal GDP growth. The report argues that the transmission mechanism of traditional QE is flawed as it relies upon simplistic assumptions that lower interest rates and greater liquidity will lead investors and banks to invest in the real economy.

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<sup>23</sup> It should be noted that Sovereign Money Creation (SMC) as proposed by Positive Money is only an interim stage towards our proposals for a full Sovereign Money System, which involves a radical change to the relationships between banks, the private sector and the central bank. See <http://positivemoney.org/our-proposals/>

**Intended Objective:** Strategic QE aims to enhance the positive impact of QE on the real economy, so that credit is more strategically directed towards enterprises outside the financial sector, and to infrastructure projects. The BoE stimulates investment spending into the productive sectors of the economy by creating central bank money to finance new lending in the real economy. In this sense, Strategic QE is said to ‘create credit’ for the real economy.

**Proposed Use of Funds:** Central bank money would be created to finance lending to businesses in the real economy and for investment in homes or infrastructure. Strategic QE proposes that the BoE (via the APF) creates money and uses it to buy bonds from publicly owned intermediaries, such as a Public Investment Bank, Green Investment Bank, or Housing Investment Bank<sup>24</sup>. By buying the bonds of a government-owned intermediary, the BoE is in effect lending its newly created money.

**Transmission Mechanisms & Processes:** Under Strategic QE, the BoE (via the APF) can either create new central bank reserves to finance the scheme alongside the existing QE programme, or it can divert the payments from Treasury as the bonds it acquired through QE mature<sup>25</sup>. The maturity profile of the bonds the APF currently holds means that around £100 billion will mature over the next five years and this could be redirected into a Strategic QE programme instead of rolling over the existing QE programme. Strategic QE can thereby be implemented within the BoE’s existing operational set-up.

The publicly-owned intermediaries<sup>26</sup> would function like any other non-bank lender, by lending out their deposits<sup>27</sup>. The money raised from the sale of bonds to the BoE would be used to buy the bonds of – or make loans to – large corporations, small or medium enterprises (SMEs), green businesses, or construction companies for investment projects meeting public benefit objectives. As these bonds and loans matured, money would be paid back to the government-owned intermediary. The intermediary could then re-lend these funds to another entity.

By directing credit directly towards the real economy, investment would be allocated towards ‘productive’ assets, leading to an increase in the production and output of goods and services. Lending money for productive purposes would allow them to expand and hire more employees. This would increase private sector incomes and generate more spending, as well as provide the vital infrastructure that the UK economy needs.

**BoE Balance Sheet Implications:** Assuming that Strategic QE would function like conventional QE, then at some appropriate point in the future Strategic QE would be unwound. The money created by the BoE is intended to be temporary. The bonds of the government-owned intermediary would not permanently remain on the BoE’s balance sheet (see Appendix 2 a for full explanation of this process).

The interest paid on the loans or bonds held by the BoE would represent interest income from the BoE’s money-creating powers and, after deduction of appropriate operating costs, the balance would be remitted to Treasury. As the bonds issued by the intermediary matured, the BoE would subscribe for new issues to roll over the debt until it was decided that economic conditions were such that the stimulus of Strategic QE was no longer necessary (or desirable). At that point the bonds would be allowed to mature without replacement, or sold to the private sector. The intermediary could then continue operations relying on private sector financing.

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24 The benefit of these intermediaries is that they specialise in financing the productive sectors of the economy that have spare capacity. In addition, “The use of intermediaries ensures an appropriate division of responsibilities between investment professionals that have the expertise to assess and select individual companies and projects, and economists at the BoE who have the expertise to identify economic sectors that require capital investment.” (Ryan-Collins et al., 2013).

25 For a more in depth explanation of this process see our explanation of QE, Accounting and Balance Sheet Operations: Step 3. Maintaining QE at its Current Level.

26 Public investment banks do not operate in the same way as commercial banks. They do not have banking licenses and therefore their liabilities cannot be treated as deposits and transferred as means of payment. Therefore, they cannot lend by creating money.

27 We assume that the public-investment bank would not have an account at the BoE, and would therefore only be able to lend out its commercial bank deposits.

**Private Sector Balance Sheet Implications:** At the aggregated level, Strategic QE would increase private sector incomes through the stimulatory effect of its BoE financed investments in productive enterprises. However, since investment would be via the purchase of the bonds issued by the enterprises, or loans to those enterprises, the level of private sector debt would increase correspondingly. This means that Strategic QE would not result directly in an increase in the net worth of the private sector (see Appendix 2). The private sector would need to borrow the newly created money from the intermediary, so the private sector's assets (in the form of deposits) would increase but so would its liabilities (the loan from the public intermediary). Throughout these transactions, the private sector's balance of net financial assets would not have increased.

But the private sector is made of both households and businesses, and it is important to clarify that Strategic QE would have a different impact on each of these. It is the businesses that borrow money and then spend a portion of it on salaries and wages – increasing household incomes in the process. Accordingly, the incomes of households (and their net assets) would increase without having to increase their level of debt.

However, businesses do not just borrow money to finance salary and wages costs, they also borrow to invest in productive or revenue-generating assets. Ryan-Collins et al. (2013) explain the importance of productive assets in more detail:

“If a loan funds the building of a house, or a railway or a broadband network, it is creating a productive asset. A productive asset creates value over many years, providing a continuous flow of increased products and services over time...In contrast, if new money is created and spent on existing assets, such as existing houses, equities, bonds, or derivatives, this does not create any new flow of value – instead it is more likely to simply increase the price of the asset (i.e. asset-prices).”

Importantly, by borrowing to invest in productive assets that create new flows of income over time, businesses can use their new flows of income to pay down their loan over the longer-term. So while businesses initially take on debt, by investing that debt into the productive sectors of the economy, the debt can be paid off over time. As long as the debt incurred by businesses is invested in productive assets that generate new flows of income, the debt to income ratio will decrease.

**Reversing and Offsetting Strategic QE:** If economic conditions suggested that it would be desirable to reduce the amount of money in circulation the BoE could first sell off any remaining government bonds it had acquired through QE. By selling the government bonds to the private sector, the BoE would be removing central bank money from circulation. Alternatively, the APF could sell its share in the publicly owned intermediary to the private sector, which would have the same effect.

**Central Bank Independence:** The authors of Strategic QE acknowledge that the lines between fiscal and monetary policy, as well as central bank independence over monetary policy, have always been blurred. While Strategic QE does not propose a significant institutional re-structuring of the current monetary system<sup>28</sup>, it is based on the notion that there is room to improve the decision-making process surrounding the allocation of QE asset purchases.

To improve the governance of the BoE and the Strategic QE programme itself, Ryan-Collins et al. (2013) suggest that the Treasury creates an independent “Monetary Allocation Committee” (MAC), answerable to parliament through a Treasury Select Committee. The MAC would effectively decide how the APF would spend its money – determining which sectors assets should be purchased from. The decision over the sectoral allocation of funds would be based on a broad range of criteria (i.e. impact on GDP growth, employment, financial stability, the trade balance, inflation and ecological sustainability). However, the APF and the MAC would not explicitly choose projects or businesses that would receive funding. This would be the roll of the public intermediary (i.e. public investment bank), which ensures a separation of responsibilities and shields the MAC from political capture.

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28 For example, Ryan-Collins et al. note, “Rather than attempting to persuade the Bank of England to return uncomfortably to its broader remit of the 1960s, the Treasury might be better served focusing on creating an institutional framework that would enable QE to be directed to the real economy in a way that the Bank of England would be comfortable with.” (2013).

Meanwhile, the current Monetary Policy Committee (MPC) would decide on the quantity of money creation to finance Strategic QE, in line with its current remit.

In this sense, transparency and accountability would be improved, whilst still maintaining a certain degree of central bank independence.

## 3.2 Green QE

Green QE, as proposed by Victor Anderson (2015) and endorsed by Green Party MEP Molly Scott Cato, is aimed at supporting the European Union's transition to a green economy. It is based on the notion that the UK's QE programme currently misses the opportunity to contribute to the transition to a low-carbon and pro-environment economy.

**Intended Objective:** The aim of Green QE is to enhance the positive impact of QE on the real economy in a way that improves the sustainability of the economy. Investment spending would be stimulated by creating central bank money to finance lending for green initiatives. Like Strategic QE, under Green QE the BoE would be creating money for lending into the real economy as part of a Europe-wide initiative.

**Proposed Use of Funds:** Green QE proposes that the ECB and other national central banks within the EU use their money creating powers to help the EU make a 'green' economic and social transition<sup>29</sup>. The funds would be mainly used to finance lending to the private sector for green infrastructure projects and green businesses<sup>30</sup>. The BoE (and other national central banks) would buy bonds issued by the European Investment Bank (EIB) in exchange for central bank reserves.

**Transmission Mechanisms & Processes:** Like the Strategic QE proposal for the UK, Green QE for the EU is intended to build upon existing QE programmes. In effect, the BoE would be creating new money to finance the EIB. The EIB would then lend money to the green productive sectors of the UK economy<sup>31</sup>.

The transmission mechanism is therefore generally the same as Strategic QE, however, with spending being restricted to activities that will enable a transition to a green economy. The productive sectors will have a more positive environmental impact, or "at least they can help steer the economy in the long-term towards a positive or much lower negative environmental impact" (Anderson, 2015).

**Impact on BoE's Balance Sheet:** Assuming that Green QE would function like conventional QE, then it is intended that it would be unwound at some point in the future. The money created by the BoE would be intended to be temporary, and the bonds of the EIB would not be intended to permanently remain on the BoE's balance sheet.

The principal difference for the BoE between the Green QE and Strategic QE proposals is the extent to which the bonds issued by the EIB would be denominated in sterling or euros. Where investments are to be made in UK companies, it might make sense for the EIB to issue sterling denominated bonds, which would pose no problems for the BoE. However, if the rules of the scheme, as eventually agreed, meant that all national central banks should subscribe proportionately, then the BoE might be required to buy euro denominated bonds, with associated exchange rate risks.

**Private Sector Balance Sheet Implications:** Like Strategic QE, Green QE would increase private sector incomes but would also increase the level of private sector debt. The creation of central bank money for Green QE would therefore not result in a net increase in private sector assets (see Appendix 2). However,

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29 The proposal notes, "By itself, this wouldn't be sufficient to bring about the thorough economic and social transition that is needed. Other (corresponding) policies would be required as well." (Anderson, 2015).

30 The Green QE proposal offers an extensive list of different examples of what businesses could be considered green, and what infrastructure projects fit a green criterion.

31 The EIB would have to be reformed so that a new green department would be established, with the sole purpose of implementing the Green QE programme.

within the private sector, household incomes would increase without any corresponding increase in household levels of debt, whilst corporate debt levels would increase, but backed by (green) productive assets which generate the revenue to service that debt.

**Reversing and Offsetting Green QE:** Green QE is intended to be a temporary expedient. As with strategic QE, once economic conditions indicated that it would be desirable to reverse the process of central bank money creation, the BOE could sell its EIB bonds to the private sector or refrain from reinvesting as the bonds matured. It would be a question for the rules framing body whether the BoE would be permitted to reverse its contributions independently of the other central banks.

**Central Bank Independence:** The Green QE proposal is less concerned with central bank independence in general, and more concerned about the degree of independence for the newly established “Green” investment department at the EIB. The Green Department would need to be accountable to its own executive committee. This would allow the department to operate “at arm’s length both from direct political control and from the EIB Board of Directors” (Anderson, 2015). The committee would not be ‘appointees of member state governments’ but would instead be appointed by the European Parliament, with an additional representative appointed by the European Commission. According to Anderson (2015), the committee would be required to:

“...publish regular quarterly reports on its strategy, current economic and environmental analysis, its investments and their actual and potential outcomes. These reports should be considered by scrutiny sessions of the European Parliament’s Economic and Monetary Affairs Committee and the Committee of the Regions.”

### 3.3 Helicopter Drops

Other than Milton Friedman and John Maynard Keynes, former Fed chairman Ben Bernanke is perhaps the most well known economist to have advocated a *Public Money Creation* type of proposal. Taking inspiration from Milton Friedman’s (1948) “Helicopter Drop” thought experiment (considering what might happen if newly printed cash were to be dropped out of a helicopter in order to boost spending in the economy) Bernanke suggested using newly created central bank reserves to fund a tax cut (Bernanke, 1999; Bernanke, 2002). The point both Bernanke and Friedman were trying to make is that the government could increase spending in the economy, without having to borrow from the private sector by issuing new bonds<sup>32</sup>.

Helicopter drops financed by central bank money creation have been advocated by a number of prominent economists in the UK (Kaletsky, 2012; Keen, 2012; Nugee & Hazel, 2014; Wolf, 2014; Lonergan and Blyth 2014; Wren-Lewis, 2014; Muellbauer, 2014). Consequently, there have been a number of different proposals for how such helicopter drops could take place. Drawing from these various proposals, we provide a general outline of how a money-financed helicopter drop could be implemented in the UK.

**Intended Objective:** To avert the deflationary effects of a recession and debt overhang by using newly created central bank money to directly increase household disposable incomes, and consumer spending, without increasing the net level of household debt in the economy.

The proposal assumes that demand and the productive capacity of the economy have not hit their full potential, so that there is a significant gap between actual output and potential output. In such circumstances, the economy is capable of producing more but there is simply not enough demand for producers to increase supply.

By directly increasing demand through money-financed helicopter drops, producers will create more goods and services – and eventually the economy will reach its productive potential, without causing significant inflationary pressure.

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32 Or as Friedman (1948) put it “In a period of unemployment it is less deflationary to issue securities [in order to fund a deficit] than to levy taxes. That is true. But it is still less deflationary to issue money”.

**Proposed use of Funds:** Newly created central bank money would be used to finance a cash transfer from the government to each citizen (or each adult), via a “citizen’s dividend” (a non-repayable grant to every citizen), so long as the payment infrastructure exists to make a payment to every citizen.

As an alternative, in Bernanke’s original proposal, the government cuts taxes, leaving members of the public with higher disposable income and therefore greater spending power. The newly created money is given to the government to compensate for the drop in tax revenue.

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#### Box 4: ‘Helicopter Drops’ versus ‘Helicopter Money’

The terms ‘Helicopter Drop’ and ‘Helicopter Money’ are often used interchangeably. In this paper, we make the following differentiations between the two terms.

**Helicopter Drop:** This specifically involves the government directly transferring money to households and businesses, through a cut in taxes or a citizen’s dividend fund. The helicopter drop can be realized by either borrowing from the private sector, or by using the central bank’s money-creating powers. Bernanke proposed the latter, which explains why he refers to his proposal as a ‘money-financed helicopter drop’.

**Helicopter Money:** Is when the central bank uses its money-creating powers to directly finance expenditure. It involves the “permanent” creation of central bank money, where a certain amount of government debt (in the form of bonds) will be permanently held by the Bank of England. “Helicopter Money” is therefore a synonym for monetary financing and can be used for any form of government expenditure (i.e. a citizen’s dividend or infrastructure investment).

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**Transmission Mechanisms & Processes:** A money-financed helicopter drop would require collaboration between the Treasury and the BoE. In keeping with its current operational independence, the process would begin with the BoE determining the size and timing of the helicopter drops.

Next, the BoE would need to get the newly created money to the Treasury by buying government bonds. However, in many countries there is a prohibition on central banks buying newly issued government bonds directly from the Treasury. According to article 123 of the Lisbon Treaty, national central banks can only buy their respective government’s bonds from the private sector. This prohibition is intended to ensure that governments are subject to the financial discipline of the market, which will demand a greater discount on the purchase price if government borrowing is felt to be excessive, a discipline it is suspected a compliant central bank would not impose.

So the Treasury could first issue new interest bearing bonds and sell them to UK private banks, which the BoE would purchase immediately after. By buying public sector bonds that had been originally purchased by another entity (in this case commercial banks), the BoE would not be violating the EU Lisbon Treaty. Alternatively, if the prohibition was no longer in place, the Treasury could issue new non-interest bearing perpetual bonds that the BoE would buy directly.

With newly created money credited to its account at the Bank of England, the Treasury could finance direct cash transfers to households. The mechanisms for identifying and paying eligible recipients would need to be established as part of the implementation.

Alternatively, the government could implement a nationwide tax cut and use the newly created money to cover the revenue lost due to the tax cut.



In either case, a money-financed tax cut or citizen's dividend would increase the disposable income of households, which they could use to pay down existing debt<sup>33</sup> or spend as they please.

When used to pay down existing debt (i.e. to deleverage), the private sector's debt-to-income ratio is reduced. This reduction in the debt-to-income ratio would enhance financial stability and make growth more sustainable.

The reduction in the debt-to-income ratio would also come about without the private sector having to sacrifice spending. Normally, private sector deleveraging means that a certain portion of consumption spending or investment is sacrificed so that debts can be repaid. Money-financed helicopter drops can compensate for the reduction in spending that results from the deleveraging process. By paying off existing debt, the monthly proportion of income used to service debt would be reduced, leaving the recipient with a higher monthly disposable income.

Accordingly, a money-financed helicopter drop would lead to higher levels of disposable income, which would ultimately lead to more spending, more demand and more tax revenue. This increased revenue could be used to finance additional payments for non-taxpaying recipients of state benefits.

Higher levels of spending mean that businesses sell more and thus need to hire more employees and produce more goods and services. Through a multiplier effect, this generates a further rise in incomes, and thus more people spending and more goods and services being produced. As demand increases and more goods and services are correspondingly supplied, the economy will eventually reach its productive potential.

**BoE Balance Sheet Implications:** A money-financed helicopter drop involves the BoE permanently keeping government bonds on its balance sheet, equal to the value of the original tax cut or citizen's dividend. If the BoE were to purchase interest-bearing government bonds from UK banks, then it would need to keep rolling over these bonds by purchasing more whenever the old bonds matured and were repaid by the government (see Box 5 below).

If the BoE could buy bonds directly from the Treasury, then another way of keeping government debt permanently on its balance sheet would be for the Treasury to simply issue non-interest bearing perpetual bonds. These bonds do not incur any financial obligation on the part of the government; they have no maturity date, nor interest payments associated with them.

**Private Sector Balance Sheet Implications:** A money-financed helicopter drop would result in a direct increase in the net financial assets held by the private sector. The disposable income of the private sector would have increased, without the private sector increasing its burden of debt.

If the helicopter drop took the form of a tax cut, then individual households and firms would be faced with fewer outgoings and left with higher disposable income than previously, increasing their bank balances. The helicopter drop would replace the reduced tax revenues and ensure that this increased income was not be offset by reduced government spending. Alternatively, if the helicopter drop took the form of a direct payment to eligible households then they would have more money to pay their regular outgoings (i.e. monthly expenses), and again be left with higher disposable income.

Higher levels of spending would increase incomes and ultimately the profits of the sellers and, to the extent that the spending was on consumer durables, the physical assets of the purchasers. Since this extra income came without an increase in private sector borrowing the result would be a general increase in net worth.

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33 Keen (2012) proposes a citizen's dividend fund, where recipients would have to use the money received to pay down existing debt before being able to spend it.

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## Box 5: Central Banks and Permanent Money Creation

Adair Turner notes that there are three ways in which central banks can ‘permanently’ create money:

1. “The central bank directly credits the government’s current account (held either at the central bank itself or at a commercial bank) and records as an asset a non-interest bearing non-redeemable “due from government” receivable. [The Treasury would issue a bond of infinite maturity that would not involve any interest payments which the central bank would buy with newly created money – in effect giving it an interest free loan that would never have to be paid back].
2. The government issues interest-bearing debt which the central bank purchases and which is then converted to a non-interest-bearing non-redeemable ‘due from government’ asset.
3. The government issues interest-bearing debt, which the central bank purchases, holds and perpetually rolls over (buying new government debt whenever the government repays old debt), returning to the government as profit the interest income it receives from the government. In this case the central bank must also credibly commit in advance to this perpetual rollover.”

(Source: Turner, 2015).

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**Reversing and Offsetting Helicopter Drops:** ‘Helicopter Drops’ are intended to be permanent, and many proponents believe that it is important that people have confidence in their permanence for them to be effective (Turner, 2015).

In the event that inflation following a ‘Helicopter Drop’ were to threaten to exceed the target, then the BoE would respond by using its monetary policy tools (such as raising interest rates, selling off bonds acquired via QE, or introducing reserve ratios). Alternatively, the BoE could draw on the assets acquired under the programme. However, if these constituted non-interest bearing perpetual bonds, these would not be marketable, and the Treasury might be required to convert them back into marketable bonds.

**Central Bank Independence:** According to Bernanke (1999) and other economists endorsing money-financed ‘Helicopter Drops’, the policy would not compromise the BoE’s independence, although it would require the intra-governmental collaboration of fiscal and monetary authorities (i.e. the Treasury and the central bank respectively). The collaboration of these two branches of government would not mean that one is necessarily subservient to the other.

Indeed, Bernanke’s ‘helicopter drop’ would be well within the remit of the central bank: “In financing a tax cut, the Bank of Japan [BoE in the UK context] would be taking a voluntary action in pursuit of its legally mandated goal, the pursuit of price stability.” (Bernanke, 1999).

As Blyth, Lonergan and Wren-Lewis (2015) write, the BoE would still be able to determine independently the quantity of money being created, while parliament would determine where and to whom the money would be allocated:

“Consistent with operational independence of the Bank of England, the size of payments and their timing should be solely under its control, and subject to the inflation target. Parliament needs to equip the Bank with the infrastructure to administer payments, and determine in advance the recipients.”

## 3.4 People's QE

People's QE has brought newfound attention to the other *Public Money Creation* proposals. While there isn't a specific proposal outlining "People's QE", its premise is grounded in Richard Murphy and Colin Hines' "Green quantitative easing: Paying for the economy we need" proposal<sup>34</sup>. It stems from the concern that QE failed to generate enough investment in the real economy and from the idea that creation of central bank money could be used for much more productive purposes – specifically green ones.

**Intended Objective:** Based on Hines & Murphy's (2010) proposal, the objective of a People's QE type of programme would be to:

“...inject money into the UK economy that can kick start economic activity in this country, reinvigorating government, local government, the private sector and household economies...”

To this end central bank money would be used to finance investment spending and lending. Primarily, central bank money would be used to finance the purchase of bonds issued by public sector institutions to directly finance government spending on infrastructure projects, or new money would be created to finance the lending of a green or public investment bank (as in Strategic QE and Green QE).

Importantly, all of this infrastructure investment would come without the public sector increasing its net level of debt.

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### Box 6: Net Levels of Public Debt

In order to acquire money it does not have, and to maintain consistency with current accounting conventions, the Treasury has always issued debt (usually in the form of bonds) to finance government spending. In proposals for Public Money Creation, the Treasury would still issue new debt. However, while the BoE permanently keeps this debt on its balance sheet the net balance of government debt owed to the private sector would not increase.

This is because the BoE would buy the bonds (debt) issued by the Treasury (or another publicly owned entity). The Treasury and the BoE are both branches of the same government. The Treasury owns the BoE. So whatever amount of money the BoE is owed, is in fact indirectly owed to the Treasury. Therefore, if the BoE buys debt issued by the Treasury, the Treasury in effect owes money to itself, and therefore it does not have an external debt obligation to anyone else.

Put differently, because the Treasury and the BoE are both on the government's consolidated balance sheet the debts between them are offset – they will net out. So the amount of government debt permanently held by the BoE does not make up part of the government's net debt servicing obligations.

However, once the BoE stops holding this debt by selling it to the private sector, the government's net debt obligations would increase. Moreover, if the BoE allowed this debt to mature without renewing its holding of government debt then the private sector would be called upon to refinance this debt – also increasing the government's net debt obligations.

(Source: Murphy, 2015)

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**Proposed Use of Funds:** The money created by the BoE would be used to buy bonds issued by public authorities sector entities such as the NHS, Local Government Authorities, and the Green Investment Bank, to finance infrastructure investment such as sustainable energy projects, new housing, hospitals and schools.

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<sup>34</sup> Accordingly, our outline of People's QE is based on the proposal submitted by Hines and Murphy (2010), as well as, further information gathered from Richard Murphy's blog: <http://www.taxresearch.org.uk/>

**Transmission Mechanisms & Processes:** The Treasury would instruct the BoE as to how much money needed to be created. The Treasury would also select which different public sector authorities would receive funding from the BoE.

The selected public sector authorities would then issue new bonds, equivalent to the value of central money that the Treasury wished to create. To circumvent Article 123 of the EU's Lisbon treaty, these new public sector bonds would first be bought by commercial banks. Shortly after that, the commercial banks would sell them on to the BoE.

These bonds would be of a finite maturity. Because People's QE aims to finance government investment without increasing the net balance of public debt, these bonds would have to be continuously refinanced by the BoE (or rolled-over as we further explain below and in Box 5 above).

The money created can then be used to directly finance the investment spending of a public sector entity (e.g. local government authority for infrastructure projects). Alternatively, the money could be used to capitalize a publicly owned investment bank, which could lend money to the private sector for infrastructure projects.

In either case, the new investment spending would increase the amount of productive assets in the economy. Thus, like Strategic QE and Green QE, People's QE increases the productive capacity of the economy.

Moreover, the investment spending would also increase employment. According to Murphy and Hines (2010), the new employment does four things for the economy:

“First it reduces the obligation to pay benefits. Second, it means that the person in that new employment pays tax. Third, it means their employer pays tax on profits they make. And finally the person in employment can then save.”

**BoE Balance Sheet Implications:** The programme is designed so that the value of the money created by the central bank would permanently remain circulating in the banking system. By continuously rolling-over the debt of the public sector authority, the BoE would keep a certain portion of government debt on its balance sheet forever.

This means that the day before the public sector authorities need to repay their debt to the BoE, they would issue to commercial banks brand new bonds (which would later be sold to the BoE). The next day the public sector authority would use its newly acquired money to pay down its old loan to the BoE.

Theoretically, this process of issuing new loans to pay off old debts (with money provided by the BoE) would continue forever. In this sense, the BoE 'permanently' keeps a certain portion of government debt on its balance sheet.

**Private Sector Balance Sheet Implications:** If the public sector authority receiving funds directly spent the money on infrastructure projects, then this spending would increase the net financial assets of the private sector (see Appendix 2), by increasing private sector incomes without increasing private sector debt or public sector debt obligations towards the private sector.

However, if the money was created to finance the lending of a public investment bank then the effect on the private sector's balance sheet would be the same as with Green QE and Strategic QE. Households would experience a net increase in financial assets without taking on more debt, while corporates would acquire an asset and a corresponding liability. By investing in productive assets however, the corporates should be able to generate enough revenue over time to pay off their outstanding debt.

**Reversibility and Offsetting People's QE:** People's QE is intended to be permanent. The BoE would retain its remit of keeping inflation within bounds, and any inflationary consequences would be tackled through the Bank's normal monetary policy tools<sup>35</sup>. If this meant that the BoE's stock of tradable assets became

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35 Such as raising interest rates, selling off bonds acquired via QE, or introducing reserve ratios.

exhausted, this might involve drawing on the assets acquired under People's QE and this would therefore require consultation with the Treasury and the issuing authority to manage the consequential increase in indebtedness to the private sector.

**Central Bank Independence:** For the purposes of People's QE, the Treasury would direct the creation and allocation of new money by the BoE, which in this respect would not operate independently. However, the BoE would retain its independence over inflation targeting.

### 3.5 OMF & Sovereign Money Creation

Adair Turner's (2013) Overt-Monetary-Finance (OMF) and Positive Money's (2013) Sovereign Money Creation (SMC) are two very similar proposals that provide an alternative framework for conducting central bank monetary operations<sup>36</sup>. They both stem from the premise that under conditions such as prevail today, monetary policy is ineffective and can only operate to stimulate demand by promoting higher levels of private sector debt. This demonstrates the need for additional tools for implementing monetary policy.

**Intended Objective:** OMF and SMC propose that the BoE creates money and spends it directly into the economy, without increasing the net burden of either private or public sector debt. OMF and SMC are intended to provide an additional tool for monetary policy to enable the central bank to stimulate aggregate demand when it is below the desired threshold (to the extent that price stability is endangered).

**Proposed Use of Funds:** Both proposals offer the option of distributing the newly created money directly to citizens, or using newly created central bank money to finance public investment spending<sup>37</sup>.

**Transmission Mechanisms & Processes:** Prior to any decisions being made in terms of how much central bank money to create, the government would have to decide on what any OMF/SMC will be used for. The different options available will each have a different influence on aggregate demand. Informing the BoE as to how the government would want to use any money to be created through OMF or SMC would allow the BoE to calculate the likely impact such spending would have on aggregate demand. On that basis, the BoE would then be able to determine how much central bank money to create to have the desired effect on the real economy.

When economic indicators suggest that aggregate demand is below a certain threshold, the BoE would take the decision to stimulate the economy with a specific amount of money created via OMF/SMC. The Treasury would then issue that quantity of specially created 'perpetual zero-coupon bonds'. These bonds would be unconventional in that they would not bear interest and would have no maturity date.

The BoE would then directly buy these bonds from the Treasury, crediting the Treasury's account at the BoE with newly created central bank reserves. With new central bank money in its account the government would spend the money directly into the real economy.

This would allow the government to stimulate spending in the real economy and increase the net financial assets of the private sector, without encouraging a net increase in the amount of debt.

Depending on the priorities of the incumbent government, this money could be used to boost demand through a money-financed helicopter drop, increasing jobs and allowing the economy to reach its productive

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36 SMC should not be confused with the broader more systemic changes of a Sovereign Money system. The former merely refers to the process by which the central bank creates money for the real economy, while the latter encompasses reforms aimed at withdrawing the commercial banking sector's ability to create money.

37 To a lesser extent, OMF also advocates using central bank money to write off public debt and to recapitalize commercial banks. But the grounds for doing these are not to stimulate spending but to create a safer financial system and to consolidate government's fiscal positions – therefore we do not include them in this discussion.

potential. Alternatively, the money could be spent on the provision of new infrastructure, the renovation of existing infrastructure or the acquisition of other such productive assets. This would not only increase jobs but would increase the productive potential of the economy as well.

**BoE Balance Sheet Implications:** Under OMF/SMC the BoE would agree to hold a portion of government debt permanently. However, in issuing perpetual zero-coupon bonds, the Treasury would be creating liabilities that are unlike government debt: these bonds would not incur any financial obligation on the part of the government. They have no maturity date, nor interest payments associated with them. This removes the need for continuously refinancing public debt in order to keep a certain amount of government debt permanently on its balance sheet, which is a feature of other similar proposals.

**Private Sector Balance Sheet Implications:** OMF and SMC are designed to raise the level of spending in the economy and boost the disposable incomes of the private sector, without a corresponding increase in the balance of public or private debt. Whether through a tax cut, public spending, or a citizen's dividend, OMF and SMC will always increase the net financial assets of the private sector without the public sector augmenting its external debt obligations (see Appendix 2).

**Reversibility and Offsetting OMF or SMC:** OMF and SMC are intended to be permanent. In the event that inflation following an OMF or SMC programme were to threaten to exceed the target, then the BoE would respond using its normal monetary policy tools. If the BoE's holdings of marketable assets proved insufficient for the scale of sales required to combat inflation then the Treasury might be required to convert back into marketable bonds some of the non-interest bearing perpetual bonds issued under the programme. The government could also run a budget surplus (i.e. by increasing taxes), using the proceeds to repay the zero-coupon perpetual bonds. This would withdraw deposits from the wider economy, and also withdraw reserves from the banking system.

**Central Bank Independence:** OMF and SMC require a certain level of cooperation between the BoE and Treasury. They also propose particular institutional procedures to avoid elected politicians from having control over monetary policy tools, and to prevent unelected technocrats from gaining unwarranted influence over fiscal policy.

Therefore under OMF and SMC the decision over how much new money to create would be taken, as it is now with the setting of interest rates, by the MPC at the BoE in line with its democratically mandated target (currently inflation at 2%)<sup>38</sup>. As with previous monetary policy decisions (i.e. over interest rates, QE, etc.) a monthly vote would be taken as to whether OMF/SMC should be increased or held constant, based on the MPC's analysis of economic conditions.

The MPC could be made accountable to a Treasury Select Committee, a cross-party committee of Members of Parliament who scrutinise the actions of the BoE and Treasury. This would ensure that the MPC remains accountable to parliament.

Similarly, the process would be designed so the BoE could not then influence the decisions over the public spending of this newly created money. This is why the Treasury, and not the BoE would decide where OMF/SMC money would be allocated but have no control over when and how much money was created.

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## Box 7: Would Public Money Creation lead to hyperinflation?

The proactive creation of money by governments is often considered 'taboo', as it is assumed to be highly inflationary and could even lead to hyperinflation (Turner, 2013).

Mainstream economic theory often suggests that long-term price inflation is the consequence of the stock of money increasing faster than the supply of goods. With more money in their pockets, consumers will demand more goods and services. 'Price setters' (i.e. firms and sellers) will notice the

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<sup>38</sup> As previously mentioned, the democratically mandated target of the BoE is to maintain price stability, currently defined as 2% inflation.

increased level of demand relative to their available supply, and raise the price of their goods and services, resulting in inflation. In this situation, there is an increased amount of money “chasing” the same amount of goods and services being supplied.

According to this approach, increasing the amount of money in the economy faster than the supply of goods and services results in inflation.

Yet as prominent economist John Maynard Keynes noted, creating new money does not always trigger price inflation. If new money is created and spent on the production of new goods and services, then the supply of goods and services is increasing alongside demand. In this situation you have an increased amount of money chasing an increased amount of goods and services being supplied. Inflation will not occur if the rate of growth in supply is broadly consistent with rate of growth in the money stock.

This helps explain why many governments, as the case studies referenced in Appendix 1 demonstrate, have been able to successfully grow their economy through the careful and responsible use of money creation. Their economies were operating below full capacity, and the new money was created and allocated to the sectors that were performing below their potential. The new money created was able to tap into the sectors where resources and inputs lay idle, therefore increasing the supply of goods and services. As supply (the production of goods and services) and demand (the creation of new money) broadly increased in tandem, high levels of inflation were avoided.

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## 4. CONCLUDING REMARKS: SUMMING UP THE SIMILARITIES & DIFFERENCES

Conventional QE is supposed to increase spending indirectly through a number of complex theoretical channels. The money created under QE is intended to be temporary, and does not involve the BoE directly financing any expenditure.

By lowering the cost of borrowing and increasing the price of financial assets, QE attempts to influence private sector behaviour. That is, QE aims to create a set of favourable conditions that will encourage more private sector borrowing and spending. By increasing bank liquidity and lowering long-term borrowing costs, QE attempts to increase spending by increasing the level of debt in the economy; and by increasing the price of assets, assets owners should be incentivised to spend more on consumption.

A major criticism of conventional QE is not so much that it relies on increasing levels of private debt to boost incomes, but that it implicitly favours lending to the FIRE sectors of the economy and relies on households increasing their burden of debt. The debt households incur would most likely be spent on ‘non-productive’ pre-existing assets. Rather than creating a new flow of goods and services, this type of lending would merely increase the price of pre-existing assets and would lead to unsustainable levels of household debt.

In this regard, conventional QE is criticised because it may encourage further household indebtedness, a primary cause of the recent financial crisis. But QE is also heavily criticised because it increases the wealth of assets owners who are expected to consume more. Critics point out that assets owners actually have a very low marginal propensity to consume, and so any spending generated by increasing the prices of assets will be minimal.

Instead of leading to an increase in consumption, the money created via QE has generally remained in the financial sector and inflated the price of pre-existing assets. Indeed, higher asset prices increase inequality: by increasing the wealth of high-income earners (who tend to hold financial assets) versus low-income earners, and by making certain assets (i.e. housing) less affordable to low-income earners.

Accordingly, proposals for *Public Money Creation* emerged to promote an alternative use of the central bank’s ability to create money. Instead of using central bank money to indirectly stimulate the economy through a number of complex theoretical channels, *Public Money Creation* proposals advocate using newly created central bank money to stimulate the real economy directly.

Strategic QE and Green QE aim to stimulate spending by re-directing credit towards the productive sectors of the economy. They propose that the BoE creates new money that can be used to finance new lending for non-financial businesses in the real economy. Under Strategic QE and Green QE the BoE can be said to be ‘creating credit’ for the real economy.

The money created is intended to be temporary, and therefore Strategic QE and Green QE do not involve the BoE using its money creating powers to finance government spending. At the aggregate level, Strategic QE and Green QE do not result in a direct increase in the net financial assets held by the private sector. A closer look reveals that the incomes of households (and their net assets) would increase without having to take on any debt. Meanwhile, businesses in the private sector would take on more debt to spend on salaries and wages and invest in revenue generating assets. By investing in revenue generating assets, businesses would be able to pay off their outstanding debts over time.

A money-financed ‘Helicopter Drop’, People’s QE, OMF, and SMC all involve the permanent creation of central bank money. However, these proposals advocate different uses of central bank money and they involve different transmission mechanisms and policy processes.



A money-financed helicopter drop entails distributing newly created money directly to citizens, through a tax cut or citizen's dividend. This would directly increase the incomes of the private sector (without increasing levels of debt), boosting demand and bringing the economy closer to reaching its productive capacity.

In contrast, People's QE advocates using newly created money by the BoE to finance government spending on infrastructure, and to finance lending for investment in infrastructure. If the BoE's money creating powers are used to directly finance government spending on infrastructure projects, then this spending would increase private sector incomes without increasing the net level of debt in the economy. However, if central bank money was created to finance lending— as also is the case with Strategic QE and Green QE – households' incomes would increase but so would debt levels of the corporate sector.

While People's QE and money-financed helicopter drops have the option to increase private sector incomes without increasing private sector debt, they have different implications for the productive capacity of the economy. Money-financed helicopter drops are specifically designed to put idle productive resources in the economy to use, allowing the economy to eventually reach its productive capacity. Conversely, under People's QE (as well as Green QE and Strategic QE) money would be used to increase the amount of revenue generating 'productive' assets. This would effectively increase the productive capacity and the potential output of the economy.

A money-financed helicopter drop would have an immediate effect and significant impact on aggregate demand, including a considerable short-term increase in consumer spending. Moreover, increased consumption via a citizen's dividend would directly boost government revenues (i.e. via VAT taxation). However, increasing domestic consumption can lead to increased demand for imports and may have implications for the current account deficit and the UK's international balance of payments, and hence the exchange rate.

Using central bank money to finance infrastructure investment will involve creating new productive assets, but will most likely take much longer to influence aggregate demand. Economic conditions might improve before the investment was complete, but the project would still be desirable. If improving economic conditions elsewhere threaten to overheat the economy, then this could be managed conventionally by the BoE through the normal inflation targeting processes.

Under OMF and SMC policymakers would have the option of distributing newly created money to citizens, or they could use newly created central bank money to finance public spending. To make the money created by the BoE permanent, the government debt held by the BoE would be in the form of non-interest-bearing perpetual securities.

Strategic QE and Green QE are intended to be temporary and these programmes may be allowed to wind down naturally as the bonds held by the BoE under the programme came to maturity and were redeemed. Alternatively, the BoE could withdraw from the programme by selling the remaining bonds to the private sector.

Helicopter drops, People's QE, OMF and SMC programmes are intended to be permanent. The BoE would manage any consequent effects of inflation separately by using conventional policy tools and by engaging in conventional Open Market Operations (conducting asset sales and purchases with the financial markets). This would reverse the process of central bank money creation, and drain the banking system of central bank reserves. Only in the unlikely event that its normal stock of marketable bonds proved insufficient for this would the BoE need to consider selling the bonds acquired under these programmes; and this might involve the conversion by the Treasury of non-interest bearing perpetual bonds into marketable bonds.

OMF and SMC would not be reversible by selling bonds to the private sector since the BoE's holdings would not be marketable. Instead, if all the options for offsetting the programme were exhausted, the government could run a fiscal surplus over and above any repayment of the national debt (although this last option would be available for all proposals).

In terms of central bank independence, it is clear that all proposals involve significant co-operation between the BoE and the Treasury. Under the current QE programme, the Treasury authorises the BoE's proposals for

the quantity of money to be created, as well as the different asset classes that this money could be spent on. The MPC then determines the precise amount of money to be created, while the APF (staffed by directors working at the BoE) determines the specific allocation of this money.

Under Strategic QE, the MPC would still determine the quantity of money to be created. However, a new Monetary Allocation Committee would decide on the optimal allocation of newly created money. A Green QE programme would seek to establish a new 'Green' department at the EIB (accountable to EU parliament), which would determine the allocation of QE funds.

For OMF, SMC, and money-financed helicopter drops, the BoE would still operate independently – submitting its plans and approvals to the Treasury for authorisation. However, there would be a clear institutional separation so that the BoE and the MPC (accountable to the Treasury Select Committee) would determine the timing and quantity of money to be created. Meanwhile, the Treasury would determine where and to whom this money would be allocated.

People's QE is the proposal most associated with granting the BoE the least amount of independence. It envisions the Treasury directing the operations of the BoE, rather than approving them. Therefore, the Treasury would determine the allocation and quantity of newly created money.

	<u>Intended Objective</u>	<u>Use of Money</u>	<u>BoE Balance Sheet Implication</u>	<u>Private Sector Balance Sheet Implication</u>	<u>Reversibility &amp; Offsetting Policy Levers</u>	<u>BoE Independence: Quantity &amp; Allocation of New Money</u>
<b>QE</b>	Create new money to increase asset prices and lower interest rates, to increase lending & spending	Inject new money into financial markets	Temporary	Requires increase in corporate and household debt to boost private sector incomes	Sell bonds acquired through QE back to private sector	Treasury approves potential quantity and asset classes; MPC determines quantity, APF determines allocation
<b>Strategic QE</b>	Create new money to directly finance lending for productive purposes	Finance lending for strategically important enterprises & infrastructure projects	Temporary	Requires increase in corporate debt – but not households – to boost private sector incomes	Sell bonds acquired through Strategic QE back to private sector	MPC determines quantity, new MAC (accountable to parliament) determines allocation
<b>Green QE</b>	Create new money to directly finance lending for green initiatives	Finance lending for green enterprises & green infrastructure projects	Temporary	Requires increase in corporate debt – but not households – to boost private sector incomes	Sell bonds acquired through Green QE back to private sector	Treasury approves quantity, new Green Department at EIB (accountable to EU Parliament) determine allocation
<b>People's QE</b>	A) Create new money to directly finance lending; B) Create new money to finance government spending	Provide funding for investment in vital infrastructure	Permanent	A) Same as Strategic and Green QE; B) Boosts private sector incomes without increasing private sector debt	Sell bonds acquired through People's QE back to private sector	Treasury directs operations of the BoE and determines quantity and allocation of new money
<b>Helicopter Drop</b>	Create new money to fund household spending by increasing disposable incomes	Distribute money directly to citizens via a citizens' dividend or tax cut	Permanent	Boosts private sector incomes without increasing private sector debt	Sell bonds acquired through Helicopter Drop back to private	BoE submits operational plans for approval of Treasury, MPC determines quantity and Treasury allocation
<b>OMF or SMC</b>	Create new money to fund consumer spending or investment on infrastructure	Provide funding for investment in infrastructure or distribute money to citizens	Permanent	Boosts private sector incomes without increasing private sector debt	Increase bank reserve ratios; run a fiscal surplus; or sell bonds acquired through QE	MPC determines quantity; Treasury determines allocation of new money

# APPENDIX 1: THE HISTORICAL PRECEDENTS OF MONEY CREATION FOR THE PUBLIC

The use of a central bank's money creating powers to fund government spending into the real economy is not a new idea. As Jackson (2013) notes, a number of well-known economists advocated similar policies as a response to the Great Depression in the 1930s. These include Paul Douglas and Aaron Director (1931), Lauchlin Currie, Harry Dexter White and Paul Ellsworth (1932), John Maynard Keynes (1933), Jacob Viner (1933) and Henry Simons (1936). Later, the idea was further developed by Abba Lerner (1943) and Federal Reserve Chairman Mariner Eccles<sup>39</sup> (1942).

It was most notably endorsed by Milton Friedman (1948). In 2003 the idea was resurrected by Ben Bernanke, prior to his becoming chairman of the Federal Reserve, when he suggested that the Bank of Japan implement a form of monetary financing to thwart the economic stagnation that had been burdening Japan since the beginning of the 1990s (Bernanke, 1999; Bernanke, 2003).

Since 2008, in reaction to the post-crisis global recession, the idea has been endorsed by a number of notable economists, including: former Financial Services Authority chairman Adair Turner (2013); Citigroup's chief economist William Buiter, writing with Ebrahim Rahbari (2012); Jaromir Benes and Michael Kumhof (2012); Richard Werner (2012); Richard Wood (2012); Steve Keen, (2012); Martin Wolf (2013); Paul McCulley and Zoltan Pozsar (2013); Yanis Varoufakis (2014); Ricardo Caballero (2014); David Graeber (2014); John Muelbauer (2014); Mark Blyth, Eric Lonergan, Simon Wren-Lewis (2015), Paul Krugman (2015) and many others<sup>40</sup>.

Before the era of modern banking, (which began in the late 1600s), according to (Ryan-Collins, 2015), a number of nation states:

“Used simple accounting techniques, such as tally sticks, minted coins, or printed paper money to fund their activities and ensured their widespread adoption through taxation”

Ku (2015) shows that the ability of the Roman authorities to issue their own currency was critical to the expansion of their empire. Turner (2015) and Ku (2015) both make reference to how China had developed a paper currency dating back to the 4<sup>th</sup> century BC, where money was created and used in the public interest for centuries after.

Dyson and Jackson (2012) demonstrate that in the 18<sup>th</sup> century the government of the Pennsylvania Colony was successful in its efforts to create money to stimulate demand, and managed to do so without prompting a high level of inflation. Ryan-Collins (2015) highlights that until the latter years of the 1600s, the government-led monetary regimes in the US and UK showed few signs of instability; and that the governments of Germany, Japan, and the US issued significant amounts of money in the 1800-1900s.

Brown (2008) and Turner (2015) allude to how the US union government paid for a 'significant' portion of its civil war expenditure with 'Greenbacks' - paper currency issued by the government, which was non-inflationary. Blain (1994) and Brown (2008) show how the government of the island of Guernsey was able, from 1815 to 1958, to finance public works through monetary financing without creating high levels of inflation.

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39 For Lauchlin Currie, Harry Dexter White & Paul Ellsworth (1932) see bibliography Laidler, D. E., and Sandilands, R. J. (2002); and for Eccles (1942) see bibliography Garbade (2014).

40 For links to Werner (2012), Wood (2012), Varoufakis (2014), Caballero (2014), Graeber (2014), and Krugman (2015) see: <http://positivemoney.org/2015/03/prominent-economists-advocate-different-type-quantitative-easing/>.

Eichengreen (2015) shows that Finance Minister Korekiyo Takahashi was able to jump-start the Japanese economy in 1931 by allowing the central bank to create money to fund public works. Brown (2008) and Liu (2009) demonstrate how the government of Germany used its money creation powers to finance public investment, transforming a bankrupt Germany into the strongest European economy in just four years. Ryan-Collins et al. (2013) in their 'Strategic QE' proposal, show that the government's money creating powers for public works was critical to the economic development of Canada (from 1935-1971) and New Zealand (from 1935-1939).

# APPENDIX 2: PROPOSALS FROM A BALANCE SHEET PERSPECTIVE

## ***A Simple Guide to Balance Sheets and Accounting***

Understanding the balance sheet operations is critical to understanding: 1) how the proposal can influence the economy, and 2) differentiating it from other proposals. We start with an introduction to how balance sheets work.

In Box 1, we showed that assets are everything that an entity owns or is owed. By contrast, liabilities are everything an entity owes to its creditors. Equity can be described as the difference between assets and liabilities and this represents the ongoing investment in the entity by its owners or shareholders.

Balance sheets have one fundamental rule: the three distinct parts of the balance sheet must ultimately balance out. The assets of an entity must be equal to its liabilities plus equity; they represent how much its creditors have lent it plus how much its owners have invested in it.

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

Accordingly, balance sheets involve double entry bookkeeping. This is another way of saying that all changes happen in pairs. If the assets of an entity go down, its liabilities or equity must decrease as well. If the assets of an entity go up, liabilities or equity must go up as well. The concept implies that a change in the value of assets will result from or require a change in either equity or liabilities; a change in liabilities or equity will result in a change in assets. To illustrate this more clearly, we show the balance sheet divided down the middle, into an Assets side, on the left, and a Liabilities side, on the right. Equity is included on the Liabilities side (in practice, companies usually present their balance sheets in a single column, with Assets listed at the top, followed by Liabilities in the middle and Equity listed at the bottom).

In the examples given here, assets and liabilities that are not directly relevant to the transaction are left off the balance sheet. Equity is always assumed to balance the balance sheets. A plus sign is used to denote that the value of an asset or liability has increased. A minus sign is used to denote that the value of an asset or liability has decreased. For those who want to venture deeper, we show how this translates to the conventions of double-entry bookkeeping entries in the footnote<sup>41</sup>.

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41 When the recorded value of liabilities or of equity increases, it means that creditors have lent the entity more, or that its owners have invested more (or left their investment to grow) and thus creditors or shareholders are credited with the additional value. A plus (+) sign on the Liabilities side thus denotes that the liability or equity has been credited (increased in value), and a minus sign denotes that it has been debited (decreased in value). When assets increase in value, however, an explanation is owed as to where that increase came from and how the increase in the value of the asset is justified. Assets are therefore debited with an increase in value. On the Assets side of the balance sheet, therefore, a plus (+) sign denotes that the asset has been debited (increased in value), while a minus (-) sign denotes that the asset has been credited (decrease in value). Since every double-entry accounting entry is made up of a debit to one account and a credit to another account, only certain transactions are valid. Swapping an asset for another asset is shown as minus (credit) and plus (debit), both on the assets side of the balance sheet. Likewise converting one liability into a different type of liability is shown by a minus (debit) and plus (credit), both on the liabilities side of a balance sheet. Expanding the balance sheet, for example by issuing a loan (in the case of a commercial bank), is shown by a plus (debit) to the assets (the loan) and a plus (credit) to the liabilities (the borrower's deposit). Shrinking the balance sheet (for example in the case of a loan repayment) is shown by a minus (credit) to the assets and a minus (debit) to the liabilities. It should be noted that where the lender is not a bank, the loan is an asset swap with the assets side of the balance sheet debited with the value of the loan (+) and credited with the transfer of money from the lender's bank account.

## Conventional Quantitative Easing in Balance Sheets

- 1. Creating New Reserves:** QE begins with the BoE making a loan to the Asset Purchase Facility (APF, a subsidiary of the BoE), by issuing new reserves, which can be 'spent' by the APF. The BoE has gained an asset (in the form of the loan to the APF), whilst simultaneously incurring a liability (in the form of the reserves owed to the APF).
- 2. Using Reserves to Buy Bonds:** The APF uses its newly acquired reserves to purchase government bonds held by the private sector (represented in this example simply as "Pension Funds")<sup>42</sup>. It swaps its assets (reserves) for the bonds held by the Pension Fund (government bonds). The reserves are paid to the Pension Fund's bank (and become an asset of the bank). The bank then increases the Pension Fund's account (a liability of the bank) by the amount received.

The Pension Fund's holdings of government bonds is reduced, but it receives a corresponding increase in the form of commercial bank deposits. Thus, the composition of assets has changed for both the APF and the Pension Fund, however, there has been no change in their liabilities.

As the APF pays reserves to the account held by the Pension Fund's commercial bank at the BoE, the Pension Fund's commercial bank acquires more assets (in the form of BoE central bank reserves) and a corresponding increase in liabilities (in the form of the deposits held by the Pension Fund).

Consequently, QE creates new reserves and new deposits in equal amounts. Across this whole process, the balance sheets of the BoE, Asset Purchase Facility, and commercial banks have expanded by the amount of the asset purchase. The Pension Fund meanwhile has simply swapped a bond for deposits at a commercial bank. Interestingly, the Treasury's liabilities remain unchanged except for the fact that bonds that were held by the private sector are now held by the APF (and therefore by the BoE).

- 3. Government Bonds Mature:** Periodically a certain amount of government bonds will mature, and the principal of the loan will become due.

Consider a hypothetical example, where £20 billion of government bonds held by the APF mature. This results in £20 billion of central bank reserves being transferred from the Treasury's reserve account at the BoE to the APF's reserve account.

The balance sheet of the Treasury contracts, its liabilities decrease as it has paid down its £20 billion debt to the APF and its assets have decreased as it used £20 billion of central bank reserves to settle its debt. The size of the APF's balance sheet remains the same, but the composition of its assets have changed: the £20 billion of Gilts (government bonds) have been exchanged for £20 billion of reserves. Crucially, at this stage, the £20 billion of central bank reserves formerly held by the Treasury are no longer in circulation.

- 4. Maintaining QE at its Current Level:** If the Monetary Policy Committee has chosen to 'maintain QE at its current level' (as opposed to reversing it) then the APF must rollover the government securities that it holds<sup>43</sup>. Following the above hypothetical example, the £20 billion of reserves that the BoE now holds is used to purchase more government bonds from the financial markets. If the APF keeps buying bonds, then it is merely repeating the process highlighted in step 2 above. The £20 billion of reserves are transferred back to the accounts of the banks, and the banks in turn create £20 billion of new deposits for the Pension Funds. Since the Pension Funds would rather hold bonds than cash, they buy newly issued bonds from the Treasury and the £20 billion of reserves is transferred back to the Treasury's account at the BoE.
- 5. Winding down QE - APF Lets Government Bonds Mature:** If it were desirable to wind down QE, then the APF would simply stop repurchasing government bonds as and when they matured. Accordingly, as the

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42 According to EU regulations, the APF is not permitted to purchase new bonds directly from the government, instead it must purchase pre-existing government bonds held by the private sector (known as the secondary market).

43 When bonds mature, the principal of the loan (and all remaining interest) is due to be paid. A 'rollover' would involve the BoE reinvesting the funds from the matured government security into a new issue of exactly the same government security.

government bonds held by the APF matured, the Treasury would have to pay down its debt to the APF. The APF's assets would change, gaining central bank reserves as the government bonds matured. The liabilities of the BoE would change; its liabilities (in the form of central bank reserves) to the Treasury would decrease but its liabilities to the APF would increase.

The balance sheet of the Treasury contracts, its liabilities decrease as it has paid down its debt to the APF and its assets have decreased as it used central bank reserves to settle its debt.

- 6. Winding down QE – APF Pays Down Loan from BoE:** The APF would then pay back the BoE, reducing the balance of its central bank account (assets) and simultaneously reducing the amount outstanding on its loan (liabilities). The corresponding assets and liabilities on the BoE's balance sheet similarly reduce. The simultaneous cancellation of the asset and the liability results in the destruction of central bank money.

## Conventional Quantitative Easing in Balance Sheets

	Bank of England		APF		Pension Funds Commercial Bank		Pension Fund		HM Treasury	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>1. Create Reserves</b>	+ Loan to APF	Dr + Reserves of APF	Cr	+ Reserves at BoE	Dr + Loan from BoE	Cr	...	...	...	...
<b>2. Using Reserves To Buy Bonds</b>	...	- Reserves of APF + Reserves of Pension Fund's Commercial Bank	Dr	- Reserves at BoE + Govt Bonds	Cr	+ Reserves at BoE + Deposits of Pension Fund	Cr	- Govt Bonds + Deposits at Bank	Dr	- Bonds held by Pension Fund + Bonds held by APF
<b>3. Government Bonds Mature</b>	...	- Reserves of Treasury + Reserves of APF	Dr	- Govt Bonds + Reserves at BoE	Cr	...	...	...	- Reserves at BoE	Cr
<b>4. Maintaining QE Current Level</b>	...	- Reserves of APF + Reserves of PF's Bank	Dr	- Reserves at BoE + Govt Bonds	Cr	+ Reserves at BoE + Deposits of Pension Fund	Cr	- Govt Bonds + Deposits at Bank	...	- Bonds held by Pension Fund + Bonds held by APF
<b>5. Winding Down QE - APF Lets Government Bonds Mature</b>	...	- Reserves of PF's Bank + Reserves of APF	Dr	- Govt Bonds + Reserves at BoE	Cr	- Reserves at BoE + Deposits of Pension Fund	Dr	- Deposits at Bank	...	- Bonds held by APF
<b>6. Winding Down QE-APF Repays Loan From BoE</b>	- Loan to APF	- Reserves of APF	Dr	- Reserves at BoE	- Loan from BoE	...	...	...	...	...



## **Strategic QE in Balance Sheets**

There are different ways that Strategic QE could work. We go through only one option here, where money is created for a publicly owned intermediary, to show the reader how the BoE could create money to finance lending directly to an entity in the real economy.

- 1. Creating New Reserves:** Step 1 of the monetary operations under Strategic QE would be the same as that for conventional QE. The BoE would create new reserves and lend them to the APF. The loan from the BoE is a liability to the APF, and the newly acquired reserves are the APF's asset.
- 2. APF Lending to PIB:** The APF then buys bonds issued by the government-owned intermediary (for the purpose of this example we assume the intermediary is a Public Investment Bank (**PIB**) which conducts its banking operations through a commercial bank). In this operation, the APF is merely swapping one asset (BoE central bank reserves) for another (PIB bonds). The APF transfers reserves to the BoE account held by the PIB's commercial bank. The commercial bank has gained an asset (BoE reserves) and a liability (a deposit owed to the PIB). The PIB acquired a new asset (money in the form of commercial bank deposits) and a new liability (the loan from the APF in the form of a bond).
- 3. PIB Lends to Construction Company/SME:** The bank deposits created in Step 2 could then be used to purchase a bond issued by an eligible entity (e.g. a construction company). In effect, it would be swapping assets (swapping bank deposits for bonds issued by the construction company). A similar process would occur if it wanted to lend money directly to a SME. The PIB would be exchanging bank deposits for a secured or unsecured loan. The SME would gain a new asset (deposits) and liability (loan from PIB). Meanwhile, if we assume (for the sake of simplicity) that all entities use the same commercial bank, then that commercial bank would merely change its deposits liabilities to the PIB into deposit liabilities to the SME. The construction company/SME would then use the loan to hire staff and buy materials to produce housing or goods and services for sale to the public to raise the money needed to repay the loan.
- 4. Construction Company/SME Pays Down Loan:** Once the loan from the PIB matures, the construction company/SME would draw down its assets (deposits) to repay the PIB and no longer have a liability (in the form of a loan) to the PIB. The PIB's assets would change again. It would have acquired deposits and the loan to the construction company/SME would be cancelled out. The commercial bank would see a change in its liabilities: an increase in deposits of the PIB, and a corresponding reduction of deposits of the construction company/SME.
- 5. PIB Bonds Mature:** Once the bonds issued by the PIB mature, the PIB would have to pay back the APF, cancelling out its liability (loan from the APF) and asset (deposits at commercial bank). The commercial bank loses an asset (BoE reserves) and a liability (a deposit owed to the PIB). The APF assets change, swapping PIB bonds for central bank reserves. If it were desirable for the central bank money that was created for Strategic QE to remain in circulation, then steps 2 and 3 would have to be repeated.

If it were desirable to let Strategic QE wind down, then the APF would pay back the BoE, reducing the balance of its central bank account (assets) and simultaneously reducing the amount outstanding on its loan (liabilities). The simultaneous cancellation of the asset and the liability results in the destruction of central bank money.

## Strategic QE in Balance Sheets

	Bank of England		APF		Commercial Bank		Public Investment Bank (PIB)		Construction Company or SME	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>1. Create Reserves</b>	+ Loan to APF	+ Reserves of APF	+ Reserves at BoE	+ Loan from BoE	...	...	...	...	...	...
<b>2. APF Lending To PIB</b>	...	- Reserves of APF + Reserves of Commercial Bank	- Reserves at BoE + PIB Bonds	...	+ Reserves at BoE	+ Deposits of PIB	+ Deposits at Bank + Bonds/Loan to Construction Company/SME	+ Bonds Held By APF	...	...
<b>3. PIB Lends To Construction Company/SME</b>	...	...	...	...	...	- Deposits of PIB + Deposits of Construction Company/SME	- Deposits at Bank + Bonds/Loan to Construction Company/SME	...	+ Deposits at Bank	+ Bonds/Loan from PIB
<b>4. Construction Company/SME Pays Down Loan</b>	...	...	...	...	...	- Deposits of Construction Company/SME + Deposits of PIB	- Bonds/Loan to Construction Company/SME + Deposits at Bank	...	- Deposits at Bank	- Bonds/Loan from PIB
<b>5. PIB Bonds Mature</b>	...	- Reserves of Commercial Bank + Reserves of APF	- PIB Bonds + Reserves at BoE	...	- Reserves at BoE	+ Deposits of PIB	+ Deposits at Bank	+ Bonds Held By APF	...	...

## **Green QE in Balance Sheets**

There are also different ways that Green QE could be conducted. We outline a very simple demonstration of how it would work<sup>44</sup>, merely to show how the BoE would create money to on-lend to green industries in the real economy via the European Investment Bank (conducting its banking operations through a commercial bank).

- 1. Creating New Money for the EIB:** The BoE would create new reserves to purchase EIB bonds. The EIB would acquire an increase in assets (deposits at the commercial bank) and liabilities (a debt to the BoE in the form of bonds). The assets of the commercial bank of EIB would increase (in the form of central bank reserves) and so would its liabilities (the deposits owed to the EIB).
- 2. Lending Money to Green Enterprises:** Next the EIB would lend out its deposits to companies for projects that satisfy a set of 'green criteria'. Accordingly, the EIB would exchange assets (deposits at the commercial bank) for a new loan to a 'Green Company'. The Green Company's assets would increase (receiving deposits) whilst simultaneously incurring a liability (an obligation to pay back the EIB at a future date). If we assume the EIB and Green Company share the same commercial bank, then the commercial bank would merely alter the composition of its liabilities – reducing the deposits owed to the EIB and increasing the deposits owed to the Green Company. The Green Company would use the loan to hire staff and buy materials to produce goods, services, energy or infrastructure for sale to the public or under contract to governments to earn the money needed to repay the EIB loan.
- 3. Green Enterprise Pays Down Loan:** As the loan to the Green Company matured, it would have to pay back the EIB. The assets of the EIB would change again. It would have re-acquired deposits and the loan to the Green Company would be cancelled out. By repaying the Investment Bank, the Green Company would draw down its assets (deposits) and liabilities (cancelling its debt to the EIB). The commercial bank would see a change in its liabilities, an increase in deposits of the EIB and a corresponding reduction of deposits of the Green Company.
- 4. Winding Down Green QE:** The length of the Green QE programme would ultimately be determined by the date of maturity of the bonds issued by the EIB. Once such bonds mature the, EIB would need to repay the BoE. The BoE's assets and liabilities would decrease – as it would no longer hold the bonds of the EIB and it would no longer owe reserves to the EIB's commercial bank. In repaying the loan to the BoE, the EIB would draw down its assets (deposits) and its liabilities (loan from BoE). The assets held by the commercial bank (central bank reserves) would be drawn down and so would its liabilities (it would no longer owe deposits to the EIB).

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44 There would most likely be other actors involved, such as a subsidiary for the BoE (APF), the European Central Bank, and a foreign currency dealer.

## Green QE in Balance Sheets

	Bank of England		European Investment Bank		Commercial Bank		Green Company	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>1. Creating Reserves For The EIB</b>	+ EIB Bonds Dr	+ Reserves of EIB's Bank Cr	+ Deposits at Bank Dr	+ Bonds held by BoE Cr	+ Reserves at BoE Dr	+ Deposits of EIB Cr	...	...
<b>2. Lending Money to Green Enterprises</b>	...	- Reserves of EIB's Bank + Reserves of Green Company's Bank Cr	- Deposits at Bank + Bonds Green Company Dr	...	...	- Deposits of EIB + Deposits of Green Company Cr	+ Deposits at Bank Dr	+ Bonds held by EIB Cr
<b>3. Green Enterprise Pays Down Loan</b>	...	- Reserves of Green Company's Bank + Reserves of EIB's Bank Cr	- Bonds Green Company + Deposits at Bank Dr	...	...	- Deposits of Green Company + Deposits of EIB Cr	- Deposits at Bank Cr	- Bonds held by EIB Dr
<b>4. Winding Down Green QE</b>	- EIB Bonds Cr	- Reserves of EIB's Bank Dr	- Deposits at Bank Cr	- Bonds held by BoE Dr	- Reserves at BoE Cr	- Deposits of EIB Dr	...	...

## ***Helicopter Drop in Balance Sheets***

There are many ways in which a money-financed helicopter drop could be conducted, with different balance sheet implications. For this example, we highlight a balance sheet process where the government would issue non-interest bearing perpetual bonds. If conventional interest bearing government bonds were used to back the newly created money, then the BoE would have to continuously refinance these bonds (see steps 5, 6, and 7 of the next section to get a better idea as to how this would work).

- 1. Creating New Money:** The process of money creation begins with the Treasury issuing liabilities, in the form of perpetual zero coupon bonds, which are purchased by the BoE. The BoE credits the Treasury's account with new BoE reserves, increasing the Treasury's assets (and the BoE's liabilities). The bonds are added to the BoE's balance sheet, increasing its assets, which matches the increase in its liabilities from creating central bank reserves.
- 2. Tax Cut or Citizen's Dividend – Increasing Private Sector Net Worth:** Subsequently, the Treasury would draw down its assets (reserves) to pay for the proposed cash transfers to households or to finance its normal expenditure where tax cuts have reduced its tax revenues. The BoE debits the Treasury's reserve account and credits the reserve account of the commercial bank whose customer (Private Sector) is the recipient of the public spending. The Private Sector's bank would experience an increase in both assets (reserves) and liabilities (deposits owed to the private sector). The assets (deposits) held by the Private Sector would increase, without a corresponding increase in liabilities. Instead, the Private Sector's equity (net worth) would increase to balance the increase in assets. The expenditure by the Treasury without a corresponding reduction in liabilities, or a balancing increase in other assets, would reduce the equity of the government.

## Helicopter Drop in Balance Sheets

	Bank of England		Treasury		Commercial Bank		Private Sector	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>1. Creating New Money</b>	+ Government Bonds (Perpetual Non-Interest Baring)	Dr + Reserves of Treasury Cr	+ Reserves at BoE Dr	+ Bonds held by BoE (Perpetual Non-Interest Baring) Cr	...	...	...	...
<b>2. Tax Cut (Unfunded Deficit) Or Citizen's Dividend – Increasing Private Sector Net Worth</b>	...	- Reserves of Treasury + Reserves of Commercial bank Cr	- Reserves at BoE Cr	...	+ Reserves at BoE Dr	+ Deposits of Private Sector Cr	+ Deposits at bank	...

## People's QE in Balance Sheets

There are also different ways that People's QE could work. The BoE could create money to finance lending directly to an entity in the real economy - in which case the balance sheet operations would be similar to the example given for Strategic QE. In this example, we show how the balance sheet operations of a People's QE programme could work if the BoE would finance the spending of a public entity.

- 1. LGA Issues Bonds and Sells Them to Commercial Bank:** People's QE begins with a public entity (let's assume it's a Local Government Authority (LGA) for the purpose of this example) which issues bonds that it sells to a commercial bank in exchange for commercial bank deposits. This increases the assets and liabilities of both. The commercial bank acquires an asset, in the form of the LGA bond, and creates a corresponding liability, in the form of the deposit owed to the LGA. The LGA acquires an asset (commercial bank deposits) and liability (bonds held by the commercial bank).
- 2. The BoE Creates Money for a Special Purpose Vehicle:** The next step would involve the BoE creating reserves to lend to a Special Purpose Vehicle (SPV). The BoE has gained an asset (in the form of the loan to the SPV), whilst simultaneously incurring a liability (in the form of the reserves owed to the SPV). The SPV has gained an asset (the newly issued BoE reserves), and a liability (the loan from the BoE).
- 3. SPV Buys Bonds Issued by LGA:** Using its newly acquired central bank reserves, the SPV will then buy the bonds issued by the LGA that are held by the commercial bank. The SPV is thus exchanging assets with the commercial bank: BoE reserves are swapped for Local Government Authority bonds. Meanwhile, the liabilities of the LGA – the bonds – are now held by the SPV, rather than the commercial bank.
- 4. LGA Spends Money, Increasing Private Sector Net Worth:** The LGA would then spend the money into the real economy. It could for example, use the newly created money to hire a construction company for an infrastructure project; this would boost the income of the construction company (i.e. private sector business). The deposits that the LGA held at a commercial bank would be transferred to the bank account of the construction company. The construction company would use the money paid by the LGA to hire staff and buy materials to deliver infrastructure for the LGA. The end result would be that the financial assets of the construction company, its employees and suppliers would increase, without a corresponding increase in their liabilities, so this would be balanced by an increase in their equity (net worth). Meanwhile, the LGA would acquire a physical asset, the new infrastructure, to balance the money spent from that raised by the bond issue.
- 5. LGA Issues New Bonds:** Just before the debt of the LGA matures, the LGA issues 'New Bonds'. Both the 'Old bonds' and 'New bonds' would be on the liabilities side of the LGA's balance sheet. As in Step 1, a commercial bank would issue a new liability in the form of deposits for the LGA, and acquire a new asset – the New Bonds. Accordingly, the LGA's assets and liabilities would increase in tandem.
- 6. LGA Pays Down Debt to SPV:** With its new assets (commercial bank deposits) the LGA could pay down its liability to the SPV. The LGA would draw down its deposits at the commercial bank, while its debt in the form of the Old Bonds was cancelled. The assets of the SPV would change: it would no longer hold the Old Bonds issued by the Local Government Authority but its holdings of BoE reserves would have increased. In the meantime, the balance sheet of the commercial bank would have contracted, holding less in LGA deposits (liability) and less in BoE reserves (asset).
- 7. SPV Buys New LGA bonds:** Next, the SPV of the BoE would buy the New Bonds issued by the Local Government Authority, from the commercial bank (effectively repeating Step 3).

(Steps 5, 6, and 7 would be repeated continuously, in order for the BoE to permanently keep the value of the original LGA expenditure on its balance sheet.)

# People's QE in Balance Sheets

	Bank of England		SPV		LGA's Commercial Bank		LGA		Private Sector	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>1. LGA Issues Bonds</b>	...	...	...	...	+ Bonds of LGA	Dr + Deposits of LGA	+ Deposits at Bank	Cr	...	...
<b>2. The BoE Creates Reserves For SPV</b>	+ Loan to SPV	Dr + Reserves of SPV	+ Reserves at BoE	Dr + Loan from BoE	...	...	...	...	...	...
<b>3. SPV Buys Bonds Issued By LGA</b>	...	- Reserves of SPV + Reserves of LGAs Bank	- Reserves at BoE + Bonds of LGA	Cr Dr	- Bonds of LGA + Reserves at BoE	Cr Dr	...	- Bonds held by Bank + Bonds held by SPV	Dr Cr	...
<b>4. LGA Spends Money, Increasing Private Sector Net Worth (Incomes)</b>	...	...	...	...	...	- Deposits of LGA + Deposits of Private Sector	Cr Dr	- Deposits at Bank + (Accruing value of real assets delivered by QE)	Cr Dr	+ Deposits at Bank
<b>5. Rolling The Debt Over- LGA Issues New Bonds</b>	...	...	...	...	+ New Bonds of LGA	Dr + Deposits of LGA	Cr	+ New Deposits at Bank	Dr	+ New Bonds held by Bank
<b>6. Rolling The Debt Over- LGA Pays Down Debt to SPV</b>	...	- Reserves of LGA's Bank + Reserves of SPV	- Old LGA bonds + BoE reserves	Cr Dr	- Reserves at BoE	Cr	- Deposits of LGA	Dr	Cr	- Old bonds held by SPV
<b>7. Rolling The Debt Over- SPV Buys New LGA Bonds</b>	...	- Reserves of SPV + Reserves of LGAs Bank	- Reserves at BoE + New Bonds of LGA	Cr Dr	- New Bonds of LGA + Reserves at BoE	Cr Dr	...	...	...	- New Bonds held by Bank + New Bonds held by SPV



## **OMF or SMC in Balance Sheets**

- 1. Money Creation:** The process of money creation would begin with the Treasury issuing liabilities, in the form of perpetual zero coupon bonds, which are purchased by the BoE. The BoE credits the Treasury's account with new BoE reserves, increasing the Treasury's assets (and the BoE's liabilities). The bonds would be added to the BoE's balance sheet, increasing its assets, which would match the increase in its liabilities from creating central bank reserves. The balance sheets of both the BoE and the Treasury would increase by the amount of the bonds issued.
- 2. Treasury spends Money into Circulation, Increasing Private Sector Net Worth:** The BoE would debit the Treasury's reserve account and credit the reserve account of the commercial bank whose customer (Private Sector) is the recipient of the public spending. The commercial bank would simultaneously credit the Private Sector with new deposits. The commercial bank would have new BoE reserves (asset) and a new liability (new bank deposits), while the Private Sector would have acquired an increase in deposits (an asset) without a corresponding increase in liabilities, which means that the increased assets would be balanced by an increase in equity (net worth). Government expenditure would reduce the government's assets, and without a corresponding reduction in liabilities, or a balancing increase in other assets (such as where the money was spent on public infrastructure procurement, for example), the government's equity would be reduced accordingly.

## OMF & SMC in Balance Sheets

	Bank of England		Treasury		Commercial Bank		Private Sector	
	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
<b>1. Money Creation</b>	+ Government Bonds (Perpetual Non-Interest Baring)	Dr + Reserves of Treasury	Cr	+ Reserves at BoE	Dr + Bonds held by BoE (Perpetual Non-Interest Baring)	Cr	...	...
<b>2. Treasury Spends Money Into Circulation</b>	...	- Reserves of Treasury + Reserves of Private Sector's bank	Cr	- Reserves at BoE	Cr	+ Reserves at BoE	Dr + Deposits of Private Sector	+ Deposits at bank

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