

## **Future Finance – Discussion Paper**

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### **The meaning of the endogeneity of money for ‘conventional QE’ and the different kinds of ‘helicopter money’**

Including a short proposal for a new monetary policy

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**Abstract:**

A persistent oddity of economic discourse is the duality of views on monetary policy. While almost all economic textbooks adhere to the old monetarist view of an exogenous money supply, almost all monetary practitioners (inclusive of textbook economists when discussing the real monetary behaviour of central banks) describe the money supply of central banks (CBs) as endogenous, i.e. CBs determine the interest rate on the money market and accommodate the amount of demanded money. Also in the current debate, this duality leads to various misconceptions about new 'monetary finance' tools such as 'helicopter money'. This disorientation could become a serious problem because the traditional tools used by CBs to combat a recession (lowering interest rates and flooding banks with liquidity) have ceased to work and an alternative, efficient working monetary policy is immediately necessary. 'Monetary finance' can be developed as part of such a new monetary policy and help central banks to fulfil their mandate of preventing inflation and deflation and stimulating the economy – in a direct way – in times of recession.

This paper discusses the failings of the CBs' 'conventional QE' measures and the functioning of new monetary finance tools in the context of an endogenous money supply. Additionally, it presents a concrete monetary policy which can enable the CBs to push and to dampen economic growth by using two different kinds of bonds without the danger of provoking new asset price bubbles, thus giving CBs new scope for a more balanced interest rate policy. Sharp increases or decreases in interest rates are no longer necessary. Further, the paper demonstrates that concerns regarding central bank independence and uncontrollable inflation are baseless. This new monetary policy can also help the government to finance more important national and global duties (e.g. climate finance) without increasing public debt.

## Introduction:

The response of central banks to the financial crisis was initially a rapid lowering of interest rates and then massive purchases of existing assets. This was sufficient for avoiding a complete crash of the financial system but not enough to trigger adequate investments in the real economy and combat impending deflation. Eight years after the beginning of the crisis, interest rates are still close to zero and the ongoing central bank purchases of assets from the banks – which will here be termed ‘conventional QE’ – have failed to affect the real economy and have instead boosted the danger of new asset bubbles and related wealth inequality. It is only a question of time before the onset of the next recession, yet we now find ourselves in a situation where the central banks are running out of tools to affect the real economy given that their main policies for stimulating the economy are ineffective.<sup>1</sup> A last hope for a successful stimulation of the economy existed in the implementation of negative interest rates. But, in the end this would require the time-consuming abolishment of all cash (and of all liquid assets which could substitute for cash).<sup>2</sup> Moreover it is very questionable whether negative interest rates would work in the desired way.<sup>3</sup>

If interest rates are still close to zero and additional asset purchases by CBs from banks are only leading to additional excess reserves at the CBs along with the danger of new asset price bubbles, it can be concluded that the traditional monetary policies of the CBs are no longer working. Thus, it becomes clear that central banks need a new working tool that can (i) effectively and immediately increase demand (so as to combat recession), (ii) prevent deflation and (iii) ensure a low but sufficiently positive interest level. A ‘monetary finance’ tool which could satisfy these needs is currently subject to wide discussion,<sup>4</sup> in the form of ‘helicopter money’ for citizens and/or for additional public investments. Adair Turner has described the underlying premise of this new monetary tool as follows: “Monetary finance is defined as running a fiscal deficit which is not financed by the issue of interest-bearing debt, but by an increase in the monetary base – i.e. of the irredeemable fiat non-interest-bearing monetary liabilities of the government/central bank.”<sup>5</sup>

One problem is that many commentators still rely on the traditional textbook description of exogenous money creation in their analysis of both ‘conventional QE’ measures as well as the new ‘direct QE’ measures, despite the fact that almost all money practitioners know that the description has little to do with the reality of the money creation process. The intention of this article is: (1) To explain how ‘conventional QE’ and the new kinds of ‘helicopter money’ work in the real economic system where the money supply is endogenously determined. (2) To explain how ‘direct QE’ could solve the current ‘running-out-of-tools problem’ faced by the CBs. (3) And to present a new monetary policy tool allowing CBs to stimulate the economy in a sustainable way in combination with a simple exit strategy to be deployed if the economy experiences an overly long and inflationary boom.

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<sup>1</sup> Amongst others this issue was stressed recently by Larry Summers in Jackson Hole. <http://blogs.ft.com/larry-summers/2016/09/07/lessons-from-jackson-hole-part-ii/>

<sup>2</sup> Another problem - which is not discussed here - is the loss of data privacy protection, as all cashless payments are likely to be recorded over time.

<sup>3</sup> Skidelsky, Robert (2016). The false promise of negative interest rates; <https://www.project-syndicate.org/commentary/negative-interest-rates-false-promise-by-robert-skidelsky-2016-05>

<sup>4</sup> E.g. Adair Turner (2015, 2016), Martin Wolf (2016), Ben Bernanke (2016), QE4people (2015).

<sup>5</sup> Turner, Adair (2015). The Case for Monetary Finance – An Essentially Political Issue, IMF Jacques Polak Research Conference, p. 2. <https://www.imf.org/external/np/res/seminars/2015/arc/pdf/adair.pdf>

## 1. The explanation of our monetary system according to the traditional (exogenous) view

One consequence of all kinds of previous QE measures is a heavy increase in the central bank balance sheets, or more specifically the monetary base. Traditional economists claim that a heavy rise in the monetary base will lead to an equivalent rise in the broad money supply and therefore to inflation. But seven years after the beginning of QE-programmes and the resulting doubled and tripled central bank balance sheets, we are confronted with a persistent problem of deflation instead of the predicted inflation. The supply of broad money is not increasing at the same rate as the monetary base, as would have occurred if the conventional interpretation of the money multiplier was correct.

We therefore need to consider at which point the mainstream theory is failing.

The conventional view in prevailing monetary textbook theory posits that the money supply is created from the interaction of the money multiplier and the monetary base, with the level of latter, in turn, being set by the central bank.<sup>6</sup> Thus, the monetary base and the money supply are determined by the central bank. If the monetary base were to be increased, commercial banks could increase their loan volume and the money supply would consequently witness a multiplied increase according to the level of the money multiplier (determined by the reserve ratio and the cash ratio). In this conventional view, the commercial banking system can only extend new loans when it obtains new central bank money. When, however, banks do receive such new money – so the theory – they will use it in its entirety to extend new loans. Accordingly, the impulse for the extension of credit stems from the central bank's supplemental creation of money. Hence, the chain of causality begins with new central bank money and ends with the creation of new debt money.

The interest rate on the market for money (i.e. the cost of money) is not determined by the central bank, but rather results – for the given amount of money – from the dynamics of supply and demand. As such, the role of the central bank is seen as that of a quantity setter and price taker. Since from this perspective the supply of money is “externally” injected into the economy by the central bank, one speaks of an exogenous theory of money.

If one adheres to the models which form the basis of the exogenous perspective, all QE measures would necessarily result in a multiplied increase in the money supply that was commensurate with the value of the money multiplier. Such an increase would have inflationary potential as soon as the new money was utilized for multiple purchases of goods and services. Under these assumptions, the current QE measures – especially those of the ECB – would work perfectly in the desired way.

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<sup>6</sup> Boermans and Moore recently showed that this view is still supported in most international textbooks, see Boermans, Martijn A.; Moore, Basil J.; Locked-in and Sticky Textbooks: Mainstream Teaching and the Money Supply Process, MPRA Paper, No. 14845, 25. April, 2009

## 2. The endogenous view of money

The existing conditions in the real economy (in normal pre-crisis times), however, are not those assumed under the exogenous model. In the real world, the central banks fix the lending rate offered to banks and thus control the interest rate on the money market. In order to achieve the desired market rate, the central banks must consequently satisfy the banking system's demand for liquidity and provide commercial banks with new money at the lending rate they have set. If they were to behave otherwise, the result would be permanent interest rate fluctuations on the money market and correspondingly negative consequences for the economy. With the decision to control the market interest rate, the central banks have surrendered their ability to directly control the money supply.<sup>7</sup> This outcome results from their role as lender of last resort, according to which they must always be prepared to provide commercial banks with liquidity consistent with a given interest rate. In contrast to the exogenous perspective, the central banks in fact fix the price (setting the short-term interest rate on the money market) and stay attuned in respect of amount (providing the amount of central bank money that is demanded by the banking system). Since the money supply in this instance is a function of the 'internal' financial needs of the various economic institutions, one speaks of an 'endogenous' theory of money.

It is interesting to note that the majority of economists accept the relationships characterized by the endogenous theory when they discuss real monetary practice and policy; yet at the same time their theoretical studies and textbooks often act on the assumption of an exogenous money supply (cf. Goodhart 2002, pp. 252-254).

The former senior vice-president of the New York Federal Reserve Bank A. Holmes formulated the core idea of endogenous money as early as 1969:

*"...in the real world banks extend credit, creating deposits in the process, and look for the reserves later."*  
(Holmes, 1969, p. 73)

The former president of the Bank of England, Mervyn A. King, has also unequivocally stated:

*"In the United Kingdom, money is endogenous – the [central] Bank supplies base money on demand at its prevailing interest rate and broad money is created by the banking system."* (King, 1994, p. 264).

And again Goodhart stated:

*„Virtually every monetary economist believes that the CB [central bank] can control the monetary base ... Almost all those who have worked in a CB believe that this view is totally mistaken."* (Goodhart, 1994, p. 1424)

And even the Bank of England itself recently criticized the established textbook theory of money and gave a nod to the view of endogenous money as being the economic theory that realistically describes the monetary system.<sup>8</sup>

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<sup>7</sup> It is only through indirect means that the central bank can impact the supply of money, namely by sharply raising the interest rate in the hope that the demand for money (along with business investments) will decline.

<sup>8</sup> Cf.: Quarterly Bulletin, 2014 Q1, Vol. 54 No.1

The theory of endogenous money was mainly developed by Basil J. Moore and other Post-Keynesian economists. In the Post-Keynesian view of the economy, the endogenous perspective is a generally accepted part of academic theory.<sup>9</sup> In New-Keynesian thought as well, the notion has recently been recognized as one of the basic fundamentals of what is termed the “new monetary consensus”.<sup>10</sup>

As a result it can be asserted that the endogenous theory of money describes the real financial system in a much more appropriate way than the exogenous view. Thus, the best analytic results can be expected by using the endogenous theory.

### **3. Why is the endogenous versus exogenous issue so important for analysing QE?**

According to the exogenous view, ‘conventional QE’ would lead to more lending as well as to more investments, which triggers growth and inflation. But in the real world these predicted goals are not being achieved. Why this ‘conventional QE’ is not working and why it leads to excess reserves can be explained by the endogenous theory of money. Furthermore, the endogenous view can rebut a number of misconceptions about both the different kinds of monetary finance as well as the monetarist explanation of inflation.

#### **What can be expected of ‘conventional QE’ in an exogenous money world?**

‘Conventional QE’ (which means flooding the banks with new liquidity by buying assets from them) could work well if the money supply were exogenous because under this assumption credit creation is limited by the amount of money which is determined by the central bank. All additional (base) money created by the central bank would lead automatically to additional credit creation and a related increase of production of goods and services. Thus, all new liquidity in the balance sheets of the banks as a result of the central bank’s purchasing of existing assets would lead to a rise in GDP.

#### **Why has ‘conventional QE’ failed?**

However, in the current situation banks do not need the new central bank liquidity – which they gain from selling (long-term) assets to the central bank – to finance new credits to bank customers because there is no new demand for additional credits from the real economy side. So long as fiscal policy follows a more or less rigid course of austerity, the real demand for goods and services cannot increase in the way which is desired by the central banks. Rather, only an incentive from the demand side is capable of triggering additional demand for loans from the real economy to finance new investments. Without an additional credit demand from the real economy, banks have not been able to use their new liquidity and have therefore had to hold it in the form of excess reserves at the central bank. For banks the only way of using the new liquidity is to buy existing assets (mostly real estate or shares) in the hope that these prices will rise. Direct new investment and spending are not taking place.

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<sup>9</sup> E.g.: Kaldor 1982, Moore, 1988; Arestis, 1996; Dalziel, 1996; Howells, 2005; Arestis/Sawyer, 2006, pp. 847-860; Minsky, 2008, p. 271.

<sup>10</sup> Cf.: Meyer, 2001, pp. 1-15.

### **3.1. The explanation of excess reserves according to the exogenous and endogenous views**

To explain excess reserves, we first have to look at the money multiplier, which describes the relation of the monetary base and the broad money supply (M1, M2 and M3) with reference to the currency drain ratio and the reserve ratio. Before the crisis, excess reserves were very small in relation to the minimum reserve requirements, and therefore they were usually not mentioned in the money multiplier formula. The exogenous textbook theory explanation for this finding was that banks would use all available excess reserves for additional credit creation. Thus, excess reserves would vanish immediately after they arose, and what does not exist needs no explanation. Therefore, the appearance since the crisis of massive and enduring excess bank reserves being held at the central banks has led to confusion and astonishment amongst adherents of the traditional money multiplier theory.

The explanation for the previous absence of excess reserves under the endogenous view is simply that in a normal situation holding excess reserves at the central bank generates more costs than yields (i.e. the banks pay more interest for borrowing on the money market or at the CB than the interest they gain from the reserves held at the CB). And so long as banks could trust on always receiving enough reserves (from other banks on the money market or directly from the central bank) they did not need excess reserves as a buffer to satisfy a sudden increase in credit demand. In a normal economic situation banks will reduce their refinancing volume and associated interest burden at the central bank if they are confronted with excess reserves which they cannot use for lending purposes. Because holding excess reserves at the central bank was less profitable than reducing borrowing from the money market or the central bank, the excess reserves held by banks at the central bank were very small.

#### **The economic situation since the crisis**

Since the crisis, this situation has changed primarily in two ways: (1) Banks no longer trust each other enough to lend reserves on the money market, and so it became rational for many banks to establish a new buffer of excess reserves at the central bank. (2) With interest levels close to zero and a very small interest spread, the incentive to reduce excess reserves is very small.

Thus, since the crises (and the asset purchases from the CBs), we can identify a strong increase in the volume of excess reserves at the CBs, which leads many (monetarist) observers to fear that this implies a future risk of inflationary credit creation by the banks. But as shown above, this fear is not reasonable in an endogenous money system where credit creation is limited by the demand for credit.

In an economic down-turn, the number of sound borrowers decrease and consequently banks cannot find enough of them for all the new liquidity which they gain from the QE measures of the central banks. The importance of good borrowers has increased since the crisis because banks have now had to be more risk-averse. The lowering of the interest rates was thus not able to generate significantly more investment possibilities.

In the existing endogenous money system, 'conventional QE' had no chance of success because there was no credit demand which was not previously met by the banks given that there was no credit limitation through any kind of reserve shortage. And if all sound credit demand was already being satisfied by the banks, they could not increase the credit creation. Without new solvent borrowers, banks cannot increase loans in a sustainable manner even if they are flooded with new liquidity and the interest rate is very low.

In a situation where the demand for broad money and for credit) is endogenously determined, the only possibility for banks to gain a return on their new liquidity is by buying existing assets. The results are a lowered level of interest rates and a related increase in asset prices. Proponents of the current QE would argue that rising asset prices create an incentive to produce more (real) assets. But if investors know that asset prices are high because of an excess of liquidity and not due to a growing real economy, they will anticipate a high probability of a future decrease of the prices and be reluctant to invest in additional real assets. Additionally, if an increase in asset prices is mostly a result of extra liquidity, it carries a danger of new asset price bubbles. Also, a low interest level will not lead to more investments if the reason for the existing reluctance to invest has been the concern that no one will buy the additional goods which would presumably be produced with the new capital equipment.

### **3.2. A new interpretation of the money multiplier for the endogenous money world**

The new multiplier interpretation states that the conventional money multiplier still exists, but the causalities have changed. In the real economy, it is the demand for credit (which has included in our deregulated financial system the credit demand for ‘financial products’ to feed asset bubbles) which determines how much credit money will be created by the banks. Then, it is the created credit money that determines the refinancing needs of the banks at the central bank. Thus, in the end it is the credit demand of the whole economy which determines the scale of the monetary base. This is because if a central bank wants to determine the level of interest on the money market, it has to accommodate the existing demand for central bank money. A central bank could never simultaneously determine both the growth of the monetary base and the interest rate on the money market.

In an endogenous money world, the increase of the monetary base through asset purchases by the CB leads to an increase in excess reserves at the banks. If all demand for credit from the economy (at the level of interest determined by the central bank) is already being satisfied, banks cannot expand their credit creation. The increase of the monetary base does not automatically lead to a corresponding increase of the broad money supply. Where the interest rates are close to zero, banks will prefer to hold the new liquidity as excess reserves. If the rates and the interest spread rise again, this will cause a reduction of the excess reserves as the banks will lower their refinancing volume at the central bank, which will lead to a decline of the monetary base.

### **4. The meaning of endogenous money for the different kinds of monetary finance**

In the current post crisis situation, ‘conventional QE’ measures as well as negative interest rates have not been able to stimulate the economy as required. To reach this goal, new tools are needed. Only monetary finance approaches constituting “direct QE/helicopter money” (e.g. ‘citizen dividends’ and/or the direct financing of additional public investments) that can lead to more investments and a greater production of goods and services. This will trigger the income multiplier and a new demand for credit to finance the additional GDP.



To get away from the fanciful term ‘helicopter money’, Ben Bernanke recently proposed to use the more realistic definition of **‘Money-Financed Fiscal Programs’ (MFFPs)**.<sup>11</sup> Because this term stresses the interdependency of money and fiscal policies in the real world, it is clearly better suited to describe the actual idea of central bank financed programs. Hence, we will use the new ‘MFFP’ term for the rest of this paper to replace the term ‘helicopter money’. To identify how the different kinds of MFFPs work under ‘endogenous money’ conditions, we describe the two possible ways of using them.

#### 4.1. MFFPs in the form of a ‘citizen dividend’

The first kind of a MFFP could be called a ‘citizen dividend’. It means that the government would sell some ‘citizen dividend bonds’ to the CB and channel the newly obtained money (created by the CB) directly to citizens. The balance sheet of the CB would increase in the first round, but second-round effects like debt reductions or increased savings would lead to more (excess) reserves of the banks at the CB and reduce the refinancing needs of the banks at the CB. Thus, a part of the additional monetary base would vanish again. In terms of the theory of endogenous money: the money supply can only be extended in a way which is consistent with the economy’s demand for money.

- **Advantages of ‘citizen dividends’:** The device pushes demand for consumer goods and services instantaneously or, alternatively, allows the recipients to reduce their debts, which would help deleverage the financial system. If the new money drops are concentrated on the low-income sector, inequality could be diminished.

- **Disadvantages:** The portion of new money which is used for debt reduction or additional savings does not increase consumption, and it is unclear in what proportion the recipients of the new money would spend or save it.<sup>12</sup> Furthermore, the producers of the additionally demanded consumer goods may anticipate that this is a one-time demand push and not invest to increase their capacities. ‘Citizen dividends’ alone may not be capable of increasing the credit demand for capital investments. Another problem results from the fact that ‘citizen dividends’ trigger mainly consumer spending without the potential of supporting sustainable and long-term public investments for efforts such as a renewable energy transition. In order to convince the economy to invest in sustainable means of production, a long-term MFFP is required.

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<sup>11</sup> Bernanke, Ben (2016); What tools does the Fed have left? Part 3: Helicopter money, April 11, 2016  
<https://www.brookings.edu/blog/ben-bernanke/2016/04/11/what-tools-does-the-fed-have-left-part-3-helicopter-money/>

<sup>12</sup> Recent surveys by ING and ‘Astellon Capital Partners’ give different answers on this issue:  
ING: ‘Helicopter money: will cash from the sky boost Europe’s economy?’, 12 October 2016;  
<https://www.ing.com/Newsroom/All-news/Helicopter-money-will-cash-from-the-sky-boost-Europes-economy-.htm>  
Astellon Capital Partners: Helicopter money – let it rain? Q2, 2016  
[http://www.astelloncapital.com/documents/FG/astellon/news/519100\\_Astellon\\_Notes\\_-\\_Helicopter\\_Money.pdf](http://www.astelloncapital.com/documents/FG/astellon/news/519100_Astellon_Notes_-_Helicopter_Money.pdf)

#### 4.2. MFFPs for long-term, sustainable public investments

Similar to the ‘citizen dividend’ type of MFFPs, the government can sell (mostly) perpetual/interest free ‘sustainable investment bonds’ to the CB in order to finance additional public investments with the new money. The balance sheet of the CB would increase, but now there would not only be more consumption but also more (sustainable) investments. Income would rise without the possibility that a large portion of the new money would be saved. Through the new investments the potential for a further and sustainable growth would rise. Due to the endogenous behaviour of money, the GDP and the money supply would increase in line with each other.

- **Advantages:** The entire amount of the new money would be used directly for investments in the public infrastructure (no savings outflow). This manner of spending also leads to durable future benefits. The durability of the new income would trigger an additional adjustment in the investments made by producers of the goods. The money could be used for global duties like climate finance and SDGs.<sup>13</sup>

- **Disadvantages:** In several cases there would be a time lag between the decision to create money and the spending on new investments. Various investment projects have a long-term finance perspective and need - at least in part - perpetual bonds. But these kinds of bonds would limit the scope for the central banks’ future discretionary monetary policy (i.e. selling bonds in order to reduce the monetary base), because it is not possible to reduce the perpetual/no interest part of the government bonds without endangering the financial viability of the investment projects (see chapter 5).

Due to the mainly short-term consumption impact of the ‘citizen dividend’ proposal, the focus in the remainder of the paper will be on using MFFPs for the purpose of long-term finance. In so doing, the aim is to develop a new monetary policy tool which can reconcile the perpetual/no-interest part of the bonds with the needs of the CBs to be able to sell bonds back to the government if necessary.

### 5. Using the MFFP policy tool in an endogenous money world

#### The current problems of the CBs

As a reaction to the last financial crisis, the CBs were able to lower their interest rates because the level was relatively high beforehand. Thus, combating the economic downturn was possible. But now, in almost all countries the interest rate level is so low that no stimulus effect can be expected from a further reduction. The practised ‘conventional QE’ measures have shown that they would lead to many negative side effects - like increasing inequality - but not to a sustainable recovery of the economy.

The current problems which the CBs face in their attempt to influence the economy and fulfil their mandate can be summarized as follows:

(1) The CBs have no tool capable of directly and efficiently stimulating the economy. (2) Because the CBs cannot trigger the demand side of the economy, they also have no efficient tool to prevent deflationary

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<sup>13</sup> An international version of MFFPs could be the creation of additional SDRs by the IMF. See Stiglitz (2011), World Future Council (2011)

tendencies. (3) So long as the economy is weak, the CBs cannot raise their interest rates to a normal level because this would damage the fragile recovery.

### **How MFFPs could solve the problems**

MFFPs are a monetary finance tool which can be used to overcome these problems because of their ability to directly stimulate the demand side of the economy without relying on a detour through the banking system and without the need for a further reduction in interest rates. If the new money is spent for additional public investments, there will be an enduring improvement of the infrastructure and the income multiplier will be triggered. The exact scope of the income multiplier cannot be predicted beforehand, but considerable further increases in demand and income can be assumed. Thus the total increase would be larger than the initial increase in the monetary base (resulting from the MFFP-Bond purchases). If the stimulus is sufficient to trigger further investments, additional employment, higher capacity utilization, higher wages and more consumption spending, the danger of deflation should be banished. The CBs can again fulfil their mandate to establish a low inflation rate (e.g. two percent) and would gain scope to raise the key interest rate to a positive level. Using the MFFP tool gives the CBs the ability to raise their interest rates back to a normal level and at the same time stimulate the economy.

### **The concerns about using MFFPs**

Despite that, many economists are still reluctant to use this MFFP tool. The reasons are as follows: (1) Concerns about maintaining the independence of central banks. (2) The seeming impossibility of selling non-performing perpetual government MFFP-Bonds to the banking sector in order to reduce the monetary base. (3) The purchase of any kinds of MFFP-Bonds would boost the CB's balance sheet in the same way as 'conventional QE' and would lead to more excess reserves. (4) The conventional monetarist view (still adhered to by a large segment of the world's economists) holding that inflation is in the end always a monetary phenomenon, i.e. a money supply which is growing at too fast a rate and being fed by a growing monetary base must sooner or later result in uncontrollable inflation.

### **How can these concerns be rebutted?**

Points (1) to (3) can be rebutted by explaining the functioning of the new MFFP tool. Point (4) can be refuted by clarifying the functioning of inflation in an endogenous money world (see chapter 6).

### **The new MFFP tool**

Ben Bernanke defined the MFFP policy as: "...an expansionary fiscal policy – an increase in public spending or a tax cut – financed by a permanent increase in the money stock".<sup>14</sup> He proposed the creation of a special Treasury Account at the Fed, with the Fed being given the power to fill the account if deemed necessary for reaching its goals regarding employment and inflation. Congress and the presidential administration would then have to decide on how to spend the new money. The charm of this version of a MFFP tool is that the decision on how to spend the money is given to the legislature and not to the CB. But this kind of MFFP policy is incapable of financing long-term government investments (e.g. in global

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<sup>14</sup> Bernanke, Ben (2016); What tools does the Fed have left? Part 3: Helicopter money, April 11, 2016  
<https://www.brookings.edu/blog/ben-bernanke/2016/04/11/what-tools-does-the-fed-have-left-part-3-helicopter-money/>

renewable energy infrastructure) on a sustained basis because the new 'Treasury Account' is to be filled only at times when the CB comes to the conclusion that it is absolutely necessary.

For the purpose of sustainable and long-term financing, it needs a tool which guarantees the government (or the legislature) a steady flow of new money created by the CB which does not need to be reimbursed. At the same time, the tool needs a more flexible component capable of stimulating and reducing demand according to the wishes of the CB.

To achieve both aspects of the new monetary policy tool we need two kinds of MFFPs using different types of bonds:<sup>15</sup>

**1. 'Zero coupon perpetual bonds' (ZCPBs)** are appropriate for financing the long-term investment of national and international infrastructure projects. These bonds never need to be reimbursed by the government. Thus, they can also finance global projects - like SDGs and climate finance - having little or no commercial profitability. The amount of these types of bonds is primarily limited by the usual long-term growth estimate of the money supply and should be specified beforehand in an agreement between the CB and the government.<sup>16</sup> For global projects like SDGs and climate finance, it should also be possible for the CBs to buy ZCPBs from international financial institutions (e.g. the Global Environment Facility, the Green Climate Fund or other MDBs). In the case of the ECB, this procedure has the benefit that the ECB is not forbidden from buying bonds directly from international financial institutions.

**2. 'Economic circle balancing bonds' (ECBBs)** aim to enable the government to increase spending in times of recession or overly weak economic growth without raising the debt burden. The main portion of the associated spending should relate to the improvement of infrastructure. These bonds are in principle also perpetual, but here the CB has the right to demand the government's repurchase of a previously defined amount of the ECBBs in a previously defined economic boom situation. The purchase and repurchase obligations connected with ECBBs need to be based on a clearly defined and transparent framework of rules so that both the government and the central bank are able to introduce relevant measures in a timely manner. Economic indicators such as the progression of the inflation rate, the capacity of utilization and wage increases should be taken into account when defining the rules framework. The repurchase of the ECBBs should be financed by additional tax revenue because this can in one stroke satisfy the CB's need to decrease the monetary base and dampen real economic demand. In such a boom situation, a demand-dampening tax increase that serves to finance the repurchase of the bonds would not be a problem for the government and would ensure that CBs are in a position to fulfil their mandate. It can also be assumed that in a boom situation the government will be able to stay focused on financing long-term infrastructure investments.

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<sup>15</sup> A similar proposal is presented in the WFC Study 'The monetary system in crises'. See World Future Council (2015).

<sup>16</sup> In a recent study, the World Future Council has estimated that this type of bond could potentially reach a global figure of roughly \$700bn a year. See World Future Council (2015a).

**With the definition of the bonds used for implementing the MFFP, we can now rebut concerns (1), (2), and (3) as stated above.**

### **(1) Central banks independence**

If CBs used both kinds of bonds described above, they would not lose their ability to execute their mandate since they would retain their main tool of affecting the banks behaviour, namely setting and controlling the short-term interest rates. In fact, this power would be restored to them because the successful stimulation of the economy would create more space for CBs to establish (i) a positive interest level and (ii) a large enough interest spread such that they could control the rates on the money market. The total amount of possible ZCPBs and ECBBs purchases would be determined beforehand and could not be altered by the government. Through the additional room to manoeuvre given by the new monetary tool, the CB would secure more independence, not less.

### **(2) Repurchasing bonds in a boom period**

The ZCPBs cannot and should not be repurchased by the government because they are designed to finance long- term and sustainable infrastructure measures. Moreover, through the fact that the money stock usually increases over time, the ZCPBs can become a durable part of the CBs balance sheet without any negative side effects.<sup>17</sup> Therefore, there is no need for a repurchase of the ZCPBs. In instances where an economy has successfully exited a period of recession – by additional government spending financed by ECBBs – and has shifted into an excessively strong boom situation, the CB would now have the opportunity to dampen the economy by asking the government for a tax financed repurchase of a part of the ECBBs. Using the ECBBs in that way the CB gains a new tool to slow down the economy without the need of a sharp increase in the interest rates.

### **(3) Preventing undesired excess reserves**

Using the MFFP tool would lead to an increase of the balance sheet of the CB, and the first-round expenditures of the new money would result in additional bank reserves at the CB. At first glance the excess reserve problem would not be solved but exacerbated. But if the new MFFP tool is applied, there would be no need for further ‘conventional QE’ asset purchases. Thus, it could be assumed that applying the new MFFP tool would replace a more or less similar amount of excess reserves created by the ‘conventional QE’ tool. In a second round, the income multiplier would trigger further growth and a related credit demand which could be satisfied by the banks and would increase their demand for reserves. Accordingly, excess reserves would automatically become part of the minimum reserves requirements and subsequently vanish.<sup>18</sup> If the CB wanted to reduce excess reserves further in order to force the banks to acquire lending reserves from the CB and thus ensure its ability to establish the desired interest rate on the money market, they could increase the minimum reserve requirements to any necessary level.

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<sup>17</sup> This proposal is not new. Renowned authors such as James Tobin and Richard Musgrave have already advanced this idea; cf. Musgrave, Richard Abel: *Theory of Public Finance*; quoted from the German edition. *Theorie der öffentlichen Schuld*, in: *Handbuch der Finanzwissenschaft, Dritter Band*, Tübingen, 1958. p. 136; and cf. Tobin, James: *An essay on principles of debt management, Fiscal and debt management policies*; quoted from the German edition: *Grundsätze der Geld- und Staatsschuldenpolitik*, Baden-Baden, 1978, p. 121.

<sup>18</sup> See Kroll (2008), pp. 93.

## 6. Inflation in the endogenous money world

Despite the fact that the massive growth of the monetary base of many central banks has led us to the brink of deflation rather than the predicted inflation, many observers have nevertheless blamed the practice of monetary finance for provoking inflation. This is obviously due to the old monetarist mantra that inflation is always and everywhere a monetary phenomenon. But in the existing endogenous money world, inflation, i.e. increasing prices, is the cause of an increased money supply (this being needed to meet the additional demand for money resulting from increased prices) rather than expanding money supply being the cause of inflation as claimed under the monetarist view. Increasing prices, for their part, are attributable to many sources, including wages rising at an overly accelerated rate, insufficient competition, devaluation of the domestic currency (increasing import prices), other increasing costs and a full utilization of capacities.

In the existing endogenous system, a growing money supply from the banks is the end result of many economic processes. Conversely, in the monetarist view the growing money supply is the source and the beginning of all economic processes.

If there is an inflationary impact, it would result not from the increasing money supply but from excessively fast increases in demand and wages. However, in a world with unused capacity in productive capital and manpower, the impact on the inflation rate from a slightly increasing level of demand will be very small.

### **Why does new demand not lead automatically to increased inflation?**

New money for public expenditure is created only when it is financing new goods and services. Consequently, monetary supply and real production grow simultaneously. In addition to this, in a capitalist production system businesses regularly maintain free capacity in order to absorb demand fluctuations. If economic growth increases in tandem with the degree of capacity utilization, the market will react with expansion investments and not price increases. Empirically, even in an economic boom, average industrial capacity utilization does not rise above 85%.<sup>19</sup>

Interestingly, the empirical findings can also be explained by one of the core assumptions of F.A. Hayek's economic theory: The idea of spontaneous order as the leading impulse for the economy. An economy can spontaneously react to a change in demand only if there is free capacity available. No company could change its offer of goods or services – in way that fulfils the ideas of a spontaneous order – if all capacity in the economy was fully employed. This conclusion of Hayek was stressed by the German economist C.C. von Weizsäcker in his attempt at achieving a synthesis of Keynes and Hayek.<sup>20</sup> Weizsäcker refers to an article from Hayek in which he indicates an implicitness in our seeing the availability of all goods as being

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<sup>19</sup> ECB; Monthly Bulletin, Capacity Utilization in manufacturing; Fed; Federal Reserve Statistical Release, G.17, Industrial Production and Capacity Utilization.

<sup>20</sup> Weizsäcker; Carl, Christian (2005); Hayek und Keynes: Eine Synthese, in: ORDO, Freiburger Diskussionspapiere zur Ordnungsökonomik, 05/4

natural.<sup>21</sup> In an economy which works under the conditions of spontaneous order, the rational response of companies to changes in demand is to use free capacity so to maximize sales volume and profits.<sup>22</sup>

### **GDP and money are growing at the same rate**

Additional money spent on additional goods and services will lead to an increase in consumer and industrial production, which in turn will require additional financing and the related creation of credit by banks. Thus, in the end the actual money creation increases in proportion to the rise in GDP. Money and GDP increase at the same time and at the same rate.

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<sup>21</sup> See Hayek, Friedrich August von (1969); Rechtsordnung und Handelsordnung, in: Hayek; Freiburger Studien, Gesammelte Aufsätze, Tübingen, p.161- 198, here pp. 162 f.

<sup>22</sup> See Kroll, Matthias (2013); Über Hayek und Keynes, spontane Ordnung und die Möglichkeit erfolgreicher Nachfragesteuerung, Centre for Economic and Sociological Studies (CESS/ZÖSS), Discussion Paper, No.37, University of Hamburg

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