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# **The efficacy of monetary policy in an age of financialisation and climate change.**

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## **Abstract**

Monetary policy is inevitably operated by a central bank in the context of a specific banking and financial system, and responding to the economic issues of the time. Financialisation in the present era, broadly the past four decades, has not only involved the continuing growth of the financial sector but also a more market orientated banking system, development of securitization, and growth of shadow banking. The past decade has also seen the adoption of quantitative easing (QE) and other forms of ‘unconventional’ monetary policy. The paper explores the implications of aspects of financialisation for the transmission mechanisms of monetary policy and the objectives of monetary policy. It also considers the future of inflation targeting in light of experience, and financial stability as a key objective of monetary policy. The challenges of climate change and the possible implications for monetary policy are also considered.

**Keywords: financialisation, monetary policy, financial stability, shadow banking, central bank, quantitative easing, climate change**

**Journal of Economic Literature classification codes: E44, E58, O15, Q58**

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## **Introduction**

The analysis of monetary policy and its operations has to be located in the specificities of the banking and financial system to which the analysis applies. “The ability of a central bank to achieve its objectives depends upon how its operations affect the various elements that make up the money market. Hence, the efficacy of any particular technique of monetary policy depends upon the financial institutions and usages that exist. ... However, if a period of rapid change in the structure or in the mode of functioning of financial markets occurs, then the efficacy of central bank actions has to be re-examined.” (Minsky, 1957, p. 171). Friedman (1967) noted how the ways money and monetary policy are viewed shifts over time. “It is hard to realize how radical has been the change in professional opinion on the role of money” (Friedman, 1967, p. 3). Second, such views have to reflect what monetary policy could potentially achieve and indeed what it could not achieve. Friedman (1967) wrote that “Unaccustomed as I am to denigrating the importance of money, I therefore shall, as my first task, stress what monetary policy cannot do” (Friedman, 1967, p.5) which is in effect that money and monetary policy does not affect economic activity other than in the short-run. But it was perceived to influence inflation, thereby shifting the focus of monetary policy to inflation. Third, and following on from the second point, to ascertain what the objectives of macroeconomic policy should be, and within those objectives what roles can monetary policy play and how can monetary policy be co-ordinated with other policies.

In section 2, the evolution of monetary policy over the past few decades is outlined, and specifically the ways in which inflation came to be seen as the sole concern of monetary policy (both in the sense that monetary policy had low inflation as the sole objective, and that only monetary policy focused on inflation).

Section 3 starts from the view that there have been many changes in the scale and nature of the financial system in the (second) era of financialisation, which is dated from circa 1980. These changes have implications for the nature of monetary policy, ranging from the transmission mechanism of monetary policy through to the effects on economic variables such as inflation and asset prices.

Section 4 considers the significance of the shifts in monetary policy in the decade since the global financial crises of 2007/09. Quantitative easing and what were termed ‘unconventional monetary policies’ were brought in by central banks alongside historically low rates of interest. Inflation targeting was in effect quietly dropped and QE policies were advocated seeking to stimulate the economy.

The last sections consider the relationships between monetary policy and the challenges of the climate emergency and environmental degradation. It is argued that central banks should be obliged to act in ways which are supportive of government policies towards climate change.

## **Monetary policy in recent decades**

Monetary policy has often been closely identified with the setting of key policy interest rate by the central bank. There have always been other dimensions to monetary policy and the actions of the central bank. The UK Committee on the working of the monetary system (1959), commonly known by the name of its chairman Lord Radcliffe, in its report of 1959, stated that “great as have been the changes in economic circumstances during the past three decades [i.e. since the financial crises of 1929], changes in opinions have been even more profound.” (p.17). The report considered that the objectives of government economic policy had become more complex, “but the degree of priority which is to be attached to any one in relation to the others varies from time to time with changes in economic circumstances: it is no longer appropriate to charge the monetary authorities with unambiguous tasks that can be sharply differentiated from other governmental action.” The report quoted the then Chancellor of the Exchequer when setting up the committee: “there is general agreement of the objectives of monetary policy. This country stands determined to maintain a fixed and stable exchange rate. The primary requisite for this is that we shall be able and determined to avoid inflation at home. Equally it is also agreed policy to avoid slumps and severe unemployment ... These objectives are not open to question” (pp. 17-18). However, the Committee continued: “the consistency of these objectives, and consequently the possibility of an unequivocal guide to action, are no longer regarded as self-evident.” After some discussion, they came to the view that “the objectives in pursuit of which monetary measures may be used:

- (1) A high and stable level of employment.
- (2) Reasonable stability of the internal purchasing power of money.
- (3) Steady economic growth and improvement of the standard of living.
- (4) Some contribution, implying a margin in the balance of payments to the economic development of the outside world.
- (5) A strengthening of London’s international reserves, implying further margin in the balance of payments”.

Although interest rate setting continued as the key policy instrument, in the 1980s and the era of monetarism, for a time the focus shifted to the growth of a measure of the stock of money. The targeting of the stock of money was related with fiscal policy and budget deficit, (as exemplified by the Medium Term Economic Strategy in the UK) even though the stock of money consists largely of commercial bank deposits, and the budget deficit would only very partially be funded by increase in central bank reserves held by commercial banks. The targeting of the money stock was intended to aid the control of inflation through a combination of effects on inflationary expectations and the level of demand. The targeting of broad money such as M3 proved unsuccessful though some form of M3 target remains for the ECB. In the UK there was a shift to setting a target in terms of base money, then adoption of an inflation target with the key interest rate continuing to be set by the Chancellor of the Exchequer (1992 to 1997), following the switch to inflation targeting (IT). IT is defined in terms of the pursuit of an

inflation target (sometimes described as price stability) by the use of a policy interest rate set by the independent central bank, where independent is taken to mean without direct instructions for government. Inflation targeting is based on two basic notions. First, interest rate variations along with commitment to an inflation target was viewed as the appropriate and effective way of controlling inflation -in effect an alignment of one instrument (interest rate) with one objective (inflation). Expectations on inflation are argued to be aligned with the inflation target provided that the inflation targeting policy is viewed as credible by the public. Second, there is a strong linkage from the policy interest rate to interest rates on borrowing and lending to level of demand to price inflation. Each of those steps may be questioned on the linkages of the policy interest rate to rates on loans and deposits, and how far interest rates influence demand, and then the nature of the links of demand to inflation. The influences of interest rate on exchange rate and of the global rate of inflation are downplayed.

The experiences of the global financial crisis and the subsequent monetary policies have two lessons on which I focus here. The first is the importance of financial stability and the avoidance of financial crises. The GFC imposed high costs on the rest of the economy, including the loss of output and employment, slower growth from lower investment and the fiscal costs of the ‘bail-outs’ and rescue of financial institutions. It illustrated that the achievement of price stability (low inflation) (even if that could not be solely attributable to IT) was not sufficient to avoid asset price bubbles and financial instability.

The second relates to the ways in which macroeconomic policies responded. There was a revival of interest in fiscal policy, some of it linked with the zero-lower bound on interest rates<sup>1</sup>. In many industrialised countries after the GFC policy nominal interest rates fell below 1 per cent, and in a number of cases including the European Central Bank (ECB), and Bank of Japan, the policy rate went negative and in real terms (allowing for inflation) interest rates were negative through most of the last decade. Associated with the historically low interest rates came the adoption of quantitative easing (QE) and similar measures often put under the heading of ‘unconventional’. The rationale for QE was essentially that a more liquid banking system would be conducive for more lending and more spending, thereby stimulating economic activity. A feature of QE which sets it apart from open market operations is that under QE, a target is set for the purchase by the central bank of financial assets from the public, often initially focused on government bonds, then extended to some other financial assets. It was often feared that QE would involve an increase in the monetary base, and thereby foster inflation. In the outturn the higher inflation clearly did not result. A reason for this comes from consideration of the balance sheets of the banks and of the public following QE. For the banks, their assets in the form of reserves held with the central bank rise, as do their liabilities in the form of bank deposits held by the public. For the public there has been an exchange of one set of financial assets (e.g. government bonds)

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<sup>1</sup> For my discussion on these points see Sawyer (2016).

for another set of financial assets (in the form of bank deposits). There are changes in the degree of liquidity. The ‘monetarist’ argument for expansion of the stock of money (and thereby inflation) relied on the bank deposits taking the form of cheque account deposits, and hence being regarded as rise in stock of money. There were also suggestions of the operation of the money multiplier whereby there would be increases in the stock of money coming from the banks lending out more as their reserves rose. In the event this did not happen. The effects of QE have been more to support asset prices and to help maintain low interest rates (e.g. on bank deposits) (for further discussion see below).

Inflation targeting neglected asset price inflation, financial stability and employment/economic activity. This rationale for this was (a) asset price inflation aligned with price inflation, (b) financial system was treated as essentially stable, (c) in the ‘new consensus on macroeconomics’ (NCM) approach, a constant rate of inflation would be compatible with the ‘natural rate of output’/NAIRU.

Inflation targeting (or similar) still largely remain the declared monetary policy (and the means by which inflation is controlled). “It is with regret that we announce the death of Inflation Targeting. The monetary regime, known affectionately as “IT” to its friends, evidently passed away in September 2008. That the demise of IT has not been officially announced until now testifies to the esteem in which it was widely held, its usefulness as a figurehead for central banks, and fears that there might be no good candidates to assume its position as preferred anchor for monetary policy” (Frankel, 2012). Prior to the GFC, inflation targeting had often been declared a great success (‘the great moderation’ in the words of Bernanke 2004). Inflation had indeed tended to be lower in the 1990s and 2000s as compared with the 1970s and 1980s, and inflation targeting had largely come on stream in the 1990s (though the Bundesbank in Germany had been operating on an inflation target since 1975).

The NCM framework virtually eliminated fiscal policy. In the simple model representation of NCM there was no mention made of fiscal policy, and more generally a belief in Ricardian equivalence and stability of the economy precluded any need for fiscal policy (other than perhaps acting as an automatic stabiliser). The experiences after the GFC revived interest in fiscal policy and initially allowed the automatic stabilisers to come into effect along with some discretionary fiscal policy. Policies quickly switched back to ‘bring down the deficit’ (Sawyer, 2016). There has been limited success in reducing deficits and particularly reducing public debt (as ratio of GDP). What is readily apparent is that notions of ‘expansionary fiscal consolidation’, that policies to reduce budget deficits lead to higher output, do not hold. Policy responses to the coronavirus pandemic have required large increases in the budget deficit, and a step rise in the debt to GDP ratio. It is important that after the pandemic policy does not revert to ‘reduce the debt’ with the destructive effects which would come from such policies (Sawyer, 2021).

IT was closely associated with the ‘new consensus on macroeconomics’ (NCM). The operation of IT (along lines akin to the so-called Taylor rule) relies on notions of the ‘natural rate of interest’ and ‘potential output’ (at which inflation would be constant). These notions are closely tied to a specific theoretical framework, and may or may not be applicable in the real world. At a minimum, calculation of NRI and potential output have proved problematic.

### **Financialisation and monetary policy**

The past four decades and more have been characterised as an era of intense financialisation. This was not the first era of financialisation (Vercelli, 2013, Fasianos et al, 2018). The present era of financialisation has its own specific characteristics, which impact on the economy and society, though the focus here is on implications for monetary policy.

A general perspective on financialization is provided by Epstein (2005, p.3) when he wrote that “financialization means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies”. Within that broad definition, the recent period is often viewed in terms of expansion of the banking sector and of equity markets and the growth of what is now often termed ‘shadow banking’, growth of a range of financial instruments with securitization and derivatives, the engagement of non-financial corporations in financial dealings, and the growth of consumer borrowing and household debts.

The themes of particular relevance here are the increasing scale of the financial sector in terms of bank deposits and stock markets, and the developments in the financial sector in respect of securitization etc. Financialisation has involved and been stimulated by financial liberalization and de-regulation which impacts on the behaviour of financial institutions and credit expansion. The present era of financialisation has involved rapid growth of household debt, which has implications for the financial instability and cycles. In the context of the endogenous money, the emphasis shifts from the creation of bank deposits through loans for the financing of production and investment to credit creation for household debt.

During the recent decades of financialisation, the money form has not changed and has remained those liabilities of commercial banks which are measured by M1 (Sawyer, 2020). The banking system itself has changed, the immediate uses to which money are put have shifted towards more loans for households and to enable asset acquisition and less financing of production and investment. These have implications for the nature and path of economic and financial cycles. Monetary policy retains the policy interest rate as one of the key decision variables, but it has clearly shifted to concerns over financial stability and the use of ‘unconventional’ policies, such as variants of quantitative easing. Some significant differences can arise in so far as the central bank operates to ensure a particular level of bank

reserves. This has in effect happened through quantitative easing (QE) under which central bank purchases financial assets in exchange for central bank money, and does so with the intention of maintaining that level of reserves. Similarly, the volume of bank reserves may be policy determined when policy sets the extent to which a budget deficit is to be money-funded. In usual practice, the degree to which a deficit is money-funded depends on the decisions made by the private sector (including banks) as to the additional amount of central bank money (bank reserves, notes and coins) to be held.

There are many changes in the financial and banking system associated with the processes of financialisation. The focus here is on two broad areas. First, the significance (or otherwise) of the rise of household debt and credit arrangements for the operation of the banks is considered. Second, and much more important, the significance of securitization and shadow banking the operations of the commercial banks is considered and which financial assets constitute a means of payment.

Higher levels of household debt (relative to income) have been a general characteristic of financialisation across most countries. Similarly, there has been considerable growth in the use of credit arrangements, credit cards and other modes of payment. The simple question is whether and if so, how such growth of debt and credit fundamentally changes the ways in which commercial banks and money creation is viewed.

Chick (1993) added a sixth stage of banking to the five which she had identified in Chick (1986). This sixth stage is characterized by the two processes of the securitization of credit and the emergence of off-balance sheet operations. Those authors then label a seventh stage as emerging at the beginning of this century with “the main characteristic of the stage is the inextricable interpenetration between the balance sheets of the banking system and the so-called Shadow Banking System” (p.3). These features of securitization and shadow banking have been central to the processes of financialisation.

Caverzasi et alia (2019) argue that “securitisation has opened the opportunity for standard banking institutions to expand their business and widen the pool of potential creditworthy borrowers, and—perhaps more relevantly—it has also provided the financial system with the ‘raw materials’, i.e. the securitised assets necessary for the manufacturing of complex structured financial products satisfying the increasing demand for financial assets of financial institutions, seeking either remuneration for intermediated funds or collaterals for the repo market.” (p.1030). Further, commercial banks and shadow banks play separate roles in the financial system and that “financialisation did not alter the role of commercial banks as money creators, but rather diverted endogenously created money to the financial sphere” (p.1029).



Shadow banking system is viewed as a collection of non-bank financial intermediaries that provide a range of services which are similar to those of commercial banks but subject to different and less demanding banking regulations and without the relationships with the central bank which commercial banks have, including the central bank being lender of last resort. Michell (2017) identifies two views on the shadow banking system: the market view which “sees the phenomenon as the rise to dominance of disaggregated market-mediated financial transactions, and emphasises such activities as dealing in securitized debt. In this view, money and banking are demoted in significance relative to arms-length market-mediated financial transactions”. (p. 355). The money view “instead posits that the shadow banking system should be seen as an analogue to the traditional banking system because it performs bank-like functions such as maturity and credit transformation. Holders of this view argue that, rather than market intermediation, shadow banking is an extension of banking because shadow banks issue money” (p. 355).

The shadow banking system raises many concerns in association with financial instability and regulation of the financial system. The argument here can be simply stated. First, the liabilities of the shadow banking system are not (at least yet) to be treated as money as “these financial claims cannot be used either as a means of payment for goods and services or as a means of settlement for financial contracts” (Michell, 2017, p. 355). In the future it is possible that the transfer from one agent to another of liabilities of shadow banks become regarded as a means of settlement, but for the present that has not arisen. In terms of the creation (and destruction of) money, the clearing banks retain their pre-eminence.

The liabilities “issued by the shadow banking system are near-monies: liquid short-term stores of wealth” (Michell 2017: 355) rather than being money in the sense of a generally accepted means of payment. Nersisyan and Dantas (2017) analyse banks and nonbank financial institutions in terms of the creation of liquidity within what they term the pyramid of financial liabilities building on the ideas of a hierarchy of money. They conceptualise “liquidity creation ... as the process of exchanging liabilities occupying the lower tiers of the pyramid for those at the higher tiers” (p. 280). They then conclude that “the finance sector can be a larger source of instability than accounted for” (p. 297). In a similar vein, by means of a worked example, starting with a loan made by bank to a non-financial agent who acquires some bank deposits, Lavoie (2019) finds that the overall amount of credit can rise even though the amount of bank deposits has not; and the amount of liquid assets held by the non-financial sector has also risen. The non-bank financial system contributes to the creation of liquidity and the provision of credit. He argues that “the additional credit could have been provided just as well by the banking sector [and] ... that the non-bank financial institutions would have been unable to provide any credit unless non-financial agents had previously transferred some of their bank deposits to the non-banks. (p. 116). From this brief discussion, one implication to be drawn is the commercial banks remain central to the

creation of money and in that sense the endogenous money analysis remains intact. Financial institutions other than commercial banks have expanded their role but have not as yet become what may be viewed as money creators in that their liabilities are not accepted as means of payment. Further, those financial institutions have not developed ‘lender of last resort’ relationships with central banks. It is rather that the growth of financial institutions has the effects of increasing liquidity. The restraints on the banks to expand the stock of money through loan creation are changed through the possibilities of securitization of loans. It also points to the need to analyse the creation of money through bank loans in a system-wide manner which embeds the commercial banks into the overall financial system.

### **Monetary policy, fiscal policy and quantitative easing**

The central bank serves as the banker of banks and the banker of the government. In the former role it is charged with acting as lender of last resort. In the latter role, it is charged with the provision of central bank money for government spending decisions. In circuitist terms, the central bank provides initial finance for government expenditure, that is central bank money is provided to government to enable the expenditure to proceed. In the absence of central bank money not being made available, the expenditure cannot proceed. As far as the central government is concerned, its expenditure is funded by a mixture of tax revenues and sale of bonds and bills. The central bank acquires some government bonds which is matched by the issue of central bank money, held as reserves by the commercial banks.

The central bank can potentially frustrate the operation of fiscal policy through two routes – decline to create central bank money to (initially) finance government expenditure, and through responding to a proposed change in budget deficit (and fiscal stimulus) by changing policy interest rate (e.g. raising interest rate in face of a fiscal stimulus).

The instruments of central bank policies have focused on the use of the policy interest rate, expanded in the last decade to encompass QE. The use of QE raises the issue of not only the volume of financial assets to be purchased from the private sector and the resulting level of increase in reserves held by the commercial banks, but also the composition of the financial assets. In the early days of QE, as in the operation of open market operations, the purchase was of government bonds. At the consolidated level of government and central bank, this changed the composition of government debt as between bonds and bank reserves. But the introduction of interest paid by central bank on reserves held by the commercial banks means that the costs of funding to the government is little changed though how it is recorded may differ.

A report from the Bank of England reviewed the effects of QE in the UK in the first half of the 2010s. It found what they termed central bank balance sheet expansions “had a discernible and significant impact on financial markets and the economy.” Their empirical analysis of the macroeconomic impacts

of QE yielded three results. “First, it is only when central bank balance sheet expansions are used as a monetary policy tool that they have a significant macro-economic impact. Second, there is evidence for the US that the effectiveness may vary over time, depending on the state of the economy and liquidity of the financial system. And third, QE can have strong spill-over effects cross border, acting mainly via financial channels.” (Haldane, Roberts-Sklar, Wieladek, and Young, 2016) with significant impacts on the acquisition of private sector debt in developing countries.

The perspective taken here is that quantitative easing can have a role in the operation of monetary policy, particularly in the context of low real interest rates. However, its role should be focused on the macroeconomic conditions and the encouragement of economic activities.

There should be concern on which financial assets can potentially be acquired under quantitative easing. But, QE should not be used to directly finance new projects. The reasoning behind these remarks is elaborated in the context of climate change in the next section.

### **Central bank role and climate change**

The basic argument here is that central banks should pay full regard to climate change in their decision-making, but that there would be rather limited consequences of that. The mandate of a central bank should be formulated away from inflation targeting, and towards general support of the economic policies of the government. The European Central Bank has the mandate to “support the general economic policies in the Union with a view to contributing to the achievement of the objectives of the Union”, though it is doubtful if such a mandate has any impact on the decisions of the ECB. Within such a mandate, the importance of ensuring that monetary policy is conducted in a manner fully consistent with addressing climate change and environmental degradation<sup>1</sup> The role of the central bank is though likely to be a rather limited one, and specifically limited to purchase of financial assets deemed to be ‘green’ in the context of QE and the purchase of corporate bonds.

The policies of QE conducted by central banks over the past decade have raised a number of policy suggestions. First, since QE appears to provide money to the banking system through purchase of financial assets then could not money created by the central bank be supplied to others? Second, the central bank decides which financial assets it will purchase and which it will not, and the quantity of financial assets to be held. It has traditionally been the case that a central bank engaged in open market operations or similar with purchase/sale of government bonds.

The fact that the central bank (in general) provides money for government expenditure and that many central banks have practiced quantitative easing in the past decade has led many of propose forms of QE directly linked with expenditure – notably in the environment/climate change areas. These types of proposals place decisions on the forms and level of public expenditure in the hands of unelected central

bankers, rather than in the hands of elected politicians. There is a good case for the establishment of national investment bank, directly funded by bonds or similar. It should be the role of a national investment bank or similar to allocate funds in line with the political objectives.

The economic and social impacts of climate change and environmental degradation raises the need for the re-structuring of economic activity, shifting to low carbon production etc.: the shift away from ‘brown’ investment towards ‘green investment’. And then the funding of those shifts and the transition to a low carbon economy. Funds and finance channelled through the financial system; to address climate change and the transformation of the economy requires the channelling of funds in the ‘right direction’. I would argue that the monitoring of the allocation of funds towards ‘green investment’ should be within government policy. In a similar vein, the use of public funds for green investment should be channelled through a green investment bank of some form.

There can be issues of financial instability arising from the challenge of climate change. There is recognition that there is what has been termed ‘transition risks’ arising from the re-valuation of carbon-intensive assets arising from shifts to a low-carbon economy<sup>2</sup>. The change in asset values (assumed to be downwards - though the valuation of carbon-unintensive assets could well rise) have implications for the range of financial institutions and households who own the corresponding assets. This may well be another example of financial markets mis-pricing financial assets – why has the risks involved not been incorporated into the financial asset prices? While it may be relevant for the central banks and others to warn about the likely shifts in asset prices, it is far from clear what actions would follow for monetary policy.

There have been suggestions that central banks should pay regard to the ‘green’ credentials of the financial assets in their portfolio. Following on from QE, central banks have acquired a range of financial assets outside the usual range of government bonds. Christine Lagarde (2019), for example, said that a “move to a gradual transition to eliminate this type [carbon] of asset was something which needs to be done”. She also remarked that the ECB could not exclusively invest its 2.6 trillion euro portfolio in green bonds “because there is not enough of a market.” The implementation of such a policy requires a clear definition of what constitutes a ‘green investment’, particularly in terms of financial assets. It may be possible, though with some difficulties, to say that a particular physical investment can be deemed ‘green’, based on features such as the environmental impacts of its construction, the nature of the production which will be associated with the investment etc. But a financial asset is ‘fungible’ – that is the sale of a financial asset raises money which is spent by the company.

The operations of the central bank in this regard should be set out by the government – that is it should be a decision of government as to what is regarded as ‘green investment’ and the degree of ‘greenness’.

In effect, a central bank being willing to purchase/hold some financial assets but not others shifts the composition of demand for the financial assets, and to that extent the price of ‘green’ financial assets is somewhat higher than otherwise, and the price of ‘brown’ financial assets somewhat lower. The effects could be similar those of the disinvest movement (which then raises the question of who decides which type of assets are to be favoured and which not).

In this discussion, it is being assumed that the financial assets acquired by the central bank are purchased in the secondary market, and are not directly purchased by the issuer of the financial asset. Thus the central bank is not directly financing investment, green or otherwise. I would argue that it is not the role of the central bank to directly finance/fund investment for the simple reason that to do so requires the central bank to set up the required abilities to credit rate, monitor etc. the loans etc. A dedicated State Investment Bank or similar is more suited to such tasks than the central bank. This could be summarised at the European level in terms of more use of the European Investment Bank which has developed capacities for fund raising and allocation to investment project rather than the European Central Bank which has been focused on monetary policy.

### **Concluding comments**

Sheila Dow (2017) pointed to the principle “that central banks should ensure that a safe money asset is provided” (p. 1553). She then argued that this principle should not be interpreted in terms of a monetary policy of inflation control. Instead, “the post Keynesian perspective interprets it as the core element of a stable financial system which generates credit to finance real economic activity in such a way as to support government policies with respect to its socio-economic goals (such as reducing income inequality and conserving natural resources” (p. 1553).

As Michell and Toporowski (2019) argue there are dangers of giving central banks (Bank of England in their discussion) responsibilities that it cannot fulfil. They argue that a central bank can regulate banking, set interest rates and ensure that there is sufficient liquidity in capital markets to support the financial operations of government and firms, and in a crisis can provide financial markets with liquidity. However, “the proper regulation of employment and investment in the economy is a matter of policy for Government, not the central bank.” (Michell and Toporowski, 2019)

In the era of financialisation, it is necessary to evaluate the roles of monetary policy and the operations of the central bank. It has long been recognized that the banking and financial systems evolve over time, and the nature and role of money also. A simple conclusion flows from that simple observation, namely that the role, objectives and instruments of monetary policy have also to evolve.

Monetary policy has often been viewed through the lens of the classical dichotomy, in the form that monetary policy has often been seen as geared towards prices and inflation, with little impact on the level or rate of change of economic activity. The inflation targeting (whether by means of attempted control of the stock of money or through interest rates) clearly fitted into that view. The era of financialisation raises many issues on the conduct of monetary policy. I would highlight two. First, the transmission channels of monetary policy (in the form of interest rates) change. Second, financial stability has become much more of an issue.

The policy instruments at the disposal of central banks are centred on the setting of policy interest rate and the purchase and sale of financial assets (often notably government bonds, now extended to a range of private financial assets) whether through open market operations or through so-called unconventional policies such as quantitative easing. These policies should be used in general support of the policy objectives of the government, but with a realisation (as noted by Michell and Toporowski above) of the limitations of these policy instruments and their impacts on real economic activity.

The effects of monetary policy on inequality and on climate change have been discussed. In respect of inequality, the general effects of monetary policies on interest rates and quantitative easing were general viewed as modest. Further, insofar as there are significant effects, it would be appropriate to address these through taxation, that is through income and wealth taxes. In the case of the challenges of climate change (and environmental degradation more generally), I would argue that the role of central banks should be supportive of government policies on climate change, through the nature of financial assets which it accepts. But I argued against the direct financing by the central bank itself of 'green' (or indeed other) investment and of any monitoring the allocation of funds by the central bank. It is appropriate for funds to be allocated by specialist agencies such as a State/Green Investment Bank, with the central bank proving initial finance for government expenditure as it already does.

The interest rate setting should be geared to the achievement of a suitable real rate of interest, which has been suggested as one linked with the trend rate of (per capita) income.

Financial stability becomes the focus of monetary policy with the development of macro prudential policy instruments.

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<sup>1</sup> As the paper was being finalised, the UK Chancellor of the Exchequer announced there is to be a reformed mandate for the Bank of England “reflect the importance of environmental sustainability and the transition to net zero”.

<sup>2</sup> For example, Breeden, (2019), Dafermos, et al (2018).