

19-18 Should Monetary Policy Take Inequality and Climate Change into Account?

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Abstract

Should central banks take more account of ethical distributional and environmental concerns in the design and implementation of the wider monetary policy toolkit they have been using in the past decade? Although the scope to influence a range of objectives is more limited than is often supposed, and while it is vital to not derail monetary policy from its core purposes, central bank mandates justify paying more attention to such broad issues, especially if policy choices have a significant potential impact. Carefully managed steps in this direction could actually strengthen central bank independence while making some contribution to improving the effectiveness of public policy on these matters.

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INTRODUCTION AND SUMMARY

The role of central banks in society and their independence from political pressures are back in the news. This time it is not just about politicians wishing to see lower interest rates and a helping hand for financing their budgets, though there has been quite a bit of that. The newer areas of debate concern major ethical issues, notably the impact of monetary policy actions on the distribution of income and wealth and on efforts to combat climate change. To some jaded observers, this is just another in a long history of attempts to secure special interest access to the press. But policy neglect of large distributional and intergenerational issues can, as has recently become evident, have profound consequences for society as a whole. Climate change and inequality are first-order issues in that context, though inevitably second-order for monetary policy.

Should central banks resist the calls to take more account of ethical distributional and environmental concerns in the design and implementation of the wider set of monetary policy tools they have been using in the past decade? Many central bankers will balk at the idea, fearing a damaging loss of independence and a dangerous distraction from their core competencies. These are clearly valid and important concerns. But the secondary mandates, whether explicit or implicit, of central banks arguably warrant attention to large systemic issues like climate change and inequality, to the extent that these can be significantly influenced without detracting from the primary goals of monetary policy.

A closer look suggests that the potential for improvements here is more limited than some have suggested. Nonetheless, central banks have been behind the curve of society's response to these issues, and could make a worthwhile contribution in a number of respects. Indeed, while they may fear an encroachment on their independence, such a threat may be greater for central banks that neglect reasonable public expectations in these dimensions.

The Expanding Toolkit

Long focused exclusively on what are essentially defensive goals of price and, to varying degrees, financial and macroeconomic stability, monetary policy before the global financial crisis primarily concerned setting the general rate of interest at an appropriate level for the economy. This allowed central banks to keep largely clear of debates concerning the impact of monetary policy on different groups in the economy.

To contain the consequences of the crisis, central banks began to rely on a much wider range of tools than had been in recent use. This activism has prompted questioning of the side effects of some of these policy tools as well as their potential to be used to promote different objectives. The scale on which there have been outright purchases of financial assets and the long period of ultralow—in several cases negative—interest rates were clearly needed if central banks were to deliver on their mandate. But these policy innovations also had novel effects on the distribution of income and wealth that were more noticeable than with traditional interest rate policies. And outright purchases of securities changed the cost of financing for the governments and other entities whose bonds were bought by central banks in large-scale asset purchase (quantitative easing [QE]) programs—evidently a stronger effect than anything associated with precrisis collateral eligibility rules.

The Critique

These new dimensions have led to an enhanced political focus on the mandate and tools of central banks. In particular, the sharp and sustained rise in the market price of long-term bonds has triggered complaints from egalitarians concerned that low-income households do not have sizable holdings of such bonds. Furthermore, environmentalists have called attention to central bank purchases of bonds issued by firms associated with large carbon footprints. In each of these two key dimensions it is a distributional issue that is at stake: a suspected tilt against lower income households or against future generations. And these concerns surely resonate well beyond activist circles.

Why the Resistance?

Three different “brakes” have seemed to inhibit the response of even those central bankers who may personally attach importance to the challenges of societal inequality and climate change.

First and foremost, they fear too close an entanglement with politicians whose conflicting goals might succeed in diverting the thrust of monetary policy away from its primary goals.

Second, they consider it likely that the distributional and environmental impact of monetary policy is much smaller than their more strident critics have alleged.

Third, they fear that fashioning the mix of policy tools to meet objectives not explicitly stated in their mandates could, in a democracy, become legally and ethically problematic. While legal constraints are specific to each jurisdiction, the ethical questions are not: it may be an ethical abuse for public servants to use the powers granted to them for purposes not sanctioned or envisaged by—and potentially encroaching on the realm of—the democratically elected legislature. Furthermore, such action could undermine the public support necessary to enable the central bank to function effectively.

A new generation of central bankers is taking over from those who managed the economic recovery from the crisis.¹ How much more attention should they pay to these calls?

Opportunities

The wider toolkit used in the crisis can give some new opportunities for central banks to select policy mixes that result in more favorable side effects of monetary policy on these dimensions without impairing the transmission of monetary policy to macroeconomic goals.

For example, if central banks and financial regulators encourage private financial institutions to go beyond conventional approaches in assessing the financial risks of exposure to climate-sensitive firms, could this not also be applied to their own asset purchases? And even if the aggregate effect of QE on income and wealth distribution has been less than is often supposed, more socially progressive options could still be used in the future. These could include “helicopter money through the budget” where government transfers or other spending programs

1. There are leadership changes at the US Federal Reserve, People’s Bank of China, European Central Bank, and Bank of England during a two-year period that began in February 2018.

are underpinned by a decision of the central bank to prevent crowding out. (The central bank would want to retain autonomy and policy initiative in any such ventures.)

It is important not to overstate the potential for improvement. For this reason, and also because of the complex trade-offs involved, it would be both undemocratic and usually of limited effectiveness to leave achievement of goals on these nonmonetary policy dimensions solely or even largely to the central bank. Government cannot abdicate its role here. If the central bank is to do more, it needs a clearly articulated governance relationship with government or legislature to moderate action on these issues, to avoid compromising the independence needed for its core mandate.

One big contribution that central banks can make is in understanding and measuring the systemic dynamics of distribution and climate change as they interact with the financial system. With their formidable access to data and research expertise, needed to deliver on their primary mandate, central banks are exceptionally well placed to improve understanding of these issues and to advise on the design and scale of potential governmental measures in financial and macroeconomic policy most effective in delivering societal goals along these dimensions.

Most central banks have an explicit mandate to do what is in their power to support wider goals of economic policy, though this is generally subordinated to the goals of price, financial, and macroeconomic stability. Even a central banker who is personally uninterested in the goals of a more equitable and environmentally sustainable economy needs to be aware that for a central bank to underperform on that secondary mandate is to risk exposure to increasingly sustained attacks on its independence, which could undermine achievement of its core objectives.

THE VARIED DISTRIBUTIONAL IMPACTS OF MONETARY POLICY

The large measures undertaken by central banks in the recent crisis, involving the deployment of tools that had not been activated for decades, especially QE, alerted a new audience to the powers of the central bank and prompted a new wave of scrutiny on the impact of these tools in dimensions other than macroeconomic stability.

Monetary policy tools such as QE can have distributional effects through a variety of channels, depending, for example, on what assets are bought and under what overall economic conditions. Some of the redistribution is at the heart of the effectiveness of monetary policy (Brunnermeier and Sannikov 2012), but some is incidental and unintended.

Attention has been drawn in particular to the consequences of QE on aggregate measures of inequality of economic resources (e.g., between households). In fact, though often neglected by monetary specialists, it has long been understood that, even when implemented with the traditional approach of manipulating short-term money market interest rates, monetary tightening or easing could have side effects on income and consumption inequality (cf. Coibion et al. 2017 and citations therein).

Most widely discussed is the impact of QE on the vertical distribution of wealth, as the cash value of fixed interest and other financial assets rises sharply with the fall in yields engineered by the asset purchases. Of course this is only a first-round effect. The purchases affect yields throughout the financial system,² and engender behavioral responses that increase aggregate demand and economic activity. Thus, although the direct impact

2. Market forces tend to transmit the price impact from the assets that are actually being bought to other asset classes, depending on the degree to which they are considered substitutable. But that transmission can take time

on asset prices is generally understood to widen wealth inequality, the same asset purchases can be needed to accelerate the economy's return to high employment, which has a narrowing effect on vertical income inequality (and on the distribution of human capital).³

The reentry of some central banks into the market for private bonds and equities also has a distributional effect, as between different corporations and economic sectors.⁴ This is where the issue of climate change has entered the discussion. Environmentalists have raised concerns about the purchase by central banks of bonds issued by firms with large carbon footprints or whose activities are otherwise thought to be particularly damaging to the environment and to accelerate global warming. Because several of these firms are disproportionately large and highly rated among bond issuers, they form a larger part of market neutral purchasing programs than their share of economic activity. There could also be other environmental, social, and corporate governance (ESG) concerns about firms whose bonds or equities are being bought.⁵ In particular, the financial sector is most directly influenced by most central bank policies.⁶

Monetary policy has been in expansionary mode for more than a decade in most of the larger advanced economies. But this will not always be the case. Whatever the distributional consequences of expansionary policy, it is worth bearing in mind that its reversal will tend to have the opposite effect. (The secular decline in real interest rates has also had distributional effects, but this has causes other than monetary policy.)

It should not be thought that such reasoning opens the door to advocates of monetary policy meddling in every dimension of public policy. Few distributional issues other than inequality and climate change would concern a person standing behind Rawls' veil of ignorance and as such unaffected by specific beneficiaries or interests.

and is not one-for-one. The unevenness here is sometimes referred to as the Cantillon effect (Bordo 1983; and in the present context Bagchi, Curran, and Fagerstrom 2019).

3. Interest rate and asset purchase policies are not the only central banking tools that can have effects on inequality of household resources. To take but one example (which we will not pursue further here), the choice of macroprudential regulations to restrain imprudent lending in a housing bubble may also have distributional effects. Inasmuch as low-income and low-wealth households are more likely to be constrained by macroprudential tools such as ceilings on the ratio of mortgage loan to property value and on the ratio of debt to borrower income, such measures might have an adverse distributional effect relative to alternatives such as cyclically varying capital requirements for lending banks. The latter tools are likely to be less effective, though, and the more intrusive loan-to-value and debt-to-income measures might protect low-income households from damaging overindebtedness.

4. Collateral eligibility rules for central bank lending to banks could also influence access to finance of different firms and sectors. Though the impact is presumed to be quantitatively smaller than that of QE, the collateral issue will likely assume relatively greater importance in a post-QE future.

5. There has been some return also to other types of sectoral focus in the design of monetary policy instruments, with a degree of discrimination whether (for example) in favor of the housing market (Federal Reserve support of the market for agency bonds; the Bank of England Funding for Lending Scheme) or of the nonhousing private sector (ECB targeted longer-term refinancing operations, TLTROs). Still, directed lending to preferred sectors has been out of fashion in banking policy following disappointing experiences worldwide (cf. World Bank 2001). But one could, for example, imagine a favorable climate change effect if the ECB's TLTROs were expanded to cover the retrofitting of insulation for residential properties.

6. It is sometimes argued by critics of central banks that the choice of policy tools and the overall monetary stance (and even the unwillingness to accept a wider mandate) can be influenced by a preference in favor of the interests of the financial sector. This important point is not considered in this paper, though it is worth noting that banks in Europe in particular have complained that their ability to remunerate capital through profits has been impaired by the lengthy period of low interest rates and a flat yield curve. (They have, however, benefited indirectly through improved loan recoveries resulting from the stronger economic performance due to expansionary monetary policy).

There is one further distributional dimension that calls for the attention of central banks, namely the impact of monetary policy on foreign countries—for example, the impact of QE on the price of government bonds in different euro area member states as a response to the large-scale asset purchase programs of the European Central Bank (ECB), or the impact on market conditions of inclusion or not in the network of central bank swaps (Bahaj and Reis 2017) (or, in a quite different way, the spillover impact of monetary tightening in reserve currency countries on macroeconomic conditions in smaller economies).⁷

WHAT SHOULD GUIDE THE ACTIONS OF CENTRAL BANKERS ON SUCH DISTRIBUTIONAL ISSUES?

Monetary policy is not unidimensional in its economic impact; it has distributional effects. The response of some might be: “So what?” Central banks have specific mandates that generally prioritize price stability and aggregate economic performance. These mandates rarely speak explicitly about such matters as income inequality and climate change.

Were the short-term money market interest rate the only instrument available to the central bank, it might be easier for the bank to ignore moderate side effects of its policies on goals unspecified in its mandate. Achieving the primary objectives takes priority. But with the wider set of tools now available, it may be possible to adjust the mix to improve side effects without compromising on the primary objectives.

A voluntarist approach could start from the axiomatic (and plausible) position that inequality and climate change are bad: policy that reduces them, all other things being equal, is to be preferred on ethical grounds. Why should any central banker hesitate to examine the possibilities and act accordingly? After all, the administrative arrangements of many central banks include goals such as energy efficiency in their buildings and operational activities, diversity and inclusion in their procurement and equal opportunities in their employment. Likewise, central bankers can express their personal preferences on ESG issues in choosing the portfolios of, for example, their pension funds or the investment of their own funds (Cœuré 2018, Lane 2019).

Doubtless, many central bankers agree, and may be personally motivated to act accordingly. But administrative policy is one thing, quite another to redirect the force of monetary actions. Given the large “money creation” powers with which they are entrusted by democratic legislatures to achieve specific goals, most central bankers are influenced by another ethical puzzle: whether it is right that they use these powers in an expansive manner to promote goals that they regard as socially desirable but for which they have no mandate. Many conclude that they should not arrogate to themselves this right without explicit democratic sanction. The public servant can thus be ethically conflicted: action to promote an unmandated social goal could be considered *ultra vires*.

Central banks need not be transfixed by these reservations. After all, there is another basis for central bank action on these matters, namely the secondary and implicit mandates that charge them to support the general economic goals of the states that have established them (see box 1). While these secondary mandates do not imply that central bank should step outside their normal sphere of operations (for example, by making selective

7. This is separate from the spillback onto the reserve country's economy from that economy's monetary policy effects on the rest of the world (Obstfeld 2019).

Box 1

Central bank mandates

In most countries, the core task explicitly mandated to the central bank is that of ensuring price and macroeconomic stability. Legislative monetary policy mandates given to central banks almost invariably highlight price stability. But while price stability is often given priority in the mandate, it is implicitly, and usually also explicitly, accompanied by other elements such as high employment (United States) or support for wider economic policies (the euro area, United Kingdom, and Switzerland), although these other elements may be stated as subordinate.

- **Sweden:** As an exception to the rule that there are usually other elements, the Sveriges Riksbank Act states without qualification that “the objective of the Riksbank’s activities shall be to maintain price stability.”
- **United States:** The US Federal Reserve Act sets the statutory objectives for monetary policy as maximum employment, stable prices, and moderate long-term interest rates. The interest rate part of the mandate is not often discussed explicitly.
- **European Union:** Despite repeated injunctions from European Central Bank (ECB) officials in the past that they had only one “needle in their compass,” namely price stability, the mandate defined by the ECB Statute is indisputably wider: “The primary objective of the [European System of Central Banks] shall be to maintain price stability. Without prejudice to the objective of price stability, it shall support the general economic policies in the Union.” (The statute refers to an article of the Treaty on European Union for a definition of those policies, which includes “sustainable development of Europe based on balanced economic growth and price stability, a highly competitive social market economy, aiming at full employment and social progress, and a high level of protection and improvement of the quality of the environment.”)
- **United Kingdom:** The Bank of England’s monetary policy objective is to deliver price stability—low inflation—and, subject to that, to support the government’s economic policy including its objectives for growth and employment. (For this purpose, the UK government’s objective is defined as the achievement of “strong, sustainable, and balanced growth.” Price stability is defined not by the bank but by the government, which currently has an inflation target of 2 percent.
- **Switzerland:** Legislation requires the Swiss National Bank to “ensure price stability” and specifies that, “in so doing, it shall take due account of the development of the economy.”
- **Japan:** Mention of other objectives is sometimes even more recessed. For instance, the Bank of Japan Act states that the Bank’s monetary policy should be “aimed at achieving price stability, thereby contributing to the sound development of the national economy.”
- **Argentina:** Social equality is one of the objectives explicitly set for the Banco Central de la República.

interventions in favor of specific households, firms, regions, or economic sectors) they do require them to pay some attention to matters beyond price stability.

The challenge in pursuing this approach is one of interpretation and guidance. Secondary mandates are typically vague and general.

Besides, the goals of greater equality and protection of the environment are not simple or unidimensional. The tools of the central bank are blunt in this context; plausible actions may easily misfire if not well integrated into a wider policy framework.

Furthermore, some of the measures discussed by activists, such as various forms of helicopter money, would seem to lie outside the Overton window of central banking policy in most of the relevant countries today, unless framed in ways that involve governmental decisions about the allocation of grant funds (see box 2).

Box 2

The central banking Overton window

Grants are not part of the Overton window for the independent central bank's toolkit. One of the strongest norms of modern independent central banking is that any purchasing power created by the central bank is made available by way of a loan or an outright purchase of a security; it is not provided as a grant. Central banks with grant-giving powers would not be allowed the degree of independence and responsibility that many have today.

A corollary of this principle is that central banks shall not selectively target individual firms or households, or particular regions or economic sectors in their policy actions.

This is despite the fact that, unlike most institutions of state, central banks can often afford to make grants because they tend to make sizable profits in normal times, with the net interest earned on their banking and investment activities exceeding their operational costs. But these profits are usually remitted to government as the owner. Any expense that is not warranted by the central bank's mandate can thus be seen as an improper use of its powers inasmuch as it is diverting resources that should be available for the purposes decided upon by democratically elected governments.¹

The other key principle in modern central banking is that the government should not have automatic access to purchasing power that can be created by the central bank. It is this principle that motivates making the central bank independent. The underlying idea is that democratic governments can rarely resist the short-termist temptation to indulge in inflationary financing, and unless they lose the power to do so, overall economic performance in all important dimensions will be weaker.

In its strong form, as enunciated for example by the EU Treaty, this second principle insists that the central bank may not provide government with an overdraft or purchase debt instruments directly from government. The ECB interprets this prohibition on monetary financing of the government as intended to prevent "fiscal dominance," which could prevent the central bank from being able to deliver on its price stability mandate (Mersch 2016). (A weaker form would say that such financing should at least not be provided at the behest of government.)

These two principles pull in somewhat different directions: one in effect tells the central bank: "Do not spend the resources that belong to the government," while the other says "Do not create purchasing power to finance the government." In fact they are closer than they appear: both inhibit the central bank from using its powers to carry out functions that are proper to the government and not included in the central bank mandate.

Practice concerning nonmonetary functions of the central bank lies in a somewhat grey area and can provoke critique from both right and left. One example relates to the economic research departments, often sizable, that central banks often operate and which they usually justify by reference to their mandate. However, by spending so much on in-house economic research, central banks may have a chilling effect on outside research critical of the central bank's policies, inasmuch as researchers might self-censor for fear of exclusion from lucrative research contracts (Dietsch, Clavet, and Fontan 2018).

Microprudential supervision of banks provides another type of example. This function is sometimes explicitly mandated to the central bank, and often covers some or all of the costs itself, potentially placing it in an uncomfortable position vis-à-vis a very strict interpretation of the monetary financing prohibition. Arguably the cost of supervision should be charged back to the banking sector to avoid a distorting subsidy of the sector.

1. This concern is discussed at length in Tucker (2018, 558), who argues that independent agencies such as central banks should "not be given mandates that entail making big distributional choices or big value judgments on behalf of society, and their policy choices should not interfere with individuals more than is warranted to achieve their statutory purpose."

All in all, any energetic policy switch demands a degree of interaction and collaboration with democratically elected legislatures and governments. Such interaction is needed to ensure that central bank measures directed to distributional issues actually do end up with a favorable overall result when taken in conjunction with the actions of government agencies whose tools can be more precisely and more effectively focused on these issues and that are, after all, the entities chiefly responsible (with legislatures) for articulating and achieving society's goals.

Nevertheless, the independence that is essential to enable the central bank to deliver on its primary mandate precludes direct instructions from government on actions designed to improve distributional considerations.

There is a further reason to motivate action even by a central banker who is unenthusiastic because of concern that the central bank lacks the bandwidth to take account of these issues without diluting its focus on primary objectives.

Independence from short-termist political pressure is essential for central banks to succeed in delivering their primary objective, ensuring continued public support for that independence is also something that central banks should work on. This will surely include displaying the central bank's alignment with societal preferences on vital issues such as inequality and climate change. Adhering to social norms for this instrumental purpose could be another basis for central bank action to counter inequality and climate change.

Even central bankers whose motivation for action is primarily defensive would do well to avoid rhetorical gesturing that conceals mere lip service and greenwashing, though.

The importance of all this depends on the degree to which central bank policy can have an effect on these distributional issues. But even if the impact of such measures is not large, they can signal and reinforce a coherence in the thrust of public policy.

ARE THE SIDE EFFECTS OF MONETARY EXPANSION BIG?

Income and Wealth Distribution

Monetary conditions can affect inequality of income and consumption through several distinct channels, some partly offsetting others, so that the net effect is ambiguous. Unemployment is the main driver of fluctuations in income inequality, and the most powerful equalizing effects of countercyclical monetary policy are in stabilizing employment. The easy stance of monetary policy in most major central banks since the crisis of 2007–08 has had a powerfully equalizing effect on income inequality.

It is useful to distinguish between the impacts of short-term policy shocks (unanticipated movements in the policy rate) designed to stabilize the macroeconomy and of permanent changes in the inflation target (see box 3). Looking back at the precrisis years, Coibion and colleagues (2017) show that both kinds of shock can have statistically significant and fairly noticeable effects on various measures of income and expenditure inequality, at least in comparison with other business cycle–related distributional fluctuations.⁸

8. As far the long run is concerned, Coibion et al. also find that an increase in the inflation target has tended to reduce inequality. However, they observe that monetary policy shocks cannot account for the trend increase in income inequality.

Box 3

Would a higher inflation target be good for the poor?

Twenty years ago the most popular question concerning the impact of monetary policy on the distribution of income and wealth was whether higher inflation is associated with more or less inequality. Despite a burgeoning literature, and much rhetoric from central bankers, this question still has no simple answer (cf. Furceri, Loungani, and Zdzienicka 2018; Colciago, Samarina, and de Haan 2019). Very high sustained inflation does seem to be associated with higher inequality; but the threshold level of the inflation target below which further reductions increase inequality does not seem to be very low. In light of this, with inflation targets in most major economies set at around 2 percent per annum, it would be reasonable to suppose that sustained easy money conditions would not be opposed by advocates of low inequality.

Recent discussion of the optimal level of the inflation target has, however, focused more on whether, by reducing the frequency with which nominal interest rates reach their effective lower bound, a higher target would improve the average effectiveness of monetary policy in stabilizing the economy (Ball et al. 2016).

Based on subtle regression techniques, Coibion and colleagues find that expansionary monetary policy shocks are associated with a *reduction* in income inequality (and vice versa), a result that remains true after controlling for age, education, family composition and other factors. Monetary policy shocks account for about 10 to 20 percent of the short- and medium-term fluctuation in income inequality—not to be ignored, but not dominant. They cannot account for the long-term trend increase.

Monetary policy actions tend to alternate between expansion and contraction as the economy is steered toward the target for inflation. Postcrisis, though, there has been a *lengthy* period of exceptional ease, characterized in the main economies by very low nominal and real interest rates at both the short and long term. It is not only egalitarian commentators that have noted how it is disproportionately the rich that hold the assets whose prices have been boosted by these low rates. Indeed, seeing the large increases in the value of bond funds, the question about monetary policy on the lips of many commentators has been “*cui bono?*”

What if there had been no monetary easing in 2007–08? Would inequality have increased or decreased? To answer these questions it is necessary not only to have a credible model of how the main features of the macro-economy respond to monetary policy, but also to draw on survey-based data on household assets and liabilities, as well as their income sources, and in particular to take account of the impact of policy on employment. A growing body of research has explored a variety of methodologies and data from different monetary areas. The most methodologically convincing are those that analyze separately the impacts of changes in employment rates, asset returns, and borrowing costs at different points in the income and wealth distribution.

Illustrative of the kind of research that has been carried out is a paper by Juan Montecino and Gerald Epstein (2015). They use data from two successive waves of the Federal Reserve’s triannual Survey of Consumer Finances (SCF), one mainly before and one mainly after the introduction of QE in the United States. Applying a sophisticated statistical method of isolating the impact of changes in different components of net income to the various quantiles, they measure the impacts of employment, financial asset holdings, and mortgage refinancing on each decile of income. The first two of these factors are the largest, and their effects on inequality are in opposite directions, with the net effect depending crucially on their relative magnitude, which is not precisely

known. Considering how monetary policy has affected employment, asset returns, and refinancing, Montecino and Epstein (2015, 6) reckon that “most likely, QE was modestly dis-equalizing” on the ratio of the 90th to the 10th income quantile (though not on the Gini coefficient); their point estimate attributes to QE about one-sixth of the worsening of US inequality between the two survey waves.

Digging even further into the details of household survey data for the United Kingdom, Philip Bunn and colleagues (2018) assessed the distributional impact of easy money in 2008–14 against a counterfactual in which UK monetary policy instruments are fixed at their 2008 level. Not only do the authors apply actual asset price changes to actual holdings of each surveyed household, but they also simulate changes in employment by randomly assigning employment status changes to surveyed households. Calibrating these effects with assumptions about the macroeconomic impact of the monetary policy changes, they find that the net effect on relative wealth and income inequality (as measured, for example, by the Gini coefficient) was modest: most deciles benefited from broadly comparable percentage improvements, though the bottom two deciles did worst in income terms (in percentage terms; of course this implies that higher income and wealth deciles did better in absolute terms). This result is explained by the worsening of wealth distribution (as equities and other business assets increased in relative value) offset by the reduction in unemployment achieved by the lowering of interest rates.

Quantitative easing in the euro area came later than in the United States and at a time of high but falling unemployment. That may help explain why Michele Lenza and Jiri Slacalek (2018) found a modestly favorable effect on income and wealth inequality (as measured for example by the Gini coefficient) in four large euro area countries. Their study again used detailed household survey information (from the ECB’s Household Finance and Consumption Survey) to map estimated changes in the various components of aggregate income and wealth across the distribution of households. Other euro area studies agree on income, but the findings on wealth are mixed, with some studies finding a reduction in inequality, while others detect an increase in the concentration of financial wealth (mainly equities) at the top end (cf. Adam and Tzamourani 2016, Ampudia et al. 2018, Guerello 2018, Samarina and Nguyen 2019). The effects are rather small in comparison with trend changes in inequality.⁹

Other studies use small vector autoregressive (VAR) models using only macroeconomic variables with summary inequality statistics. The long period of ultralow interest rates in Japan is judged by Ayako Saiki and Jon Frost (2018, 2019) to have increased inequality, based on their five-variable reduced-form VAR regressions in which the Gini coefficient is one of the endogenous variables. They point to labor market rigidity in Japan as a likely contributor to this pattern, with asset price effects dominating.

Empirical studies of this topic yield mixed results, though generally finding only moderate net effects on inequality in either direction. Of more than twenty studies surveyed by Andrea Colciago, Anna Samarina, and Jakob de Haan (2010) conventional monetary expansion was found to reduce income inequality in almost all of the papers that used data extending into the 2000s, whereas the opposite tended to be the case for those based only on earlier data. In the surveyed papers that examined QE monetary policy, the effects also varied: US and Japanese studies have found that, if anything, QE worsens income and wealth inequality, whereas euro area

9. For example, Ampudia et al. show calculations according to which the Gini coefficient of net wealth in each euro area country is unchanged to two decimal places following a 100 basis point change in the policy interest rate.

studies found the opposite, with UK studies mixed. Cross-country studies (e.g., O’Farrell, Rawdanowicz, and Inaba 2016; Domanski, Scatigna, and Zabai 2016) come to similar conclusions: small income inequality effects, with any wealth effect depending mainly on equity price increases.

Differences in methodology and approach explain some of the differences in the findings of these studies. But it is also likely that the impact of QE and other expansive policies on inequality differ depending on the macroeconomic environment in which they are introduced. For example, an economy with low unemployment to begin with will not see any strong boost to low-income households. The precise nature of the financial market interventions employed and their interaction with contrasting patterns of asset ownership will also matter: for example, a boost to house prices is more equalizing than a boost to equity prices.

Although the conclusion seems to be that the net distributional effects have usually been small, this is only part of the story. Boiling the question of distribution down to a comparison of summary statistics with and without the policy neglects much of what happened to winners and losers. Clearly this period of low interest rates over the short and long term affected different households and economic sectors—borrowers and lenders, those with fixed-interest commitments and those with floating rates, holders of traded equities and other business assets, people at different stages in their lifecycle—in different ways. An individual may have fallen into several of these categories at any time (and may have changed categories during the period of easy money), and thus have been affected through offsetting channels of the monetary policy measures adopted. Thus a summary conclusion that the overall effect on the inequality of wealth distribution during the period of monetary easing was small inevitably masks larger movements of individuals up and down the distribution.

It is worth noting that, in welfare terms, at least some of the increase in wealth inequality is an optical illusion: the fact that the same asset can be sold at a higher price today than yesterday does not imply a comparable increase in the consumption stream available over time to the current holder. Yields have now fallen, so to generate the same stream of consumption over time the current value of asset holdings must increase. As Adrien Auclert (2019) points out, what needs to be measured for welfare analysis is the impact on the *net unhedged interest exposures* of households rather than the gross interest rate effects on financial assets. It is far from clear that these exposures are negatively correlated with wealth; indeed, Auclert’s calculations (based on household surveys) imply that they are not.¹⁰

More to the point, the counterfactual (against which actual policy is measured) matters a great deal. To find that inequality was little worse than it would have been if monetary policy had not reacted at all to the economic downturn of 2008–09 is rather a low bar against which to test monetary policy. A more challenging test would be whether a better mix of policy tools could have improved distribution while still ensuring the degree of price and macroeconomic stability that was actually sustained. This question was addressed, for example, by Josh Bivens (2015), who compared the distributional impact of monetary policy unfavorably with hypothetical fiscal policy measures calibrated to have a similar impact on aggregate employment.

10. In addition, in contrast to the income gains from employment stabilization, asset price movements attributable to QE are likely to be reversed (Bivens 2015).

A widely discussed alternative radical suggestion for the counterfactual would be the substitution of QE by some form of helicopter money (Caballero and Farhi 2017, Fontan et al. 2016, Cukierman 2019, Lonergan and Blyth 2014). In its simplest form—a gift of cash to every person in the economy—helicopter money clearly sits outside the Overton window of central banking.¹¹ One response might be to try to move the Overton window, and there have been many comments in that direction. But it does not seem necessary to wait until this is achieved. Instead an equivalent effect could be achieved if purchases of government bonds by the central bank were accompanied by cash grants made by the *government* to the general population. (There is an important difference of legitimacy in the fact that this reallocation of resources would be done under democratic political control.)¹²

Undoubtedly this could have a dramatic effect on inequality. Since this combined fiscal-monetary impulse would involve more government borrowing, it would not have the same effect in lowering interest rates as has QE. How something of this type might be brought into effect while preserving central bank independence is a challenge taken up in the next section.

Climate Change

In the last few years, central banks have taken well-publicized steps to increase attention to financial sector aspects of climate change. A major initiative designed to ensure that banks and other financial and nonfinancial firms assess and report on the longer-term financial risks that they may be exposed to as a result of climate change was launched by the Financial Stability Board in 2015 (Carney 2015, 2019). Furthermore, in 2017 more than two dozen central banking and financial supervisory agencies established a Network for Greening the Financial System to define best financial sector practice toward a sustainable economy (NGFS 2019).¹³

Yet this acknowledgement of financial risk that might not hitherto have received sufficient attention, and indications of a heightened concern of climate change issues involving the financial sector, have not been reflected in the asset purchase programs of the central banks. The ECB and the Bank of England bought corporate bonds during 2016–08, but both decided to make the purchases proportionate to market composition.¹⁴ It will be recalled that the purpose of these asset market purchases was to depress the yield on long-term securities in order

11. There is no need for contrived ideas such as the relabeling of a transfer as a zero-coupon perpetual security.

12. Here I am evidently siding with the position of Woodford in Reichlin et al. (2013).

13. According to its website, “The Central Banks and Supervisors Network for Greening the Financial System (NGFS) is a group of Central Banks and Supervisors willing, on a voluntary basis, to exchange experiences, share best practices, contribute to the development of environment and climate risk management in the financial sector, and mobilize mainstream finance to support the transition toward a sustainable economy. Its purpose is to define and promote best practices to be implemented within and outside of the Membership of the NGFS and to conduct or commission analytical work on green finance.”

14. The Bank of Japan’s purchase of equities under its quantitative and qualitative easing policy of the past decade also operated in a generally market neutral way through the purchase of index-tracking exchange-traded funds, though the choice of indexes to track has evolved, with some preference being given to indexes that apply governance standards, or requirements for investing in physical and human capital, to the firms included (Shirai 2018). Seeking to diversify its foreign assets accumulated largely as a result of foreign exchange intervention, the Swiss National Bank has a very large portfolio of private sector securities including equities that, according to its Investment Policy Guidelines, it too manages in a largely market neutral manner (avoiding firms that “produce internationally banned weapons, seriously violate fundamental human rights, or systematically cause severe environmental damage”).

to boost aggregate demand to help bring inflation back on target. Reflecting long-standing central banking practice, in implementing this policy the ECB has stated that it followed the principle of market neutrality (Cœuré 2018). (According to its website, the Bank of England also required the issuers of the bonds it purchased to be making “a material contribution to economic activity in the UK.”)

Combined with their decisions to limit their financial risk by restricting purchases to bonds of investment grade, market neutrality inevitably resulted in the ECB and the Bank of England acquiring bonds of carbon-based energy companies and other carbon-intensive companies to an extent that is disproportionate to their role in the economy.¹⁵ One reason for market neutrality is the pragmatic one of avoiding complexity and arbitrariness in quickly operationalizing a very large program.¹⁶ Another reason is that having a long negative list of excluded issuers would reduce the potential scale of the purchase program. Departing from the principle of market neutrality would have complicated decision making and opened the door to legal and political challenge. (None of these arguments need be decisive for the future, especially given time to discuss and develop a legally watertight and politically ratified scheme.¹⁷)

Not unreasonably, the outcome has offended climate change activists. But how big an impact did these purchases have on climate change?

For the Bank of England, announcement of the corporate bond purchase scheme in 2016 lowered eligible bond yields by about 13 or 14 basis points, but by only between 2 and 5 basis points relative to investment grade bonds that were not eligible (Boneva et al. 2019). An increase in bond issues ensued, but it is otherwise hard to see that excluding some investment grade firms from such small and rather transitory yield effects could have choked off much of their capital formation during the period of asset purchases (2016–18). More would be needed to achieve a major effect.

The ECB Corporate Sector Purchasing Program seems to have had a larger effect, though it was accompanied by a number of other monetary policy actions. According to Roberto De Santis and colleagues (2018), a decline of 25 basis points in the yield on eligible bonds can be attributed to the program.¹⁸ In this case, ineligible

15. Although only limited public information exists on the actual ISINs purchased in these programs, it is possible to make inferences from the indication of market neutrality and information on the eligible universe of eligible bonds. Thus Matikainen, Campiglio, and Zenghelis (2017, 17) remark that “62.1 percent of ECB corporate bond purchases take place in the sectors of manufacturing and electricity and gas production, which alone are responsible for 58.5 percent of Eurozone area greenhouse gas emissions, but only 18 per cent of gross value added (GVA). For the Bank of England, manufacturing and electricity production—responsible for 52 percent of UK emissions—make up 49.2 percent of the eligible benchmark, but only 11.8 percent of GVA.”

16. Conservative legal opinion suggests another reason. To quote Mersch (2018): The ECB’s “use of monetary policy tools needs to be *necessary, suitable, and proportionate* to achieving [its] aim.... The [Asset Purchase Program] is a tool for macroeconomic stabilization, not for microeconomic reallocation. Deviating from market neutrality and interfering with economic policy risks exposing the ECB to litigation.” The reference in a previous section to Rawls’ veil of ignorance permits the thought that, unlike climate change, true “microeconomic reallocation” is not visible through that veil.

17. Schoenmaker (2019) elaborates a proposal that would involve a tilting of the ECB’s purchases away from carbon-intensive firms so that low-carbon firms would see a lowering of their bond yields by 4 basis points. A standing arrangement, perhaps applied also to the ECB’s collateral framework, would offer an incentive for firms to reduce emissions in order to obtain cheaper financing.

18. Corporate bond purchases are only a part of overall QE. The wider programs have had much larger effects. For example, the Public Sector Purchase Program of the ECB of 2015–18 was estimated by Andrade et al. (2016) and De Santis (2019) to have lowered government bond yields by 45–70 basis points. Chadha and Hantzsche (2018)

investment grade bonds also saw a decline in yield of about 10 basis points, leaving a differential effect of about 15 basis points.¹⁹ Euro-denominated bond issuance by eligible issuers accelerated following the scheme's introduction, with some substitution by such issuers away from bank financing and foreign currency financing. Yields for noninvestment grade bonds and bank financing conditions for ineligible firms also eased. Fifteen basis points is not an altogether negligible reduction, but needs to be seen in the context of a 500 basis point fall in yields since 2008.

As is well understood, as long as asset purchases are confined to widely traded securities of large companies, the practical impact of a socially responsible or ESG filter is going to be limited—and this is likely to be true even at the scale of central bank purchases (as long as they do not thoroughly crowd out private investment) (cf. Boatright 2014, 154).

Traditional expansionary monetary policy, operating through short-term policy interest rate adjustments, would also have lowered bond yields for all investment grade firms, carbon intensive or not. From that traditional perspective, the point made by environmentalist critics is seen as saying in effect that the ECB failed to take the opportunity to target carbon-intensive firms, an opportunity that was presented by the circumstance (resulting from the policy rate being at or close to its lowest feasible level) that the expansion was effected by the “unconventional” tool of bond purchasing. Recognition of the true, but neglected, long-term financial risks associated with such assets undermines this traditional perspective. Besides, achieving policy impacts generally requires discrimination; by introducing some ESG investment restrictions, a policy goal favored by many would have been advanced, at least somewhat.

The monetary policy tools of central banks can have powerful effects on short- and long-term interest rates, on inflation, and on aggregate economic demand. Their ability to affect distributional issues is more limited.

The consequences of monetary policy action on inequality are complex—more so than is often supposed—but the net effects on simple measures of inequality of the exceptional postcrisis period of monetary expansion at the lower bound of interest rates have not been large, relative to a “do nothing” strategy. An alternative monetary-fiscal mix, with less fiscal contraction coming out of the downturn, still against the background of an expansionary monetary policy, would have allowed even the more stressed governments to achieve lower inequality (and a more rapid growth recovery) without risking loss of market access. Institutional arrangements to support such a package deserve further consideration in case a comparable situation arises again.

It seems unlikely that use of various tools of monetary policy in recent years has had any significant impact on climate change. This would still be true if asset purchase policy had been tilted away from the securities of carbon-intensive firms, relative to the broadly market-neutral strategy actually followed. The comparatively meager effect has limited for many the moral intensity of this particular policy choice (de Bruin 2014, 6).

find even larger effects, on the order of 200 basis points. Lower-rated (but still investment grade) government bonds tended to benefit more than AAA bonds.

19. This may be compared with the 7 basis point reduction in bank loan interest rates obtained by firms whose loans were eligible as security for ECB bank lending during the crisis (Mésonnier, O'Donnell, and Toutain 2017).

Nevertheless, central banks that have bought private securities as part of their monetary policy are behind the curve in this dimension and, in their attempt to be market neutral, risk being seen as opposed to a growing consensus for the need for private and public actions to address climate change. The opportunity for signaling endorsement of this consensus has not yet been seized. To protect their public standing they should seek a way of rejoining a more centrist position in preparing for any new round of asset purchases; this too should be possible without compromising their independence from government—and indeed could ultimately strengthen broad support for that independence.

It seems fair to say that inequality and climate change received little attention from central bankers in their application of monetary policy tools, whether in the boom years or during the crisis years when aggressive monetary policy expansion, including the reintroduction of “unconventional” measures, drew attention to unfamiliar channels of impact.²⁰ This now should be corrected, through both deeper analysis of the channels of effect and consideration of side effects in the choice of policy mixes. Where the selection of measures that might reduce inequality or moderate climate raises concerns that the central bank is arrogating powers not sanctioned for it, central banks need to find ways of interacting with government to secure the necessary legitimacy without becoming a quasi-fiscal agency or losing the essential independence that protects monetary policy from fiscal dominance.

PRACTICAL STEPS

By early 2019, net QE purchases had ceased in most central banks, but many were still reinvesting maturing assets and interest rates were still at exceptionally low levels; subsequently (September) the ECB announced a restart of its QE program, albeit at a lower volume.

Although, in net terms, the unusually expansive monetary policy measures introduced by central banks to deal with the macroeconomic turmoil of the crisis cannot be considered to have had severe unwarranted effects on either inequality or climate change, this discussion reveals the potential for improvements in the way central banks deal with these and other aspects of their secondary mandates in considering future policy for periods both of ease and of tightening.

This means that they need to deepen their *understanding* of these side effects and enhance their *communication* about the wider societal impacts of their policy actions. They also need to be ready to employ a more effective mix of policy actions consistent with their secondary mandates. This could require a greater degree of coordination with government, while carefully preserving independence from short-termist pressures and avoiding fiscal dominance.

Understanding. Despite an increase in central bank research output on distributional issues in the past few years, central banks still know much less about these issues than they do about areas closer to their core mandate. More research would deepen their knowledge of the trade-offs between different elements of the toolbox, leading to a more comprehensive and granular understanding of the impacts of monetary policy on inequality and climate

20. Fontan et al. (2016) provide a review of official statements from some leading central bankers on questions of inequality.

change. With their ability to access detailed information on credit allocation and the flows of funds, and their formidable capacity to analyze systemic effects, central banks are well positioned to estimate the distributional side effects of different policy mixes.²¹ This is a prerequisite for policy action whether by the central bank itself or by government seeking to take well-targeted offsetting tax, spending, and regulatory policies.²²

Communication. Central banks could do more to ensure that they have communicated adequately with the public about side effects of monetary policy. They can exploit this dialogue, including with legislature and government, to ensure that, where there are competing alternatives with regard to the side effects of their policy choices, these choices are consistent with prevailing societal norms and general economic policies. There could be regular reporting by the central bank to government on all important side effects of monetary policy, including impacts on income and wealth distribution and climate change. This would help bridge the legitimacy gap between the central bank and democratic structures, but would need to be carefully structured to ensure that the central bank retains the necessary instrument independence to deliver on its core mandate.

Action on Climate Change

On climate change the case for action seems clear. To begin with, central banks would do well to prepare for the next round of QE by ensuring that their risk management rules live up to the expectations that they are setting for private financial firms as far as climate change is concerned. Accordingly, this could disqualify or downgrade certain issuers from bond purchase programs to the extent that the associated long-term risks were assessed as dragging their credit quality below what the rating agencies currently record. Even though the ECB has restricted itself to bonds of highly rated companies, adding a climate change filter could eliminate some of them from consideration on pure financial risk grounds.²³ The same could apply to eligibility as collateral in ECB refinancing operations.

Although, by adopting a neutral formulaic approach to the choice of assets to be purchased, the central bank avoids exceeding its mandate by influencing the flow and cost of financing to particular firms, there is more. The concept of neutrality need not be one of aligning the bought portfolio with market shares. Given the secondary mandate to support other aspects of public policy, a clear societal preference for an alternative formula should be accommodated by the central bank, provided it is not so restrictive as to hamper the success of the primary policy goal. The practical problem for most central banks is to identify such a formula. For one thing, to the extent that public regulatory and tax policy reflects society's goals for different economic sectors, it might not be necessary or appropriate for the central bank to seek to achieve these goals by further differentiation. And asking

21. Recent efforts in this direction include the Federal Reserve's annual Report on the Economic Well-Being of US Households, started in 2013, and the ECB's Household Finance and Consumption Survey carried out around 2010 and again around 2014. For climate change, Krogstrup and Oman (2019) is illustrative.

22. Though it's worth remembering that governmental policies may not be available to offset the distributional consequences of events in the financial sector. Government might not have the fiscal headroom to cope, as was evidenced when Ireland and Iceland were dealing with problems of postcrisis overindebtedness (Honohan 2019). More generally, distributional impacts can be highly complex with winners and losers who cannot be clearly identified.

23. Monnin (2018) reviews methodologies that are being developed for climate change risk and shows an example of how as many as one in twenty of the securities purchases by the ECB might fail to reach an investment grade rating on such a modified scale.

the government for an explicit list of preferred firms to be included in a QE program clearly risks drawing the central bank into the kind of quasi-fiscal operation that central banks are anxious to avoid.

Nevertheless, if they are to ensure public approval for their action, central banks should encourage and facilitate public debate with a view to improving on the existing neutral formula. While the practical impact of a new formula on the financing of large carbon-intensive firms might be small, such a consultation could enhance the central bank's standing as an agency responsive to public policy goals.²⁴ The central bank would thus be aligned with, and reinforce, the signaling of other public bodies on these important matters.

Should one go further, for example envisaging guidelines from government or legislature for the use of certain policy tools?²⁵ This is the *ne plus ultra* for many theoreticians.²⁶ Yet it is clear (as pointed out for example by Tucker 2018) that central banks have always needed to refer back to government when considering unusual policies, notably in cases where there is a threat to public funds.²⁷ Defining the potential scope for such guidelines and ensuring that governments and legislatures do not overstep the purpose of such guidelines to the extent of hampering or compromising the central bank's ability to deliver on its core mandate is a tricky task. Perhaps the risks of opening this Pandora's Box are too great: one can easily imagine the guidelines becoming an ever more constraining web inhibiting effective monetary policy and diverting attention away from the primary mandate to matters on which, as discussed, the tools of the central bank may not really have very much practical impact. Still, guidelines might be no more than statements of policy orientation that would trigger a requirement for the central bank to give an account of what consideration it has given to ensuring that, where choices are possible, it has made a choice of mix that works with the grain of the policy orientation.

24. The Norwegian Government Pension Fund Global operates under ethical guidelines that exclude a number of firms, including those involved substantially in coal production. An advisory council produces a negative list of firms—about 130 of them worldwide—whose securities are precluded. The ECB has bought securities of one of these firms, Airbus, which is precluded from Norwegian fund because of its involvement in the production of nuclear weapons.

25. This could even extend to a requirement of preapproval from the government or legislature for the use of certain particularly sensitive tools. This is the situation, for example, in the United Kingdom and New Zealand, where borrower-level macro-prudential rules require government approval; in Ireland, the legislature has a period of weeks after the introduction of such measures by the central bank, within which the measures can be rescinded. Other countries have established financial stability committees that make decisions on such macroprudential matters and in which the central bank has a voice, but not necessarily the preeminent one. Inertial bias is a particular danger with such committees (Edge and Liang 2019).

26. Indeed, this comes very close to violating the EU Treaty prohibition on governments seeking to direct monetary policy actions. Cf. Article 7 of the ECB statute: "neither the ECB, nor a national central bank, nor any member of their decision-making bodies shall seek or take instructions from Union institutions, bodies, offices or agencies, from any government of a Member State or from any other body. The Union institutions, bodies, offices or agencies and the governments of the Member States undertake to respect this principle and not to seek to influence the members of the decision-making bodies of the ECB or of the national central banks in the performance of their tasks."

27. Tucker (2018, 547) calls for more than guidance, remarking that "where a delegated policy regime lacks clear objectives, accountability has no anchor, drifting with the political tides." He mentions with approval the fact that the Bank of England's monetary policy remit provides that where monetary policy "instruments involve unconventional interventions in specific markets or activities, with implications for credit risk or credit allocation," the Bank of England should "work with the government to ensure the appropriate governance arrangements are in place to ensure accountability in the deployment of such instruments." The introduction of this provision reflected parliamentary dissatisfaction with the covert nature of the bank's emergency liquidity assistance support for major British banks in 2008.

And What about Helicopter Money?

Finally, as already mentioned, one could imagine circumstances where asset purchases (QE) by the central bank accompanied by an increase in government spending would maintain macroeconomic stability with a better distributional outcome than if there were no increase in government spending.²⁸ If the central bank believed that such circumstances prevailed, there could be the basis for an understanding whereby the central bank would provide assurances of continued asset purchases, thus limiting the interest rate consequences of deficit spending unaccompanied by central bank purchases. This could be especially valuable when a government has limited fiscal headroom.

Clearly, the risk in this exercise—of helicopter money through the budget—is of allowing fiscal dominance to creep in. It would therefore be essential for the central bank to retain autonomy and policy initiative in this dialogue, and to remain strictly within its mandate.²⁹ Recent proposals point to how this might be done (Bolton et al. 2019, Bartsch et al. 2019). The most effective arrangements would vary depending on national institutional structures.³⁰

Collaboration on an agreed fiscal-monetary policy combination need not be an abdication of central bank independence.³¹ There is, of course, no guarantee that even democratic governments would choose to use the extra headroom to enhance inequality-reducing policies. It should also be borne in mind that the macroeconomic conditions that might warrant such action are unlikely to persist: the helicopter service will not be regular.

At the time of writing, the ECB finds itself at, or close to, the effective lower bound on interest rates and is restarting QE, with inflation still tracking below target and the euro area economy weakening. Under these circumstances, President Mario Draghi (2015) has repeatedly called for additional fiscal spending. Should the ECB not go ahead on its own and make unrequited distributions of cash to the general public? As discussed, this would be economically equivalent to a fiscal deficit used to finance government grants, so why not do it? The decision not to do so reflects a combination of the ethical and political considerations adumbrated above, centering on the democratic legitimacy of such an action and the realization that it would be seen as an illegitimate overreach to be countered, if not by law, then by energetic political reaction by governmental authorities who do not agree with the need for such action. Lacking a clear mandate, the safest, most effective, and arguably

28. As to whether such action would enhance the impact of deficit financing on aggregate spending, some authors have presented models purporting to show that there would be no effect (the debate is exemplified by Borio, Disyatat, and Zabai 2016; Buitier 2014; Reis 2019). Models that take account of the existence problem of liquidity constraints that affect both governments and low-income (“hand-to-mouth”) households in recessionary conditions show how effective such policies can be; the same is true of models with nominal rigidities (cf. Galí 2014).

29. Here the central bank would be the Stackelberg follower: stating its intentions but conditioning its actions on government compliance with its side of the envisaged fiscal-monetary package. In his brief discussion of such an arrangement, Tucker (2018, 494) concludes that “it is hard to be confident that the central bank would retain the de facto autonomy to back out of the arrangement if it had become a familiar part of the scene and an elected government was determined to continue.”

30. Muellbauer (2014) makes the interesting, if somewhat subtle, point that having a credible central bank, rather than the government, make the payments could reassure markets that fiscal dominance had not taken over.

31. A similar monetary-fiscal collaboration, though with the opposite aim, took place in the United Kingdom in 2009, when the UK Treasury agreed *not* to increase its issuance of bonds in response to QE purchases by the Bank of England. One way or another, some form of coordination is needed if overall policy is to be coherent when QE is present (Tucker 2018, 492).

most ethical course for the central bank under such circumstances is to rely on analysis and advice rather than on precipitate and potentially counterproductive activism.³²

CONCLUSION

Central banks should pay more attention to issues of income and wealth inequality and of climate change than has been evident until recently. Still, recent central bank policies seem to have had much less of a net adverse impact in these areas than is supposed by some critics. Government fiscal and regulatory policies are much more powerful tools to achieve goals in these and other dimensions on which monetary policy can have side effects.

As far as climate change is concerned, if central banks applied, to their own bond purchases, the new approach to climate-related financial risk that they are pressing on private bankers, they would reduce their purchases of bonds issued by carbon-intensive firms. Furthermore, their ongoing research into the impact of financial sector activities on climate-related economic risks could inform government tax or regulatory policies more effectively focused on reducing such risks.

Direct helicopter money cash transfers to the general public (in lieu of QE asset purchases) are considered a step too far by almost all central bankers. Yet, when faced with the recessionary conditions calling for expansive tools of monetary ease, and when fiscal expansion to help restore macroeconomic balance is needed, central banks should be prepared to do more. They should in particular be willing to employ the tools sanctioned by their mandate to ensure that progressive, inequality-reducing measures of fiscal expansion on a scale appropriate to macroeconomic conditions would not be choked off by an adverse financial market reaction. This would require great care in achieving a degree of fiscal-monetary coordination without slipping into fiscal dominance. Even without the central bank taking any direct hand in financing such measures, though, the effect could amount to helicopter money through the budget.

Government neglect of the impact of macroeconomic and structural change on income and wealth distribution partly reflects the complexity of the issue and the fact that it has not received the research attention that it deserves. Central banks collect and analyze micro-level data in support of their main objectives. As a side effect of this effort, they could do more to explore the scope and impact of other potential government policies that could prevent undesirable developments in income and wealth distribution.

Such activities are not only fully in line with the secondary goals established for most central banks in their mandates. They can also be exercised by central banks in full independence. Indeed, by emphasizing to the general public their commitment to the general good, such efforts do not represent an overreach of central bank powers, but should help underpin society's support for the independence that is essential for them to deliver on their main macroeconomic goals.

32. Inequality campaigners might be disappointed if they assume that such central bank quasi-fiscal activism (designed to replace fiscal action for stabilization purposes) would be designed in such a way as to be strongly equalizing.

REFERENCES

- Adam, Klaus, and Panagiota Tzamourani. 2016. Distributional Consequences of Asset Price Inflation in the Euro Area. *European Economic Review* 89: 172–92.
- Ampudia, Miguel, Dimitris Georgarakos, Jiri Slacalek, Oreste Tristani, Philip Vermeulen, and Giovanni L. Violante. 2018. *Monetary Policy and Household Inequality*. ECB Working Paper Series No. 2170. Frankfurt: European Central Bank.
- Andrade, Philippe, Johannes Breckenfelder, Fiorella De Fiore, Peter Karadi, and Oreste Tristani. 2016. *The ECB's asset purchase programme: an early assessment*. ECB Working Paper Series No. 1956. Frankfurt: European Central Bank.
- Auclert, Adrien. 2019. Monetary Policy and the Redistribution Channel. *American Economic Review* 109, no. 6: 2333–67.
- Bagchi, Sutirtha, Michael Curran, and Matthew J. Fagerstrom. 2019. Monetary growth and wealth inequality. *Economics Letters* 182: 23–25.
- Bahaj, Saleem, and Ricardo Reis. 2018. Central Bank Swap Lines. CEPR Discussion Paper 13003. London: Centre for Economic Policy Research.
- Ball, Laurence, Joseph Gagnon, Patrick Honohan, and Signe Krogstrup. 2016. *What Else Can Central Banks Do?* Geneva Reports on the World Economy 18. Geneva: International Center for Monetary and Banking Studies and London: Centre for Economic Policy Research.
- Bartsch, Elga, Jean Boivin, Stanley Fischer, and Philipp Hildebrand. 2019. *Dealing with the next downturn: From unconventional monetary policy to unprecedented policy coordination*. New York: BlackRock Investment Institute. Available at www.blackrock.com/us/individual/literature/whitepaper/bii-macro-perspectives-august-2019.pdf.
- Bivens, Josh. 2015. *Gauging the Impact of the Fed on Inequality during the Great Recession*. Working Paper 12. Washington: Hutchins Center on Fiscal and Monetary Policy. Washington: Brookings Institution.
- Boatright, John R. 2014. *Ethics in Finance*, 3d ed. Chichester: John Wiley.
- Bolton, Patrick, Stephen Cecchetti, Jean-Pierre Danthine, and Xavier Vives. 2019. *Sound at Last? Assessing a Decade of Financial Regulation*. Navarra: IESE; and London: CEPR.
- Boneva, Lena, David Elliott, Iryna Kaminska, Oliver Linton, Nick McLaren, and Ben Morley. 2019. The impact of QE on liquidity: evidence from the UK Corporate Bond Purchase Scheme. Bank of England Staff Working Paper No. 782. Available at www.bankofengland.co.uk/-/media/boe/files/working-paper/2019/the-impact-of-qe-on-liquidity-evidence-from-the-uk-corporate-bond-purchase-scheme.
- Bordo, Michael David. 1983. Some Aspects of the Monetary Economics of Richard Cantillon. *Journal of Monetary Economics* 12: 235–58.
- Borio, Claudio, Piti Disyatat, and Anna Zabai. 2016. Helicopter Money: The Illusion of a Free Lunch. Voxeu.org, May 24.
- Buiter, Willem H. 2014. The Simple Analytics of Helicopter Money: Why It Works – Always. *Economics: The Open Access, Open Assessment E-Journal* 8: 2014–28.
- Bunn, Philip, Alice Pugh, and Chris Yeates. 2018. *The Distributional Impact of Monetary Policy Easing in the UK between 2008 and 2014*. Bank of England Staff Working Paper No. 720. London.
- Brunnermeier, Markus K., and Yuliy Sannikov. 2012. Redistributive Monetary Policy. In *The Changing Monetary Landscape* (Proceedings of the Jackson Hole Symposium), 331–84. Federal Reserve Bank of Kansas City.
- Caballero, Ricardo J., and Emmanuel Farhi. 2018. *The Safety Trap*. NBER Working Paper 19927 and *Review of Economic Studies* 85, no. 1: 223–74.
- Carney, Mark. 2015. Breaking the tragedy of the horizon—Climate change and financial stability. Speech given at Lloyd's of London, September 29, Bank of England. Available at www.bankofengland.co.uk/-/media/boe/files/speech/2015/breaking-the-tragedy-of-the-horizon-climate-change-and-financial-stability.pdf.
- Carney, Mark. 2019. A New Horizon. Speech in Brussels, March 21, Bank of England. Available at www.bankofengland.co.uk/-/media/boe/files/speech/2019/a-new-horizon-speech-by-mark-carney.pdf.
- Chadha, Jagjit S., and Arno Hantzsche. 2018. *The Impact of the ECB's QE Programme: Core versus Periphery*. National Institute of Economic and Social Research. Available at www.euroframe.org/files/user_upload/euroframe/docs/2018/Conference/Session%208/EUROF18_Chadha_Hantzsche.pdf.
- Coibion, Olivier, Yuriy Gorodnichenko, Lorenz Kueng, and John Silvia. 2017. Innocent Bystanders? Monetary Policy and Inequality in the U.S. NBER Working Paper 18170 and *Journal of Monetary Economics* 88, no. C: 70–89.
- Colciago, Andrea, Anna Samarina, and Jakob de Haan. 2019. Central Bank Policies and Income and Wealth Inequality: A Survey. *Journal of Economic Surveys* 33, no. 4.

- Cœuré, Benoît. 2018. Monetary policy and climate change. Speech in Berlin, November 8. Available at www.ecb.europa.eu/press/key/date/2018/html/ecb.sp181108.en.html.
- Cukierman, Alex. 2019. The Impact of the Global Financial Crisis on Central Banking. In *The Oxford Handbook of the Economics of Central Banking*, ed. David G. Mayes, Pierre L. Siklos and Jan-Egbert Sturm. Oxford University Press.
- de Bruin, Boudewijn. 2014. *Ethics and the Global Financial Crisis: Why Incompetence Is Worse than Greed*. Cambridge University Press.
- De Santis, Roberto A. 2019. Impact of the asset purchase programme on euro area government bond yields using market news. *Economic Modelling*. Available online June 28.
- De Santis, Roberto A., André Geis, Aiste Juskaite, and Lia Vaz Cruz. 2018. The impact of the corporate sector purchase programme on corporate bond markets and the financing of euro area non-financial corporations. *ECB Economic Bulletin* 2018/03.
- Dietsch, Peter, François Clavet, and Clément Fontan. 2018. *Do Central Banks Serve the People?* Cambridge: Polity Press.
- Domanski, Dietrich, Michela Scatigna, and Anna Zabai. 2016. Wealth Inequality and Monetary Policy. *BIS Quarterly Review* (March): 45–64.
- Draghi, Mario. 2015. The ECB's recent monetary policy measures: effectiveness and challenges. Michel Camdessus Central Banking Lecture, IMF, May 14, Washington, DC.
- Edge, Rochelle M., and J. Nellie Liang. 2019. *New Financial Stability Governance Structures and Central Banks*. Hutchins Center Working Paper No. 50. Washington: Brookings Institution.
- Fontan, Clément, François Claveau, and Peter Dietsch. 2016. Central banking and inequalities: Taking off the blinders. *Politics, Philosophy & Economics* 15, no. 4: 319–57.
- Furceri, Davide, Prakash Loungani, and Aleksandra Zdzienicka. 2018. The Effects of Monetary Policy Shocks on Inequality. *Journal of International Money and Finance* 85: 168–86.
- Gali, Jordi. 2014. The Effects of a Money-Financed Fiscal Stimulus. CEPR Discussion Paper No. 10165. (*Journal of Monetary Economics*, forthcoming).
- Guerello, Chiara. 2018. Conventional and unconventional monetary policy vs. households income distribution: An empirical analysis for the Euro Area. *Journal of International Money and Finance* 85: 187–214.
- Honohan, Patrick. 2019. *Currency, Credit and Crisis: Central Banking in Ireland and Europe*. New York: Cambridge University Press.
- Krogstrup, Signe, and William Oman. 2019. *Macroeconomic and Financial Policies for Climate Change Mitigation: A Review of the Literature*. IMF Working Paper 19/185. Washington: International Monetary Fund.
- Lane, Philip R. 2019. Climate Change and the Irish Financial System. *Central Bank of Ireland Economic Letter* 2019/1.
- Lenza, Michele, and Jiri Slacalek. 2018. *How Does Monetary Policy Affect Income and Wealth Inequality? Evidence from Quantitative Easing in the Euro Area*. ECB Working Paper No. 2190. Frankfurt: European Central Bank.
- Lonergan, Eric, and Mark Blyth. 2014. Print Less but Transfer More: Why Central Banks Should Give Money Directly to the People. *Foreign Affairs* 93, no. 5: 98–109.
- Matikainen, Sini, Emanuele Campiglio, and Dimitri Zenghelis. 2017. *The Climate Impact of Quantitative Easing*. Policy Publication. Grantham Research Institute of Climate Change and the Environment, London School of Economics and Political Science.
- Mersch, Yves. 2016. Monetary policy in the euro area: scope, principles and limits. Speech at Natixis Meeting of Chief Economists, Paris, June 23. Available at www.ecb.europa.eu/press/key/date/2016/html/sp160623.en.html.
- Mersch, Yves. 2018. Climate change and central banking. Speech at Workshop discussion: Sustainability is becoming mainstream, Frankfurt, November 27. Available at www.ecb.europa.eu/press/key/date/2018/html/ecb.sp181127.en.html.
- Mésonnier, Jean-Stéphane, Charles O'Donnell, and Olivier Toutain. 2017. *The Interest of Being Eligible*. Banque de France Working Paper 636. Paris: Banque de France.
- Monnin, Pierre. 2018. *Integrating Climate Risks into Credit Risk Assessment Current Methodologies and the Case of Central Banks' Corporate Bond Purchases*. Council on Economic Policies Discussion Note 2018/4. Zurich: Council on Economic Policies.
- Montecino, Juan, and Gerald Epstein. 2015. *Did Quantitative Easing Increase Income Inequality?* Working Paper Series No. 28. New York: Institute for New Economic Thinking.
- Muellbauer, John. 2014. Combatting Eurozone Deflation: QE for the People. Voxeu.org, December 23. Available at <https://voxeu.org/article/combating-eurozone-deflation-qe-people>.

- NGFS (Network for Greening the Financial System). 2019. *A call for action: Climate change as a source of financial risk*. Available at www.banque-france.fr/sites/default/files/media/2019/04/17/ngfs_first_comprehensive_report_-_17042019_0.pdf.
- Obstfeld, Maurice. 2019. *Global Dimensions of U.S. Monetary Policy*. NBER Working Paper No. 26039. Cambridge, MA: National Bureau of Economic Research.
- O'Farrell, Rory, Łukasz Rawdanowicz, and Kei-Ichiro Inaba. 2016. *Monetary Policy and Inequality*. OECD Economics Department Working Papers 1281. Paris: OECD.
- Reichlin, Lucrezia, Adair Turner, and Michael Woodford. 2013. Helicopter Money as a Policy Option. Voxeu.org, September 23. Available at <https://voxeu.org/article/helicopter-money-policy-option>.
- Reis, Ricardo. 2019. Can the Central Bank Alleviate Fiscal Burdens. In *The Oxford Handbook of the Economics of Central Banking*, ed. David G. Mayes, Pierre L. Siklos, and Jan-Egbert Sturm. Oxford University Press.
- Saiki, Ayako, and Jon Frost. 2018. *Japan's Unconventional Monetary Policy and Income Distribution: Revisited*. TCER Working Paper E-126. Tokyo: Tokyo Center for Economic Research.
- Saiki, Ayako, and Jon Frost. 2019. *Unconventional Monetary Policy and Inequality—Is Japan Unique?* Council on Economic Policies Working Paper 2019/2. Zurich: Council on Economic Policies.
- Samarina, Anna, and Anh D. M. Nguyen. 2019. *Does Monetary Policy Affect Income Inequality in the Euro Area?* De Nederlandsche Bank Working Paper No. 626. Amsterdam: De Nederlandsche Bank.
- Schoenmaker, Dirk. 2019. *Greening Monetary Policy*. CEPR Discussion Paper No. DP13576. Available at <https://voxeu.org/article/greening-monetary-policy>.
- Shirai, Sayuri. 2018. *Bank of Japan's Exchange-Traded Fund Purchases as an Unprecedented Monetary Easing Policy*. Asian Development Bank Institute Working Paper 865. Tokyo: Asian Development Bank Institute.
- Tucker, Paul. 2018. *Unelected Power: The Quest for Legitimacy in Central Banking and the Regulatory State*. Princeton, NJ: Princeton University Press.
- World Bank. 2001. *Finance for Growth: Policy Choices in a Volatile World*. New York: Oxford University Press and Washington: World Bank.