Risks to Central-Bank Independence

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Central banking today faces a number of existential challenges. On the political side, and particularly after the financial crisis, the public has come to expect central banks to take on a dizzying array of responsibilities, some far beyond their power or remit. These include everything from enhanced financial regulation to quasi-fiscal policy to mitigating economic inequality. Some recent populist proposals appear to be based on the presumption that central banks can issue large quantities of bank reserves indefinitely without any long-term inflationary or tax consequences. On the technocratic side, many central banks struggle with the trend decline in global real interest rates that steepened notably in the aftermath of the financial crisis. This decline has, in many cases, left the monetary authorities with little space to cut policy interest rates in the event of steep recession, much less in a financial crisis, and trying to put the best public face possible on much weaker "alternative monetary instruments," such as quantitative easing (QE). At the same time, the fact that many "alternative monetary instruments" are in fact forms of fiscal policy—that could be implemented just as well or even better by finance ministries—has made the challenge of preserving central-bank independence against strong political headwinds even harder.

This paper aims to give an overview of the challenges and to suggest possible ways forward. I would like to highlight especially two issues closely related to my own both distant and recent work. First, I would like to argue that, while it is true that central banks have been to some extent victims of their own success—inflation has fallen dramatically over the last 30 years in virtually every country

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in the world—, they have also been victims of their own dogmatism. This dogmatism, which I have termed elsewhere as "inflation-targeting evangelism," has left too little flexibility for dealing with outside-the-box events or "Knightian uncertainty" in economics jargon. Second, many central banks have been too slow and too reluctant to recognize that changes in the payments and financial environment affords them the possibility of essentially eliminating the effective lower bound on interest rates that hamstrings monetary policy today and may well impinge over long periods in the future.

Let me begin with a brief history of credibility and central-bank policy, starting with my 1985 paper on "The Optimal Degree of Commitment to an Intermediate Monetary Target," which first circulated as an IMF working paper in 1982. This paper introduced the idea of instituting an independent central bank as a solution to the time-consistency problem highlighted by Kydland and Prescott (1977) and Barro and Gordon (1981). It was difficult to publish this paper because, at the time, the idea that there could be an institutional solution to the monetary-policy credibility problem was not the direction of travel in the literature, which instead concentrated on using ever-more sophisticated game theory constructs. Referees commented that, since all political economy is one big supergame, an "independent" central bank is merely a superficial veil that the government could strip away whenever convenient. The idea that the creation of an independent central bank could create useful frictions and barriers to government interference and that this might be enough to constitute meaningful independence was not yet widely accepted, although of course it is now taken for granted.

My 1985 paper is sometimes referred to as "the conservative central-banker paper" because, as one illustrative example, it demonstrates how in some instances society can benefit by appointing an agent to head the central bank who places a greater weight on inflation stabilization than on society as a whole. Despite the fact this distorts the central bank's response to shocks, it also serves to enhance anti-inflation credibility thereby lowering the profile of interest rates.

But, as the title of the paper indicates, the main thrust of the analysis was about all the kinds of rules the central bank could adopt to retain stabilization capacity while enhancing anti-inflation credibility. The paper not only introduces inflation targeting but also considers a range of other options, from nominal GDP targeting to money-supply rules to interest-rate rules.

An absolutely central conclusion is that, in any realistic model, there is a fundamental tradeoff between credibility and flexibility or, put differently, between flexibility and commitment. In any given period, the central bank would like to have free rein to choose stabilization policy as needed but, at the same time, if the public believes the government will abuse this privilege in the future, it will lead to higher interest rates and inflation. As an example of how misguided it is to dogmatically focus on one model of the economy—and therefore implement a rule that is too inflexible—, the paper discusses how it would have been a mistake to enshrine Milton Friedman's fixed-money-supply-growth rule into the U.S. constitution, as he had advocated. Brilliant as he was, Friedman did not forsee the radical changes that would take place in payment systems that would make the demand for the monetary base extremely unstable. In the simple model in my 1985 paper, the credibility versus commitment tradeoff translated into placing only a finite weight on achieving the rule, leaving room for discretion. In equilibrium, this leads to a modest inflationary bias (or, with different parameters, deflationary bias). Since then, much richer and deeper interpretations of this tradeoff have been analyzed. For example, Flood and Isard (1989) and Lohman (1992) offered an alternative and potentially more flexible approach involving an escape clause, which they defined as being triggered by a shock above a specified magnitude, but might potentially be reinterpreted as allowing for Knightian uncertainty[1] By the way, my analysis treated the socially desirable inflation rate as a parameter that might potentially change over time, say, with measurement changes or index changes.

Back in 1985, only a very small number of countries had meaningfully independent central banks. Since then, central-bank independence—in some form—has become the international norm, not only in advanced economies but also in emerging markets and even in many developing economies. And there is strong evidence to suggest this development helped produce the worldwide decline in inflation that followed. Parenthetically, one can argue that a major reason why so many countries were eager to adopt the euro in the last 1980s and 1990s was the belief that it would deliver their countries German-level inflation. Yet, it now seems apparent that if the euro had never been formed, and if countries such as Spain, Italy, Portugal, and Greece had instead instituted independent central banks while

1. For the state of the art in this literature, see Halac and Yared (2019).

retaining their own currencies, they would have likely achieved the much lower inflation without the straightjacket of the euro.

Later on, however, a literature evolved arguing that there was no tradeoff between flexibility and commitment, most notably the influential work of Taylor (1993) and later Svensson (1996). If the central bank chose the right rule (Taylor's has the advantage of simplicity, while Svensson's algorithm is more general but more complex), there did not have to be a meaningful tradeoff. These are both towering contributions; for example, virtually every central-bank research department has explored Taylor rules even if the results were not always made public. But events of the past decade have undermined this view that central banks should always stick to a rule without an escape clause to deal with outside-the-box events such as financial crises. As for the Taylor rule, it has become increasingly clear that Taylor's (1993) target policy interest rate of four percent is too high and, even more importantly, present circumstances dictate that there should be at least double the weight on output deviations than on inflation deviations. Had the central bank been legally bound to follow the original rule, it would have been highly problematic the past fifteen years, albeit perhaps less so than Friedman's fixed money rule. Indeed, any reasonable rule needs to allow for changing parameters, but then of course, that opens the door to the more opportunistic inflation that Kydland and Prescott (1977) and Barro and Gordon (1983) were concerned with. Svensson's forecast targeting is more flexible (albeit requiring vastly more central-bank transparency to make it credible), but on the other hand, it has many issues of its own (Kozicki, 2019).[2] Svensson (2019) now notes that, in some circumstances, an escape clause must be explicitly considered, which brings us back full circle to Lohman (1992), Flood and Isard (1989), and the tradeoff between flexibility and commitment emphasized by Rogoff (1985). In my view, central banks' failure to quickly activate an escape clause during the 2008 financial crisis helped contribute to the depth and duration of the recession.

On top of these technical policy challenges is the threat, and in some cases the stark reality, of creeping political interference in central-bank policy. Central banks have long been under assault from the right for expanding their balance sheets too much during the financial crisis, but now they are under attack from the ascendant left for expanding their balance sheets too little.

2. Available at https://www.chicagofed.org/~/media/others/events/2019/monetary-policy-conference/2-kozicki-comments-strategies-pdf.pdf

This is a remarkable shift. Not too long ago, central-bank independence was celebrated as one of the most effective policy innovations of the past four decades, owing to the dramatic fall in inflation worldwide. Recently, however, an increasing number of politicians believe that it is high time to subordinate central banks to the prerogatives of elected officials. On the right, U.S. President Donald Trump and his advisers routinely bash the U.S. Federal Reserve for keeping interest rates too high. On the left, former British Labour leader Jeremy Corbyn famously called for "people's quantitative easing" to provide central-bank financing for government investment initiatives. The "Modern Monetary Theory" (MMT) is an idea in the same vein.

There are perfectly healthy and legitimate discussions to be had about circumscribing the role of central banks, particularly when it comes to the large-scale balance-sheet operations (such as post-crisis quantitative easing) that trespass into fiscal policy. However, if governments undercut central banks' ability to set interest rates to stabilize inflation and growth, the results could be dangerous and far-reaching. If anti-inflation credibility is lost, governments may find it very difficult—if not impossible—to put the genie back in the bottle.

Complicating matters further, central bankers must figure out how to give normal monetary policymaking teeth at the zero lower bound, given today's ultra-low inflation and real interest rates. The current reliance on quasi-fiscal policies is not only ineffective outside crisis situations where markets breakdown but also dangerous because it lends weight to the argument that finance ministries should have more control over central banks.

Indeed, the primary challenge confronting central banks is not that they are too powerful, but that some see independent montary policy as losing relevance. Inflation has been so low for so long that many have forgotten what it was like before independent central banks were established to rein in double-digit price growth. Instead, it has become increasingly popular to argue that low inflation is a hardwired feature of the twenty-first-century economy. And yet the complacent dismissal of future inflation risks—and thus of the need for central-bank independence—has all the hallmarks of the "this time is different"[3] mentality that has been a recurrent feature of economic history.

3. Available at https://press.princeton.edu/books/paperback/9780691152646/this-time-is-different

1. Four Challenges for Modern Central Banks

Central banks today face four main challenges. First, global inflation has been so low for so long that people have started to forget what it was like in the pre-central-bank-independence era. Second, monetary paralysis at the effective lower bound on interest rates has greatly limited the effectiveness of monetary stabilization policy in normal recessions. (One must acknowledge there is some debate about this.) For example, there is a wide range of estimates over the effectiveness of quantitative easing and, equally importantly, whether finance ministry actions ultimately dominate central-bank actions when it comes to debt maturity of the consolidated government balance sheet. But, over time, it has increasingly come to be recognized that neither QE nor forward guidance is responsible for the trend decline in global real interest rates. (Even within the U.S. Fed, estimates for the effects of QE are fading; see Chung and others, 2019.) Third, although few seriously question the importance of central-bank emergency powers should there ever be another deep systemic financial crisis, the zero bound (the effective lower bound) implies very limited capacity to stimulate a sluggish post-crisis economy. Even the most intense advocates of QE no longer pretend that it can produce the kind of impact that a 500 basis-point cut in interest rates can produce. Fourth, there is a growing view that for advanced economies, ultra-low interest rates make higher government debt a free lunch, with economic growth reliably preventing debt-to-income ratios from growing. The implication is that much higher debt can be accommodated without ever raising taxes, much less resorting to inflation, again undermining the case for having central-bank independence. I will address each of these four issues in turn.

2. Role of Central Banks in Controlling Inflation

Perhaps the greatest cause of the discontent is that independent central banks have been so successful in bringing down inflation that some now view "lowflation" as a hardwired feature of the 21st-century economy, with the services of independent central bankers no longer being required. The complacent dismissal of future risks to inflation is surely a classic example of the recurrent "this time is different" mentality" Carmen Reinhart and I chronicled in our 2009 book on the

history of debt, inflation, and financial crises.[4,5] One does not have to travel very far down memory lane to see that not so long ago high inflation roamed the earth. As recently as 1992, there were 45 countries with over 40 percent inflation.[6] In the 1970s, the United Kingdom and Japan experienced inflation in excess of 20 percent, with U.S. inflation also in double digits. What brought this era of epic inflation to an end? Yes, the influx of inexpensive Chinese imports played a role, as did the rise of computers. But if one looks at the timing of when different countries succeeded in bringing down inflation, there is little question that the most important role by far has to be assigned to the rise of central-bank independence.

Starting in the 1980s across much of Europe and spreading around the world in the 1990s, one country after another granted its central bank a significantly greater degree of independence. In 2019, despite anomalies such as Argentina and Venezuela (both countries where central-bank independence was severely compromised), global inflation is now so low—the April 2019 IMF World Economic Outlook forecasts advanced economy inflation at just 1.6 percent—that the question has become whether advanced-country central banks have the capacity to generate it again. This has been true since the 1990s in Japan, but is increasingly true around Europe as well. Even in the United States, where trend growth is higher, long-term inflation expectations derived from indexed bonds show inflation expectations going below two percent, with survey measures also showing sharp declines.

One might thank that long-term expectations of two percent inflation or below are proof that central-bank credibility has strengthened. But this does not consider that, if there is ever a severe fiscal shock—for example, a major physical or cyber conflict, a pandemic, an environmental catastrophe, or a divisive populist government that pushes fiscal limits deep into vulnerable territory—, moderate inflation could be an important safety valve. Even a small chance of inflation being near double-digit for a few years should significantly push up long-horizon expected inflation.

Counterbalancing that, and perhaps helping to explain why long-term expected inflation appears to be so low, is that markets likely

4. See Reinhart and Rogoff (2009).

5. An excellent history and overview are provided in Ha and others (2019). A much earlier study is provided in Rogoff (2003).

6. See Rogoff (2017).

recognize a significant chance that inflation will undershoot its target for very long periods. Federal Reserve economists Michael Kiley and John Roberts (2017), for example, find in their simulation that even the U.S. Federal Reserve is likely to be up against the zero bound 30–40 percent of the time (of course this estimate is sensitive to model assumptions, as Chung and others [2019] argue). Lilley and Rogoff (2019) show that fear of the zero bound is such that during many periods, including the most recent date as of this writing, markets have attached a non-zero probability to even the Federal Reserve adopting mildly negative interest rates.

3. Role of Central Banks in Macroeconomic Stabilization

Aside from maintaining low and stable inflation, a second task of most central banks is to engage in macroeconomic stabilization policy, attempting to smooth out the business cycle. Although there is never-ending controversy in the academic literature, by and large, it is widely accepted that activist monetary policy has played an important role in smoothing out post-World War II business cycles. Part of the way they have achieved this is by standing ready to sharply cut interest rates in a recession, by an average of over five percent in the case of the United States.[7] Obviously, with the European Central Bank (ECB) and the Bank of Japan already at the zero bound, and the U.S. Federal Reserve just 2.5 percent above it, cuts of this magnitude will not be possible if the next deep recession occurs anytime soon.

So, what else can monetary policy do? Much less than most observers think. The contemporary policy debate on central banking has been greatly clouded by crippling confusion over the conceptual distinction between monetary policy and fiscal policy. Central banks, not least the U.S. Federal Reserve, played their part in exacerbating this confusion by overselling and mislabeling "alternative monetary-policy instruments." In the first place, these are not nearly as effective in stimulating output and inflation as is normal interest-rate policy and, beyond that, they are really better thought of as quasi-fiscal instruments where, importantly, central banks are junior partners to Treasuries and finance ministries.

7. See Rogoff (2016) or Yellen (2016).

Early event-based studies seemed to imply that, at the zero lower bound on interest rates, central-bank purchases of long-term government bonds can have significant stimulus effects by pushing down long-term interest rates. Over time it became clear, however, that most of the action in long-term interest rates stemmed from a trend decline that had little to do with QE, and initially optimistic assessments of the effects of pure QE policies have now been sharply tempered.[8] In essence, when the central bank purchases long-term government debt by issuing overnight bank reserves that pay the same as very short-term Treasury-bill interest rates (which both happen to be zero in a liquidity trap), it is not "printing money," rather, it is maturity transformation of the consolidated government debt balance sheet. This generally has some effect, as short-term debt tends to be lower cost. However, shortening the maturity structure of government debt exposes the government to refinancing risk.[9] In any event, compared to normal interest-rate policy, the stimulus effects of maturity transformation on output and inflation appear to be of second order. And importantly for our discussion here, the role of the central bank is secondary and, to a first approximation, unnecessary. Treasuries and finance ministries can perfectly well engage in maturity transformation on their own without any help from the central bank, and they do so all the time.[10] I admit there is still debate over the issue, but I would argue that it stems largely from lingering confusion in financial markets. Indeed, Lilley and Rogoff (2019) use options data to show that in the early years after the financial crisis, markets placed a nontrivial weight on the possibility that QE might end up leading to high inflation.[11] This confusion is not likely to be repeated, especially given the now long experience of Japan and the European Central Bank, which despite massive QE programs over a very long period, have barely been able to tread water when it comes to rising inflation.

8. See Chung and others (2019).

9. Blanchard, in his 2019 American Economic Association Presidential Address, argues that the risk of runs does not much depend on the size of debts, but in the canonical models of Calvo (1988) and others it does, and for the same reasons maturity structure greatly matters as well. See, especially, Farhi and Maggiori (2018).

10. See Greenwood and others (2015).

11. Lilley and Rogoff (2019) show that during the first years of QE (through QE II and QE III), markets attached a nontrivial chance to having inflation in the U.S. exceed 100% over a ten-year period. That is, the early days of QE, markets put some weight on the assessment that QE is akin to printing mass quantities of money, and correspondingly to having very high inflation.

It was not only central banks that created confusion about the potential inflation effects of QE. It is surprising how often one reads economic commentators and even serious policy macroeconomists characterize the quantitative easing policies that central banks engaged in during and after the financial crisis as "money printing," and how difficult it is to explain to them that their ingrained knee-jerk understanding of how monetary policy is just wrong in a liquidity trap when non-interest bearing money becomes a perfect substitute for zero-interest bearing Treasury bills. An incorrect "monetary" characterization of quantitative easing led some to warn that large-scale central-bank asset purchases would inevitably cause inflation. In fact, the right way to look at QE purchases of long-dated government bonds is as a shortening of the maturity structure of consolidated government debt. Central banks may be involved in debt maturity management but, except for very short periods, central banks' actions are generally dominated by Treasuries, which can command much larger volumes, even compared to massive central-bank QE.

Most fundamentally, let us not forget that even the most independent central bank is a wholly-owned subsidiary of its country's Treasury. At the end of the day, the central-bank balance sheet is subsumed in the consolidated government balance sheet. The central bank may earn profits on seigniorage or through its asset trading (or losses), but these are fully passed onto the government after expenses. Thus, any proper definition of government debt should definitely include interest-bearing central-bank debt (or interest-bearing bank reserves). Central-bank holdings of government debt are just in-house bookkeeping entries; what actually matters are private-sector (including foreign government entities) holdings of government debt. In the United States, the Federal Reserve only issues debt (reserves) to the financial system, but in some countries, central-bank debt can be more widely held. The main instrument modern central banks genuinely control is the very short-term policy interest rate, i.e., the federal funds rate in the case of the United States.[12] Those who are still convinced that QE works perhaps

12. By tradition, most central banks also control intervention into foreign exchange markets, since otherwise "impossible trinity" implies that central banks and treasuries could be acting at cross-purposes. Of course, in the United States, the postwar Fed-Treasury accord ceded exchange-rate policy to the Treasury, but since the United States has generally been passive in its foreign exchange policy (other than verbal statements), this has not really mattered. In principle, there is no reason the Treasury cannot be fully in charge of managing foreign exchange reserves as long as it does not try to manipulate them to control the exchange rate. It should be noted that in principle, if the Treasury flooded the market with very short-term debt, it could impinge on central-bank control of the short-term policy rate.

neglect the importance of learning. Over time, markets are learning; in Japan they have learned the lesson very well.

It is, of course, another matter, when the central bank purchases private debt or private assets. In my (2016) book on the past, present, and future of currency,[13] I refer to such a transaction as "fiscal quantitative easing" as opposed to pure quantitative easing, in which the central bank buys Treasury debt. Fiscal quantitative easing may be looked at as a combination of two actions, the first in which the U.S. Treasury issues government debt and buys private debt (or equivalently guarantees private debt), and the second in which the Fed buys up the government debt (pure quantitative easing). The only difference between the two cases is bookkeeping, as in one case the Fed carries the private-sector default risk, while in the other case the central government carries the risk directly instead of indirectly.

The European Central Bank is a special case, because there is no supernational European government with taxing power sufficient to underpin a central bank. When the European Central Bank does "quantitative easing," it is in effect using the credit standing of the fiscally stronger eurozone states to subsidize borrowing from the weaker states. This is not a criticism *per se*, and in fact ECB quantitative easing policy did much to alleviate severe stress at the peak of the eurozone debt crisis. ECB quantitative easing is in many ways akin to using short-maturity Eurobonds to proportionally soak up longer-dated national debts. Put differently, the ECB QE policy of issuing reserves to buy up national debts is equivalent to creating a synthetic (very) short-term Eurobond (recalling again that short-term debt and money pay the same rate at the zero bound).

Of course, the preceding discussion focuses on cases where QE does not actually involve engaging in inflationary finance. When interest rates are above the zero bound—in "normal" times—then central-bank issuance of reserves certainly will stoke inflation *if* the reserves do not bear interest. In positive interest-rate territory, increasing high-powered money to buy up long-term government debt is like printing money and does tend to push up inflation. However, this is not the case if the reserves pay the market rate of interest, which is exactly what is happening today in many countries. For example, the U.S. Federal Reserve has been paying interest on overnight bank reserves at a rate that is slightly above one-week Treasury bills (which are slightly more liquid). So even though interest rates are now above the zero bound,

13. See Rogoff (2016).

quantitative easing (or quantitative tightening) has only a minor indirect effect on inflation since it is only maturity transformation, not money printing.

Obviously, if the central bank is buying up private debt instead of government debt, the effects are larger, since this involves subsidies to select private-sector entities and creates actuarial liabilities for taxpayers. There is little debate that "fiscal QE" was very important during the financial crisis. However, in most advanced economies, the emergency fiscal powers delegated to the central bank for dealing with financial crises were not intended for routine use in picking winners and losers. Again, the European Central Bank is a different animal, given the severe limitations that remain on eurozone-wide governance.

4. Role of Central Banks in Dealing with Financial Crises

This takes us to the third task of central banks, which is dealing with financial crises. There are good reasons why central banks are imbued with emergency powers to buy up certain kinds of private debt in a financial crisis (exactly what kinds of debt depends on the country). Central banks can also backstop some kinds of bank debt directly with guarantees, as the U.S. Federal Reserve did at the height of the 2008 financial crisis. Central banks have several short-term advantages over Treasuries in emergencies. First, in most countries, they are given broad latitude to act quickly and decisively, unencumbered by the need to pass legislation. Second, as financial regulators, they have an extensive relationship with and knowledge of the financial sector, again facilitating fast action. Third, central banks tend to have considerable personnel devoted to technical financial issues.[14]

Even in a financial crisis, the central bank remains an agent of the government. If there are major losses, for example when the central bank purchases massive quantities of private debt that end up in various stages of default, these will ultimately have to be transferred to the government, possibly in special purpose vehicles. This is a routine

14. The third advantage is not necessarily a structural feature of central banks but one that has developed in many countries over recent years. Back in the early 1970s, when the relative pay in the U.S. civil service was much higher than today and Paul Volcker was the undersecretary of the Treasury for international monetary affairs, the U.S. Treasury was the hotbed of ideas and scholarship in the transition to floating exchange rates, not the Federal Reserve.

operation in emerging markets that experience recurrent banking and debt crises. Most outside observers give the major central banks high marks for how they used their quasi-fiscal powers to manage the initial onslaught of the 2008 financial crisis, and to the European Central Bank for strongly invoking its quasi-fiscal powers to alleviate the eurozone debt crisis in 2012. However, it is dangerous when quasi-fiscal policy becomes routine and, as I have already emphasized, this has become a problem for preserving central-bank independence.

After preventing a wholesale collapse of the banking sector in a financial crisis, central banks were expected to promote recovery during the long sluggish growth period that typically follows (Reinhart and Rogoff, 2009). But the zero bound on interest rates (or the effective lower bound) proved extremely constraining.[15] There are indeed other policies that can help restore recovery after a crisis. If debt write-downs are not possible—which many of us have argued would be the first-best response even if it involved higher government debt—, then the next line of defense after monetary policy is fiscal stimulus.

Fiscal stimulus can take the form of debt-financed government spending and tax cuts, but it can also take the form of redistributive policies that favor low-income individuals with a high marginal propensity to consume. Compared to normal monetary policy, however, fiscal policy is a blunt instrument that is always going to be highly contentious and political. Nothing illustrates this more clearly than the case of the United States where, to a first approximation, a Democratic government would inject stimulus through a massive increase in government spending, while a Republican government would inject stimulus through tax cuts. Debt write-downs, while arguably being the single best targeted and most effective strategy in a financial crisis, are even more fraught politically. Such tensions make it difficult to wield fiscal policy with the precision and credibility that well-designed independent central banks can achieve.

Even though there are other tools, the inability of central banks to have a larger role in stimulus policy has been a major problem and could well be an even bigger one in the future. Several ideas have been advanced to restore the effectiveness of monetary-policy stimulus in a deep systemic financial crisis but, by and large, most of them work by attempting to transfer fiscal powers to the central bank that do not sit easily with their limited democratic accountability.

15. Debt write-downs could have included write-downs for subprime mortgages in the case of the United States, and for periphery country debts in the case of the eurozone.

A prime example is "helicopter money," where the central bank on its own accord issues currency (or bank reserves) and transfers the revenue directly to citizens on a per-person basis. It is remarkable how many leading commentators and influencers endorsed this idea in one form or another, even leading financial newspapers.[16] Of course, if central banks had the power to issue helicopter money, there are cases where it would be welcome, particularly in a crisis where the rest of the government might be at loggerheads and unable to act. The problem is that central banks are not endowed with the power to directly distribute or redistribute income to ordinary citizens. This right is reserved by the legislatures and if central banks were to trespass, they would quickly get reabsorbed into Treasuries. In Paul Tucker's[17] framework, decisions over helicopter money are not a suitable power to give to unelected officials, no matter how earnestly opinion writers cry out for doing so.

There is a perfectly valid and legitimate way to engage in the full equivalent of helicopter money, which is for the legislature to engage in debt-financed transfers and then have the central bank buy up the resulting debt.[18] (In fact, it would be more or less equivalent to leave the central bank out of it entirely and finance the transfers with one-week debt, which would give virtually the same effect at the zero bound.) If the legislature cannot agree on the transfers, central banks can complain, but if they try to do something about it, their independence will quickly disappear. Yes, there are some political-economy arguments claiming that, somehow via helicopter money, central banks can cut the Gordian knot when fiscal policy is stuck, but a deeper inspection shows that, unless central banks credibly raise their inflation targets, the effect is zero. And frankly, if central banks were able to credibly raise inflation expectations, then they would be able to drive down real interest rates without cutting the nominal rate and the whole issue of helicopter money would be moot. Bernanke's suggestion that central banks merely decide the quantity of helicopter money to be issued but not how it is allocated does not really solve the problem, since this too is a fundamentally political decision that

16. For thoughtful (but ultimately unsuccessful) attempts to rationalize central-bank issuance of helicopter money, see Turner (2015) and Bernanke (2016).

17. See Tucker (2018).

18. Indeed, one can argue that the Japanese central bank has engaged in helicopter money over the years, in the sense that there have been years where the central government has run large deficits and the central bank has purchased more than 100% of the new issuance.

needs to be made by elected officials. Bringing central banks into this territory is a recipe for their demise.

Another similarly dubious idea, suggested by almost as many commentators, is for a central bank stuck at the zero bound to buy up government debt and then destroy it. The most likely outcome is that this will do absolutely nothing. If one family member tears up debt to another, it has no effect on the family's total assets. When the Fed tears up debt it is owed by the Treasury, there is no effect on the indebtedness of the consolidated government to the private sector.

It is possible that having the central bank destroy its government debt will spark investor concerns about internecine government warfare that could end up with higher inflation. Investors may worry that if the central bank ends up technically bankrupt, the government will make recapitalization conditional on higher inflation, or perhaps it might even use the occasion to bring the Fed offices back into the Treasury building. (In the case of the United States, a "bankruptcy" of the central bank would be entirely contrived, because the Fed's liabilities are in dollars and it has the right to print them.[19]) To suggest that tearing up debt is a serious policy for dealing with the zero bound is just nonsense. It creates expected inflation in an unpredictable and chaotic manner by playing Russian roulette with central-bank independence.

The fact the central bank might not be able to significantly raise inflation in a financial crisis is a problem for many reasons, one of which is that (unexpected) higher inflation provides a simple time-tested mechanism for reducing the real value of private debts. If the Fed had been able to raise inflation to, say, four or five percent for several years after the financial crisis, it would have been very helpful in taking the edge off of private-debt problems that were not easily dealt with otherwise. But at present it lacks the instruments

19. Suppose the economy is at the zero bound, and the central bank tears up its holdings of government debt. Since the central bank is not in tightening mode at the zero bound, for a while it does not miss the government debt on its books because it has no need to sell it to pull liquidity out of the system. Now suppose the day finally comes where the central bank needs to sell government bonds, but it does not have any, and suppose all the gold and foreign exchange are gone too. Is it helpless? Hardly. First, it can stop passively accommodating the transactions demand for paper currency; the Fed printed over $90 billion in 2018 (with roughly 80% being hundred-dollar bills). And if allowed, it can issue special-purpose bank reserves or debt that pay higher interest than the cash or bank reserves it is buying up. If the Federal government blocks all those channels, the central bank must let inflation rise until the central government decides to recapitalize it.

it needs even to fight deflation in a financial crisis, much less to create inflation. We shall return to this point in discussing the case for negative interest rates.

5. Role of Central Banks in Dealing with Government Debt

We now come to the fourth and final point on our list of recent challenges to central banks, which is that they are no longer needed as bulwarks against the temptation to inflation away excessive government debt. In some sense, this is a corollary of the first challenge, that inflation has been so low for so long that people have come to believe that it can never come back. Unlike short-term stabilization policy, however, holding down inflation expectations even as debt rises is a long-term one. There are really two separate ideas in the mix here, the first of which is reasonable but debatable, the second of which is dubious.

The first idea is that thanks to the steady decline in long-term real interest rates on "safe" government debt, governments can now issue much more debt than they used to. This, as we have already discussed, makes perfect sense, albeit with important nuances, for example, the question of the maturity structure of debt. And in the case of the United States, the growing centrality of the dollar in the global financial system has likely reinforced America's "exorbitant privilege" and continued to feed the global demand for U.S. dollar assets, despite the United States' falling share of global output.

A stronger version of the "debt is completely benign" view was endorsed recently by former International Monetary Fund chief economist Olivier Blanchard in an interesting and provocative paper.[20] In essence, Blanchard argues that the economy is an inefficient equilibrium where, for whatever reason (excessive investment is the classic one), the rate of interest is below the growth of the economy. If this is a long-term steady state, then any one-time rise in government debt, potentially even a very large one, will have no effect on the long-term debt-to-income ratio because the growth outstrips the interest rate. Debt in this instance is a free lunch because the economy is investing too much anyway and in fact there is no need even to raise taxes to pay for it, at least in the range of current debt levels. This

20. See Blanchard (2019).

is doubly true if the funds are spent on high-return education or infrastructure investment (although this point tends to be overworked, given that less than four percent of government expenditure in advanced economies is dedicated to infrastructure investment).[21]

In sum, if high debt places no pressure on fiscal policy, then there will be no pressure on central banks to inflate it away either. And thus, there is one less reason why it is important that they be independent.

There are several debatable points. First is the contention that the economy is in an inefficient equilibrium as opposed to, say, having an equilibrium where interest rates are very low relative to returns on equity, so that risk drives the wedge, not low returns on investment. Perhaps the most debatable point is the claim that the risk of entering a fragile equilibrium zone where debt runs are more likely is independent of the level of debt. This is not what standard models suggest—it is surely no accident that investors are more concerned about high-debt countries than low-debt countries in crisis situations—and perhaps it also underestimates the extent to which historically "safe" assets turned out not to be, as shown by Farhi and Maggiori (2018).

This takes us to Modern Monetary Theory which, at least as I understand it, adds the still more extreme twist that the government can pile up debt longer and at lower cost by instructing the central bank to continuously engage in quantitative easing, issuing bank reserves to buy up long-term government debt. The effects of such a mandate depend on whether bank reserves bear market interest (as is now the case) or whether they are non-interest-bearing money. We have already argued that there is essentially no meaningful difference between having the central bank expand reserves to buy back newly minted long-term government debt and simply having the central government issue very short-term debt in the first place. If bank reserves pay interest, then the first-order effect of the MMT prescription is to drastically shorten the maturity structure of government debt. But if the reserves do not pay interest, then as soon as interest rates start rising, banks will rush to withdraw them and inflation will soar.

From the point of view of the consolidated government balance sheet, the central bank only plays a minor booking role in the MMT plan. Short-term debt is typically the cheapest way to finance government debt and there is a case to be made that, after the financial

21. See Abbas and others (2019).

crisis, the cost savings from issuing short-term debt have been even greater than usual.[22] One reason might be that, at the zero bound, investors worry that the potential for capital losses on long-term debt (for example, if interest rates rise significantly) is much greater than the potential for capital gains (since there is not much room to go down). But there is a very good reason why governments don't bet the farm on global real interest rates never rising again, since historically, they have an inconvenient habit of doing so in difficult times. Overreliance on short-term debt is risky—if global real interest rates were to rise, there would be immediate pressures to raise taxes and cut government spending. If the government were unable to respond quickly, then suddenly higher risk premia could exacerbate the problem. But nothing can make global interest rates for safe assets go up significantly, right? Wouldn't any conceivable shock make them go down?

If we have learned anything from the past, it is that economies can be subject to severe adverse shocks and tomorrow's shock may look completely and unpredictably different from the last shock. The model of Farhi and Maggiori (2018) illustrates a very important point. Markets—and policy economists—tend to extrapolate the present events far into the future and to exhibit "present bias." Put differently, the last big shock that hit raised the demand for government debt, the next one might not. It is one thing for a hedge-fund manager to take a big bet on the path of interest rates that they hope will work for a few years, after which they can retire. It is another thing entirely for a government to engage in this game, especially because it is neither easy nor desirable to quickly unwind high debt levels. Fiscal policy for a country needs to be robust, and debt maturity management is an important element of making it robust.[23]

To return to our theme of central-bank independence, the main decisions over maturity transformation are inevitably going to be made by the central government, while the central bank needs to retain control over inflation. If MMT has the central bank simply issuing interest-bearing reserves, then the "added twist" of QE policy is irrelevant. It will neither cause inflation nor give the central government any extra tools to run higher deficits. If, however, the central bank is forced to buy up government debt with non-interest-bearing money, then it is a recipe for inflation.

22. See Krishnamurthy (2012).
23. See Abbas and others (2019).

6. Instituting Effective Negative Interest-Rate Policy as a Means to Restore the Efficacy of Monetary Policy

What can be done to make central banks and monetary policy more relevant in today's low-interest-rate world? I have argued elsewhere that by far the cleanest and most effective idea is to make the institutional changes necessary for *effective* negative interest-rate policy. I highlight the word "effective" because even though a number of central banks have engaged in very mild negative interest-rate policy, none has tackled the most important issue, which is to discourage wholesale cash hoarding when rates turn too far negative. (A deeper analysis shows bank profitability is not going to be an issue if wholesale cash hoarding is dealt with properly).[24]

Due to space limitations, I only sketch the basic arguments here, but they are given in detail in part II of my 2016 book.[25] Also see the insightful recent discussion in Bordo and Levin (2019). The absolute cleanest solution, of course, is to move entirely to digital currency, but for many reasons, including privacy concerns and lingering barriers to financial inclusion, this is not advisable into the foreseeable future. I have argued for decades (Rogoff, 1998) that phasing out large-denomination notes would be a good idea for public finance reasons, and that even if this achieved only a modest benefit in terms of tax evasion and crime, the cost savings would be more than sufficient to compensate for the lost seigniorage that the underground economy currently provides, even for the U.S. dollar, which is by far the most widely used global currency, and certainly for currencies that are almost exclusively held domestically. If combined with administrative measures that shield most depositors from the effects of negative interest rates (since the objective is stabilization, not fiscal enrichment), as well as measures to tax large redeposits into the financial system, such an approach should allow for virtually unconstrained negative rate policy, as Rogoff (2016, 2017) and Lilley and Rogoff (2019) argue.

Eliminating large bills, say, $50 and above (or equivalents for other countries), should be enough to allow negative interest rates of

24. See Rogoff (2016) and Agarwal and Kimball (2019). As Rogoff (2016) argues, it is straightforward to shield the vast majority of small individual depositors from negative rates on bank accounts.

25. See Rogoff (2016) and Lilley and Rogoff (2020).

at least one to two percent, given storage and transport costs. Let's remember that we are excluding smaller depositors.[26] The central bank only needs to worry about large-scale hoarding by financial firms, insurance companies, pension funds, and the like. This is actually quite expensive if one considers insurance and storage costs. There are large fixed costs as well, which might be difficult to amortize if the period of very steep negative rates is short-lived. Adding in administrative measures that heavily regulate large-scale legal tax hoarding, as well as invoking taxes for wholesale redeposits of currency at the central bank should be more than sufficient. This should not be difficult if the central bank and the government cooperate in making the necessary legal and regulatory changes. Moreover, it is actually not necessary to have a system that is "watertight" as long as hoarding does not reach high levels.

But there is another idea first offered by Eisler (1933) that has been conceptually and mathematically analyzed by Davies (2005) and Buiter (2005) and more recently discussed in great practical detail by Agarwal and Kimball (2019). The alternative approach is to create a crawling peg exchange rate between electronic money (bank reserves at the central bank) and paper money. In this approach, the idea would be to move toward an equilibrium where all contracts and taxes were denominated in electronic currency. But transactions could be executed in either paper or electronic currency. During periods where the central bank was setting a negative policy interest rate (which also applies to central-bank reserves), the central bank would no longer accept paper currency at a one-to-one exchange rate with electronic currency. Instead, if the interest rate on electronic currency was -5 percent, then the value of cash in terms of paper currency, when tendered at the central bank, would depreciate at -5 percent as well. This idea is quite interesting albeit not quite as clean as it sounds, because in fact paper currency and electronic currency are not perfect substitutes, which is why central banks already can set slightly negative interest rates without creating a stampede to cash.

As for bank profits, if small retail depositors are excluded and if wholesale clients have no way to hold large quantities of cash

26. In my 2016 book, I suggest a $2,000 limit per taxpayer, but it could be somewhat higher. The purpose of negative interest policy is not to raise revenue but to stimulate inflation and growth, so the foregone income is meaningless. Given modern technology, it would be easy enough to subsidize small retail accounts either directly or through the banking sector.

without great expense and/or being taxed on their facilities, then banks should perfectly well be able to pass-through the negative rates; even mortgage rates have gone negative in some countries. Experience until now where the cash problem has not been taken care of would not necessarily apply. It should be noted that even so, the literature has generally found that bank profits have not suffered from negative interest-rate policy in most European countries except for small banks[27]—which presumably mainly have small depositors that would be excluded under my 2016 proposal. There is a laundry list of other second-order issues, which are dealt with in my book and also in the very thorough primer of Agarwal and Kimball (2019). The existing experience with negative rates suggests these should not be a problem. In my view, negative rate policy would solve the problem of central-bank impotence at the zero bound, which would be of immediate use for Europe and Japan and could help the United States in a recession. If central banks could reestablish their main role as interest-rate-setting institutions, then it might help them push back against efforts to use their balance sheets to make fiscal policy less transparent.

One expects to see unconstrained negative interest-rate policy first tried in a small country; the United States will not be an early adopter for many reasons. But some of the hysterical pushback against negative rates should be viewed as lobbying, not policy analysis, particularly the view that markets will fall apart. As of June 2019, over twelve trillion dollars in debt traded at negative interest rates and markets have not collapsed.

As Milton Friedman observed about the 1951 episode, where the Federal Reserve abandoned its bond price pegging program:

"Before the Federal Reserve gave up the pegging of the bond price, we heard all over the lot that a free market in bonds was going to be chaotic, that the interest rate might go heaven-high or down, that there might be capital losses, that savings institutions might well be wiped out by their capital losses, and that we needed some basic peg price on which the market could form its anticipation. We abandoned the pegged price. None of these things happened…" (Friedman and Roosa, 1967).

To be sure, implementing effective unconstrained negative interest-rate policy will require a host of legal, regulatory, and tax changes,

27. See López and others (2018).

and not all of these can be instituted by the central bank alone.[28] The obstacles in different countries will vary. It is notable, however, that in countries that have implemented mild negative rate policy, none has tackled the main challenge, which is how to prevent paper-currency hoarding and, as a corollary, how to protect bank profitability if rates go deeply negative. Of course, if one believes that it is impossible to have negative deposit rates, then the capacity for instituting negative rate policy is very limited. But in our view, once wholesale paper-currency hoarding is dealt with (the vast majority of retail depositors can straightforwardly be exempted from negative rates[29]), then the passthrough of negative rates to wholesale bank customers should be straightforward, just as the passthrough of negative policy rates has been to mortgages and other wholesale private-debt obligations in many countries in Europe. In general, all of the various approaches to instituting unconstrained negative rate policy should be increasingly easy to navigate as paper currency becomes further marginalized in legal, tax-compliant transactions (outside low-value transactions) and as countries deal with financial inclusion.

One naïve objection to negative interest rates is that they are unfair to savers. First, as already noted, it is straightforward with modern technology to exempt small depositors, so that only a very small percentage of retail depositors would be affected. Second, for savers who have more diversified portfolios, effective negative rate policy would push up the prices of equities, housing, and long-lived assets. Or to be precise, negative rates would counter the sharp drop that usually occurs in a deep recession or financial crisis. Third, long-term interest rates should rise, given that effective negative interest-rate policy pushes up the trajectory of inflation and growth. Fourth, and most importantly for most workers and families, negative interest-rate policy can help restore employment and income growth after a deep recession or crisis.

Some argue that deposit rates can never go negative, in which case, the capacity for instituting negative rate policy is very limited. But if the vast majority of retail depositors are exempted from negative rates (Rogoff, 2016, 2017; Lilley and Rogoff, 2019), then the passthrough of negative rates to wholesale bank customers will be reasonably smoother, as it has been with mortgages and other wholesale private-

28. Rogoff (2016) discusses some of the issues; Agarwal and Kimball (2019) provide an extremely useful handbook on transitioning to unconstrained negative rate policy.

29. See Rogoff (2016, 2017).

debt obligations in many countries in Europe. Of course, in countries where there are legal or regulatory impediments to implementing negative rates, fixing this problem would have to be on the list of administrative measures necessary to adopt effective unconstrained negative rate policy.

There are other ideas for giving the monetary authorities more scope to cut interest rates, for example, raising inflation targets. However, they are far less elegant and likely far less effective, for reasons explained in Rogoff (2016). For example, raising the inflation target from two percent to four percent buys a lot less space than it might seem because contracts would almost surely adjust more frequently (meaning larger interest-rate cuts were needed to achieve the same effect), and there would be costs of higher inflation (for example, a greater dispersion of relative prices) even during normal times. And there are other significant objections such as the cost to central-bank credibility of changing long-established targets, not to mention that, without being able to implement unconstrained negative interest-rate policy, Europe and Japan have not been able to get inflation to two percent, much less four percent. (When Japan raised its inflation target to two percent in 2013, there was very little impact on longer-term interest rates and, to this date, there still has not been.) Finally, even if inflation were raised to four percent, this still might not give nearly enough room for maneuver in a deep recession or financial crisis.

Let me be clear that I am not saying that negative interest-rate policy obviates the need for other forms of stimulus, for example, rises in government spending and tax cuts, during a recession. What it could potentially achieve is restore the balance between monetary policy and fiscal policy, with the monetary-policy response being typically much faster and more reliable than highly politicized fiscal policy. Indeed, if negative interest-rate policy feels too radical, it has to be compared to the dozens of outside-the-box ideas that fill the pages of the major economics journals on options for restoring growth in a crisis. All of these also involve severe risks; deep recessions and financial crises involve severe risks. Unfortunately, time and space constraints for this speech prevent a more complete discussion of the issues here, but there is a growing literature on the topic.[30]

30. See Rogoff (2016) and references therein, Rogoff 2017, Lilley and Rogoff (2019), and Agarwal and Kimball (2019).

In sum, the important point is that the path to virtually unconstrained negative interest rate policy is actualy quite straightforward, and should be achievable with only minor distortions. But each country needs to study what would work best in its particular, legal, financial, and institutional circumstances.

7. Conclusion

To conclude, central banks face challenges today stemming from their past effectiveness in reducing inflation and their present ineffectiveness in finding ways to deal with zero lower bound on interest rates. This has left them vulnerable to populist attacks from the left and the right that threaten to deeply undermine their independence, including some proposals to simply have the central bank be instructed to indefinitely finance massive increases in government debt and others to lower interest rates into a U.S. economy that already seems to be running hot. The idea that high inflation is a problem of the distant past but is unlikely to recur in 21st-century advanced economies is extremely dubious and, all in all, seems to be a classic case of "this time is different" thinking. Instead, the case for having an independent central bank that is hardwired to place significant weight on stabilizing inflation, as proposed in Rogoff (1985), remains strong, as is very clear from countries where central-bank independence has been severely compromised. If central-bank independence is rescinded and monetary policy politicized, it would only be a matter of time until high inflation followed. And if that happens, it may be even harder to put the inflation genie back in the bottle next time than it was in the 1980s and 1990s. Once trust is broken, it is difficult to reestablish. In the 1920s and 1930s, governments tried to reestablish the prewar gold standard that had been abandoned in World War I so that inflation could be used to help finance the war effort. But one of the great challenges was that once investors learned the bond could be broken, it was difficult to make it fully credible again. The same problem will likely face countries that tear down central-bank independence and try to restore it—they will face years of very high interest rates before public trust is restored.

As anyone who has worked at a central bank understands, central-bank independence is rarely granted by constitutional decree, and even where it is, the letter of the law has little meaning if political support is lacking. In reality, central-bank independence is fragile, and something that has to be earned every day. In this difficult period

for central banks, these need to look hard for new instruments to restore the effectiveness of normal interest-rate policy. Here I have suggested giving a much more serious look at taking the steps needed to effectively institute unconstrained negative interest-rate policy and argued that this is far preferable to having central banks engage as junior partners in debt maturity management and quasi-fiscal policy. To maintain their relevance and to protect the independence of monetary policy during a period of growing populism, central bankers cannot afford to sit on their laurels. Otherwise, what is perhaps the most important institutional development of our time in macroeconomic policy, the rise of independent central banks, risks being seriously undermined.

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