

Do Negative Interest Rates Live up to the Hype?

Ayowande McCunn

D.Phil. in Law, Oxon

Rohan Grey

Research Scholar, Global Institute for Sustainable Prosperity

President and Founder, Modern Money Network

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Abstract:

This paper explores the future of negative interest rates, and considers a number of economic, legal, and institutional objections to the normalization of negative interest rates as part of the monetary policy toolkit. First, it contextualizes contemporary monetary policy debates over negative nominal rates against the background of the modern monetary system and macroeconomic theory. Then, it sets out concerns about the economic effectiveness of the transmission of monetary policy, before turning to legal and institutional objections associated with negative interest rate regimes.

Keywords: negative interest rate, neutral rate, central bank independence, nominalism

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Introduction

This paper explores the future of negative interest rates, and considers a number of economic, legal, and institutional objections to the normalization of negative interest rates as part of the monetary policy toolkit. First, it contextualizes contemporary monetary policy debates over negative nominal rates against the background of the modern monetary system and macroeconomic theory. Then, it sets out concerns about the economic effectiveness of the transmission of monetary policy, before turning to legal and institutional objections associated with negative interest rate regimes.

I. Macroeconomic Policymaking in a Monetary Economy

Monetary systems can be conceived as public governance projects, comprised of elements of constitutional, statutory, and common law, as well as administrative regulations (Desan 2016). Monetary instruments, which circulate within monetary systems, are transferable liabilities (IOUs) that can be used as a means of payment and/or settlement of debts. Monetary instruments can be issued by any actor, although their degree of ‘moneyness’ varies wildly, according to the relative political and economic power of the issuer. Thus, “anyone can create money, the challenge is to get it accepted” (Minsky 1986, 228; see also Bell 2001, 25; Mehrling 2012).

Historically, public authorities recorded the difference between the nominal cost of physically producing monetary instruments and their nominal face value as a special form of fiscal revenue, known as ‘seigniorage.’ For instance, if it cost £0.05 to print a £5 note, the issuer would record £4.95 in seigniorage ‘revenue’ at the point of issuance, and then increase its available spending balance by the equivalent amount. This accounting approach was seen as capturing the value ‘premium’ afforded to the government’s IOUs by virtue of their special legal status—notably, their ability to be tendered in payment of public debts, such as taxes, fees and fines, as well as private debts set out in contract or enforced by courts. Today, however, public monetary instruments have different functions and optimal use-cases depending on their properties, including maturity, rate of interest, tax-receivability, legal tender status, and whether they are registered or bearer-instruments, and are subject to a range of accounting treatments, depending on whether they are issued by the central bank, treasury, a chartered bank, or another government-backed institution.

In this paper, we define public monetary instruments, which we refer to as capital-M ‘Money,’ to include any transferable obligations of the government or a government-backed institution, that are legally guaranteed to be an acceptable means of settlement of debts owed *to* the government, or enforced *by* the government, or, alternatively, that promise to be redeemable for other public monetary instruments that satisfy that condition. Thus, the following is a non-exhaustive list of instruments that meets our definition of Money:

- Coins and notes issued by the treasury;
- Insured deposits issued by banks and other licensed depository institutions (see Hockett and Omarova 2017);
- Banknotes and reserves (or settlement balances) issued by the central bank;
- Treasury securities and other government-guaranteed securities not issued by the central bank---such as Gilts in the UK;

- Securities, term deposits and other non-zero-maturity liabilities issued by the central bank.

Perhaps the most basic way of creating new Money is through fiscal policy. Fiscal policy is typically associated with government budgetary operations, such as taxing, spending, and government debt-management. Fiscal policymaking is often conducted on the basis of *ex ante* budgetary targets, such as a surplus, deficit, or a balanced budget, even though the government's spending and taxing commitments may ultimately be dictated, *ex post*, by events outside of their control. By running a fiscal deficit, governments increase the net amount of government financial obligations—typically in the form of treasury securities—in private circulation. These securities, which are held by the non-government sector as safe, liquid assets, can then be reliably exchanged for other forms of government obligations (such as reserves) via money markets, which, in turn, are backstopped by the central bank.

Banks also create Money in the form of demand deposits when they issue new loans. Banks are constrained in their lending activities by capital adequacy requirements, as well as other regulations intended to facilitate the smooth and liquid settlement of payments and manage systemic risk, which together are referred to as 'macroprudential' regulation (McLeay *et. al.* 2014, 3; Basel Comm. on Banking Supervision 2011; see also Armour *et. al.* 2016, 409). If they are listed, banks may also be constrained by external investors (Hirschman 1970). These investors can sell or threaten to sell their shares or bank capital and this threat may induce banks to not lend excessively.

Normally, we think of banks as receiving money from depositors, and then lending it out (in the form of reserves) to borrowers, while retaining a proportion as a fractional reserve to satisfy depositor withdrawals. However, this traditional account does not reflect the reality of modern banking, where banks do not require spare funds on hand in order to finance new loans. McLeay *et. al.* (2014, 3) explain how commercial banks make money in the Bank of England's Quarterly Bulletin:

When a bank makes a loan, for example to someone taking out a mortgage to buy a house, it does not typically do so by giving them thousands of pounds worth of banknotes. Instead, it credits their bank account with a bank deposit the size of the mortgage. At that moment, new money is created. For this reason, some economists have referred to bank deposits as 'fountain pen money', created at the stroke of bankers' pens when they approve loans. ...[T]he higher stock of deposits may mean that banks want, or are required, to hold more central bank money in order to meet withdrawals by the public or make payments to other banks. *And reserves are, in normal times, supplied 'on demand' by the Bank of England to commercial banks in exchange for other assets on their balance sheets. In no way does the aggregate quantity of reserves directly constrain the amount of bank lending or deposit creation.* (emphasis added)

Thus, banks' lending activity is not constrained *ex ante* by the supply of deposits or reserves on hand. Furthermore, banks only require reserves *ex post*, in order to satisfy regulatory requirements, pay for vault cash, and settle any outstanding interbank and bank-to-government payments. However, banks nevertheless remain somewhat sensitive to the price of borrowing

reserves, as, at the margin, higher borrowing costs may affect the creditworthiness of less profitable borrowers.

Central bank actions that affect the overnight price of reserves are generally considered within the purview of monetary policy; the third pillar of contemporary macroeconomic policymaking (along with fiscal policy and macroprudential regulation).

Historically, central banks have implemented monetary policy via interventions in the secondary market for short-term government securities, called “Open Market Operations”. Today, in jurisdictions where the banking system faces a structural glut of reserves, central banks implement monetary policy primarily by paying interest directly on excess reserve balances, thereby establishing a ‘floor’ to the cost of reserves (Bowman et al 2010).

In recent years, central banks have begun to introduce a range of new facilities through which to more directly affect the broader interest rate structure of the economy. These include large-scale asset repurchase programs, which include a wider range of financial liabilities than merely government-backed securities, as well as reverse repurchase facilities, which expand access to central banks’ balance sheet liquidity to non-bank financial institutions (Frost et al 2015). At the same time, central banks have begun to consider new ways to ease monetary policy while keeping short term interest rates at zero, such as quantitative easing (Krishnamurthy and Vissing-Jorgensen 2011, 2), forward guidance (Campbell et al 2012), a higher inflation target, and even the explicit coordination of fiscal and monetary stimulus, commonly known as ‘helicopter money’ (see Bernanke 2016).

Notwithstanding these recent innovations, however, the primary tool available to monetary policymakers remains the short-term interest rate target.

II. Neutral Rates, Liquidity Traps, and the Zero Lower Bound

Conventional monetary policy’s emphasis on a single, short-term interest rate target finds its roots in the belief that there exists at any point in time a theoretical interest rate, known as the neutral rate, which, if achieved and maintained, would eventually return the economy to a full employment equilibrium.

According to this view, central banks are always theoretically capable of achieving and maintaining full employment, provided that they can *hit or approximate* the neutral rate via its target policy rate. In practice, however, monetary policy implementation is complicated by the so-called “liquidity trap” condition, where the economy remains below full employment despite nominal short-term interest rates being set at zero (Krugman 2013). In a liquidity trap, additional monetary easing is ineffective, as any attempt to push the overnight rate on reserves below the ‘zero (nominal) lower bound’ (“ZLB”) merely drives banks to swap their excess reserves for zero-interest earning substitutes, such as physical currency.

Thus, when faced with a ZLB situation, the textbook prescription is to pivot from monetary easing to expansionary fiscal policy (see, e.g., McCulley and Poszar 2012; Krugman 2008). Fiscal stimulus increases the nominal rate of expected inflation, and with it, the neutral real interest rate, thereby giving more space for monetary policy to eventually resume the reins of

day-to-day aggregate demand management. Thus, this approach may be crudely summarized as: “monetary policy in normal times, fiscal policy in a liquidity trap” (see, e.g., Krugman 2008).

In the past eight or nine years, however, the world has been confronted with the political limits of this theoretical division of macroeconomic labor. Elected politicians remain unable or unwilling to implement additional fiscal stimulus, despite high unemployment, near-zero interest rates, and the near-unanimous recommendation of such action by the financial elite. At the same time, central bankers, facing unprecedented pressure to avoid another recession, have been forced to assume greater responsibility for day-to-day economic management than their tools suggest they are capable of managing.

One response to this challenge that has been gaining popularity among central bankers is to sidestep the need for greater fiscal stimulus by pursuing negative nominal interest rates. The rationale behind this approach is that violating the ZLB would enable monetary policy to more closely approximate the (ostensibly negative) neutral rate necessary to restore full employment. In the past few years, for example, the Bank of Japan, the Swiss National Bank, the Bank of England, and the European Central Bank each have implemented short term negative nominal rates of up to -0.75% (Bech and Malkohozov).

Contrary to some predictions, these ‘violations’ of the ZLB have not instantly resulted in a market-wide run to cash. Instead, locally chartered banks continue to hold sizeable reserve holdings and to offer positive (albeit low) consumer deposit rates, prompting speculation that the externalities associated with holding large amounts of physical currency as a substitute to reserves may be even higher than previously assumed.

At the same time, however, many believe that at a ‘deep’ enough negative nominal rate, the cost of retaining reserves will outweigh that of moving to cash, and, at that point, monetary policy will lose effectiveness. Thus, they continue to preserve theoretical relevance of the ‘effective ZLB’, even as empirical evidence indicates that such a boundary, if it exists, is significantly below the actual, nominal ZLB.

One way of viewing the liquidity trap is as a *technical* rather than *intrinsic* economic constraint of our current monetary system, resulting from the inability to reduce interest rates on physical currency synchronously with that on reserves. In other words, apart from the idiosyncratic design constraints of physical cash, there is no *theoretical* reason why an interest rate reduction of one percentage point should have very different effects depending on whether the nominal rate moves from 4 to 3 percent, 0 to -1 percent, or -4 to -5 percent.

Recently, there have been a number of proposals that diagnose and attempt to solve the effective ZLB constraint as a technological issue, ranging from Ken Rogoff’s proposal to simply abolish larger denominations of physical currency (Rogoff 2014), to Miles Kimball’s more nuanced proposal to replace the promise of at-par convertibility between physical currency and reserves with a floating rate peg (Agarwal and Kimball 2015, 7-8). According to this view, overcoming the “cash problem” would potentially revolutionize monetary theory, as central bankers no longer would be required turn to fiscal policy for aggregate demand stabilization at the (nominal or effective) ZLB. Instead, monetary policymakers would be free to set their overnight rate targets as low as necessary in order to hit the neutral rate and restore full employment (Buiter 2010, 222-25).

While it is beyond the scope of this paper to evaluate the narrow technical viability of such proposals, there is good cause to be skeptical of the broader economic, legal, and operational viability of these proposals.

III. The Economic Limits of Monetary Policy

There are at least two major reasons why, under current global conditions, a ‘deeply’ negative nominal short-term interest rate target may not increase growth sufficiently to restore full employment.

First, interest rate changes have a fiscal dimension, in that they affect the amount of money created by the government and spent into the economy in the form of interest payments on government liabilities (see, e.g., Mosler 2012; Scaggs 2015). Higher interest rates result in more interest income to private owners of government liabilities, and are thus equivalent to a fiscal subsidy, whereas negative interest rates reduce the value of government monetary instruments held by the private sector, and in this way are functionally equivalent to a tax (Mosler 2012).

Second, changes in the overnight interest rate often have asymmetric effects on consumer borrowing and deposit rates (Mosler 2009). This is due not only to observable differences in the consumption and investment habits of savers and borrowers, but may also arise because banks tend to at least partially absorb interest rate reductions onto their own balance sheet, in the form of higher net interest margins, and thus do not fully pass on all possible cost reductions from lower interest rates to their customers. Of course, competition might limit the extent to which an individual bank is able to raise net interest margins relative to industry standards.

Thus, even without wading into the broader debate over the merits of the ‘liquidity trap’ framework, there are reasons to question the textbook view that posits a simple link between lower interest rates and higher growth, and vice versa. Indeed, under certain conditions, higher interest rates may be stimulatory, while under others, they may be contractionary, and vice versa. More generally, this approach highlights the possibility that there is *no* single neutral rate consistent with both the price stability and maximum employment objectives of central banks (see, e.g., Pilkington 2014).

IV. A Possible Legal Impediment to Overcoming the ZLB

Beyond the uncertain economic effects, deeply negative nominal rates would also be potentially legally difficult to implement. Typically, a central bank’s legal authority to conduct monetary policy is an administrative delegation of authority from the legislature, which has power over taxing, spending, and monetary decisions. The extent to which a particular monetary policy action can be justified under existing legislation depends on the particular statutory authorization in question, as well as the action being contemplated.

For example, in the event that a negative nominal interest rate target was implemented by taxing or ‘stamping’ physical currency, such an act would, if conducted at a large scale, be indistinguishable from imposing a tax on existing financial assets. It would be difficult to infer the delegation of such a fundamental power on the basis of implicit or indirectly worded

monetary policy authority. Moreover, even in the event that a central bank was granted statutory authority to impose taxes on a discretionary basis, absent a coherent limiting principle, such authorization could still raise constitutional issues concerning the non-delegation of legislative power.

The answers to such legal questions are beyond the scope of this paper, and ultimately depend on the statutory and common law context of the jurisdiction in question. However, they are critical to determining the viability of proposals to implement negative interest rate policies that rely on mechanisms that could be characterised as taxes.

Argawal and Kimball (2015), for example, propose establishing an exchange rate on physical currency vis-a-vis digital reserves, in order to render physical currency *even more* undesirable vis-à-vis negative interest-earning reserves. However, such an approach implicitly requires discounting the face value of physical liabilities vis-à-vis digital liabilities, which, undermines the legal principle of nominalism (Fox 2011, 144). Under the nominalism principle, a legal sovereign does not promise to keep stable the real value of its monetary instruments (measured in purchasing power), but does promise to credit the bearer with the nominal face value of the currency at the time of transaction.

Gilbert v Brett (1604) concerned the debasement of a commodity currency and whether this ought to affect the performance of a monetary obligation. Although, '[n]o official record of the Privy Council's decision survives' (Fox 2011, 148), the case stands for the proposition that within the common law 'nominal values' are used 'to enforce monetary obligations'. Fox (2011, 161) notes:

The view taken by the Court in the *case* that the assigned legal values of the debt and the coins tendered by Brett were equivalent represented a deliberate decision to exclude an assessment of the real purchasing power of money from the legal conception of monetary and monetary obligations. The legal conception of monetary value was being separated out from the conception that obtained in contemporary economic theory and common commercial experience.

In other words, the common law principle is that a debt to pay £100 can be satisfied using £100 of physical currency. Under this principle, the Argawal and Kimball proposal is clearly a tax, even as it purports to be merely establishing an exchange rate, as it effectively reduces the *nominal* value of a *nominal* government monetary instrument.

Although it is conceivable that this tension be resolved by replacing nominalism with a different legal principle, such an abrupt change is unlikely, given that nominalism has served as a core underlying principle of payments systems and financial markets for centuries. Additionally, any such attempt would likely be viewed as an attempt to sidestep the messier delegation debate that would accompany a more explicit transfer of discretionary taxing authority to the central bank.

V. Institutional Dynamics Under a Negative Rate Regime

In recent years, there has been an increase in the discussion of the possibility of reflating the economy via 'Helicopter Money,' also known as 'overt money-financed deficits,' or 'a fiscal deficit financed by a permanent expansion of the monetary base' (see, e.g., Bernanke 2016;

Turner 2015). These discussions typically emphasize that the expansion must be permanent; otherwise the burden of today's growth would simply be deferred to the next generation of taxpayers, who would be required to forego additional consumption to pay down the increased public debt (Buiter 2014).

However, as we have previously argued, raising interest rates means that the consolidated government spends more Money into private circulation. This is a targeted injection of new Money to holders of government debt (Mosler and Forstater 2004). Helicopter money financed by the central bank is only different from normal deficit financing if the rate of treasury debt is different from the overnight rate on reserves at the central bank. As Kocherlakota (2016) notes:

To understand helicopter money, consider two ways that the government can raise \$100 billion to fund new spending (or a tax cut)[:] The Treasury can sell \$100 billion in bonds to investors [...] The Treasury can issue \$100 billion in bonds to the Fed, which pays for them by creating new money. The second form of financing looks like it should be cheaper and potentially more stimulative. After all, the government has raised \$100 billion without increasing its debt burden, because payments on the bonds will simply go from one government pocket (the Treasury) to another (the Fed, which remits its profits to the Treasury). The term “helicopter money” reflects the idea that the government could drop the new \$100 billion on people as if from a helicopter—a windfall completely independent of whatever decisions those people make. But the apparent attractiveness of the helicopter approach ignores something important: Money has a cost, too. When the Treasury spends the \$100 billion, it will appear in bank accounts. Banks, in turn, will deposit the money at the Fed—a liability on which the central bank pays interest. To see why this matters, imagine that the interest rate on the Treasury bonds moves in lockstep with the Fed's rate on deposits. ... In this hypothetical world, *there is absolutely no economic difference between the two forms of financing.*

Therefore, the critical question with respect to the monetary policy impact of helicopter money is not whether the deficit is later sterilized, but rather the rate at which interest is promised on the assets issued to finance the deficit.

Beyond the institutional political economy of fiscal-monetary coordination, negative rates would also have significant budgetary effects, as it reduces the cost of interest payments on the public debt to the treasury. On the other hand, lower yields on the central bank's portfolio of treasury securities reduce the profits available to be remitted to the treasury by an equivalent amount (see Carpenter et al 2013). Thus, lower rates leads to less interest spending by the treasury but also reduced interest for the central bank on treasury debt holdings. Although the net budget effect of these operations on the consolidated government sector might be neutral, such a shift could nevertheless affect the central bank's budgetary independence, and as a result, force it to be subjected to greater public and congressional scrutiny (Rogoff 2014; see also Conti-Brown 2015, 273). As Rogoff (2014) notes:

Even if eliminating currency is at least revenue neutral from the government as a whole, the central bank is the one that will lose seigniorage revenue ... Under longstanding institutional relationships, the ability to self-finance has put central banks in a privileged position.”

On the other hand, such budgetary independence historically has been accumulated, rather than explicitly granted, and consequently may not be currently justified from a public policy perspective (see Conti-Brown 2015, 273).

Conclusion

This paper explored the future of negative interest rates. It provided a brief overview of money and monetary policy, as well as a broad, functional definition of money as a form of debt that can be used to settle third-party obligations. This definition extends to a range of government issued debt instruments.

This paper then described the theory of the neutral rate of interest; that is, the idea that there is a theoretical short-term rate at which the economy would self-equilibrate to full employment. The discussion of neutral rate theory motivated an analysis of negative interest rates, and the challenges posed to conventional monetary policy implementation when the nominal neutral rate is believed to be negative. If a central bank pays a negative rate on overnight reserves, then banks might retain physical cash at zero interest instead of holding excess reserves, and thereby prevent the central bank from being able to hit its negative nominal rate target. That situation is a broad characterisation of the zero lower bound problem.

Finally, this paper analyzed the economic, legal, and institutional problems associated with negative interest rate policy. Economically, it suggested that it is extremely difficult to predict the neutral rate, if it even exists, given the often contradictory effects of higher and lower rates on different economic dynamics, including borrowing and savings rates, net interest margins on bank loans, and the fiscal stance of the government. Legally, it highlighted issues related to imposing a negative interest rate on legal tender, in that it may violate the principle of nominalism and functions as a non-legislatively approved tax on cash balances. Institutionally, it highlighted the difficulty of achieving full employment solely through central bank-driven channels, given the functional interdependence of monetary and fiscal policy. In addition, it argued that a negative interest rate policy might reduce the profitability of a central bank, and in doing so may affect its institutional independence within the government.

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