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Examining the Impact of Modern Money Theory on Non-Traditional Means of Increasing Aggregate Demand

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EXAMINING THE IMPACT OF MODERN MONEY THEORY ON NON-TRADITIONAL MEANS OF INCREASING AGGREGATE DEMAND

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Abstract:

The recent period of ultra-low interest rates and chronically inadequate aggregate demand has led to a series of prominent new proposals of nontraditional means of increasing aggregate demand. That same stagnation has allowed for the increasing influence within the field of Modern Money Theory, a theoretical framework derived from historical observations regarding the role of money. I will explore the impact of Modern Money Theory (MMT) on two of the most prominent proposals for increasing aggregate demand, helicopter money and negative interest rates. I will explain why MMT would suggest, not only are these policies either limited in their effectiveness, or redundant; it is a mistake to refer to both as monetary policy. I present MMT's solution to inadequate aggregate demand, a Job Guarantee program, and explain the inadequacy of strictly monetary solutions in countering low aggregate demand.

Table of Contents

Acknowledgements

Introduction – Welcome to ZIRP

In recent years, economic stagnation has plagued much of the Western economic sphere. Manifesting in zero percent interest rates, chronically high unemployment, stagnating prices and substandard economic growth, the phenomenon of insufficient aggregate demand has consumed much of the science of economics. What Larry Summers refers to as "Secular Stagnation" (Summers, 2014) has led to a crisis in the science of econ, as so many of the traditional means of encouraging aggregate demand have come up short.

The happy byproduct of this predicament has been a willingness to re-appraise these methods of executing monetary policy. From Negative Interest Rate Policy (NIRP) to Helicopter Drops, no idea capable of increasing aggregate seems to be off the table anymore. The 2017 US Monetary Policy Forum featured the President of the Federal Reserve Bank of Dallas moderating a panel concerning the experience of negative interest rates, a sentence that seemed unfathomable a short time ago. It is no longer impossible to imagine central bankers learning to fly helicopters as a means of increasing aggregate demand (Irwin, 2016). As the taboo becomes possible, it is worth remembering that means of executing monetary policy are not the only theoretical framework being re-examined in the wake of the crisis.

Modern Money Theory is but one of these intellectual beneficiaries of the economic crisis. Derived from Abba Lerner's Functional Finance (1943), the Chartalism of Knapp (1924), the view of money of credit from Innes (1913), Minsky's (1986) observations on banking, and the sectoral balance of Godley (1996)[1], Modern Money Theory applies a few insightful observations regarding the nature and history of money and finance to time-tested principles of

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[1] Inspiration for the theory documented by Scott Fullwiler, Stephanie Kelton, and L. Randall Wray (2012)

economics. The result is a series of powerful contradictions of existing economic heterodoxy. Modern Money Theorists have a habit of referring to most everyone who relies on these principles as a Neoclassical (Wray, 2014c), a byproduct of the degree to which they disagree with conventional economics. Many of these differences come about through the IS-LM model so foundational to modern economics.

These differences are stronger still when applied to the developing methods of executing monetary policy. This paper will attempt to explore how, even when tenets of Neoclassical economic policy suggest the potential of new developments in monetary policy, Modern Money Theory suggests severe limitations in the efficacy or innovation of these new monetary instruments.

Chapter One of this paper will explore the foundations of Modern Money Theory, as well as its implications for key Neoclassical assumptions. Modern Money Theory has strong objections to the Neoclassical interpretation of money as a veil, or the nature of the development of fiat currency. These demurrals, along with observations of money as wealth and the sectors of the economy lead to revolutionary insights into the funding of government, the levy of taxes, and the independence of the Federal Reserve. In this section, Modern Money Theorists will present the ideal manner of collecting taxes, funding government, and executing currency.

Chapter Two will explore the theory of helicopter money, and how advocates such as William Buiter imagine its execution by a central bank. Though the exact name and nature of such a policy varies, the core result is government printed funds distributed to citizens. Modern Money Theory will demonstrate that, not only are helicopter drops not necessarily any more effective than traditional monetary policy; they are better thought of as fiscal policy.

Chapter Three will explore the increasing acceptance and employment of Negative Interest Rates. Much effort will be made to explore the various proposals for pushing past the zero lower bound, many centering on the end or discounting of physical currency. MMT arguments will be shown which assert that, effective or not, an end to the zero lower bound will not solve the problem of chronically inadequate aggregate demand. Because interest rates are not the most critical factor in the decisions of banks to extend financial loans, ever lower interest rates cannot lead to economic prosperity.

Chapter Four will present the Modern Money Theory solution to insufficient aggregate demand, a jobs guarantee program. Such a program can not only increase aggregate demand to meet aggregate supply; it would ideally promote economic welfare and fairness. The principles established in Chapter Two will demonstrate both the strength of the jobs guarantee program, and its capacity to encourage growth and stability.

The most important takeaway from this project, and the place where Modern Money Theory most ardently disagrees with what it refers to as Neoclassical economic theory, is the emphasis of monetary policy over fiscal. The increasing incidences of excessive unemployment and inadequate aggregate demand have coincided with the increasing degree to which government around the world have increasingly shun fiscal expansion in the name of monetary stimulus. Modern Money Theory suggests that this is responsible for much of the current economic malaise; the sooner Government regains its willingness to deficit spend, the better.

Chapter One – The Foundations of Modern Money Theory

1.A - *MMT and the Neoclassical perspective of Money*

Modern Money Theory (MMT) is firstly derived from departures from Neoclassical interpretation of money as a veil. The Neoclassical argument for the neutrality of money rests on the historical example of commodity money, in which items become means of exchange. This serves the chief purpose of money, and illustrates its reason for existence. The trade of money is a means to the end of getting needed goods, meaning there is little use in being concerned with the value of dollars themselves. "Since money was simply representative of the value of other 'real' commodities… mainstream macro-economic models today treat money... by including a 'money-in-utility' function that attempts to show why people desire money, whilst preserving its neutrality[2]" (Ryan-Collins, 2012, p.32). If a commodity can serve as a medium of exchange, unit of account, and store of value, it can effectively serve as money, facilitating trade (Mishkin, 2013, p.53-55).

This speaks to the original purpose of money, to solve the issue within a barter system of the need for a double coincidence of wants (Kiyotaki and Wright, 1989). In the absence of currency, an individual A wishing to trade their good for another would need to find an individual B who not only needs their good, but also has the good individual A desires. Such a barter process is both cumbersome and unrealistic. Money, a mutual means of exchange, can facilitate exchange through a good that everyone wants, reducing the need to hunt for the single appropriate buyer and seller.

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[2] Example provided in (Sidrauski, 1967)

Modern Money Theory begins by noting the first issue with the Neoclassical theory of money as a veil, that it is self-defeating. In this model:

> There would be no need for money or indeed any other kind of intermediating financial service.... in the economy at all.... if everyone did indeed have perfect information.... they really would exchange goods and services in barter-like fashion without the need for any commodity like money to provide them with information about the value of those goods and services. (Ryan-Collins, 2012, p.32)

It is unclear why money is even necessary under the Neoclassical assumption of perfect information. Modern Money Theory instead views money through the lens of credit:

> Records of credits and debts were more akin to modern electronic entries – etched in clay rather than on computer tapes. And all known early money units had names derived from measures of the principle grain foodstuff… All of this is much more consistent with the view of money as a unit of account, a representation of social value, and an IOU rather than as a commodity. (Wray, 2015, p. 164)

> The double coincidence of wants can just as easily be solved through credit as with coins or paper. Allowing individual A to owe individual B credit in exchange for their desired good ends the need for fiat currency within the barter system.

Modern Money Theorists would note that while there is scant historical evidence of any type of barter system (Graeber, 2014), there are any number of societies which traded predominantly on credit, some thousands of years before the emergence of commodity or fiat money (Nesiba, 2013). Credit can easily solve the issue of the double coincidence of wants, rather than necessarily trading with a form of fiat currency or money (Wray, 2014b). "Whilst clay tablets were used in Babylon, tally sticks were used in Europe for many centuries to record debts. Tally sticks were sticks of hazel-wood created when the buyer become a debtor by accepting goods or services from the seller who automatically became the creditor" (Ryan-

Collins, 2012, p. 34). Trading on debt is not an invention, nor only possible with the development of currency; it is the precursor to fiat currency[3].

    1.B - *Government's Role in the Development of Currency*

MMT points to the need for a broadly accepted government to allow for the development of fiat currency. Currency notes did not simply come into existence; it is necessary for government to print these notes for exchange. For money to be facilitated into an economy, that money must first be printed or created, then distributed on the understanding that it is to be redeemed. This leads to the question of why anyone would initially accept newly minted dollars if the only thing which allowed for their backing was a societal agreement to accept them as currency.

Neoclassical theory would point to the general acceptance of currency among a population as reason for its mass adoption. Essentially, "John accepts it (money as payment) because he thinks Mary will accept it, and she accepts it because she thinks Walmart will probably take it" (Wray, 2015, p.47). This process is aided by "some trust in the authorities who issue it" (Mishkin, 2015, p. 56), and who can protect against counterfeiting while allowing for widespread dissemination, but still depends on the trust that the next person with a good will accept your paper as valuable. This theory ignores the means through which money is created, and its adoption. More to the point, it does not address the question of the examples, "throughout history… of governments that pass legal tender laws, but still could not create a demand for their currencies which were not accepted in private payments" (Wray, 2015, p. 47).

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[3] MMT advocates point out that banking and credit instructions presaged many forms of coin seigniorage by thousands of years (Davies, 2016), as well as the observation that demand deposits creation through banks is responsible for most historical money creation (Wray, 1998).

Money enjoys support and adoption through its original purpose, fulfilling a tax liability. While "the government cannot easily force others to use its currency in private payments, or to hoard it in piggybanks…government can force use of currency to meet the tax obligations that it imposes" (Wray, 2015, p.49). When government promises to accept a currency as a tax obligation, it strengthens the applicability of this currency as a means of facilitating trade. In this way, taxes serve to drive money. A government willing to accept a currency as payment in taxes is necessary for a currency to prosper. "If a sovereign has the power to impose and enforce a tax liability, it can ensure a demand for its currency" (Wray, 2015, p.51). In this way, "It is the decision of the state to accept at state pay offices, and not legal tender laws, that creates a Chartal (state directed) money" (Wray, 2014b). It is not a societal consensus, but the tax obligation of the sovereign[4], which creates the demand and usage of money.

1.C - Sectoral Balances and MMT Accounting

MMT relies on the view of the economy as composed mainly of three sectors: the private sector, the government sector, and the foreign sector. Those sectors each have a relative level of wealth, denominated in either real (in the form of assets such as property), or financial assets. Real assets can be accumulated and produced, to the point that all three sectors can have a positive net worth (Wray, 2015, p.11). However, financial wealth, in the form of a financial asset, must necessarily be in the form of a debt, to be paid by someone else. The total amount of financial wealth in the economy must sum to zero. For the three sectors in this model:

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[4] Note that not all individuals need a tax obligation for taxes to encourage the usage of money as means of exchange. It is enough for some individuals to have one, as widespread tax obligations mean that "even those without tax debts will work for the sovereign's IOUs knowing that others need them" (Wray, 2015, p.148).

$$\text{Domestic Private Balance} + \text{Government Balance} + \text{Foreign Balance} = 0 \quad ^{(5)}$$

Private, government, and foreign financial wealth and assets must sum to zero, because a financial asset owned by a person must be a debt. For all actors, their personal balance will stand as:

$$\text{Real Assets} + \text{Financial Assets} = \text{Financial Liabilities} + \text{Net Worth}$$

Because financial assets must add up to zero, the balance of private, public, and foreign financial wealth must be inversely correlated:

Sectoral Balances in U.S. Economy 1990-2015

Source Data: FRED Database
Foreign represents -1*Current Account Balance (i.e., a positive is a trade deficit or capital surplus)

(6)
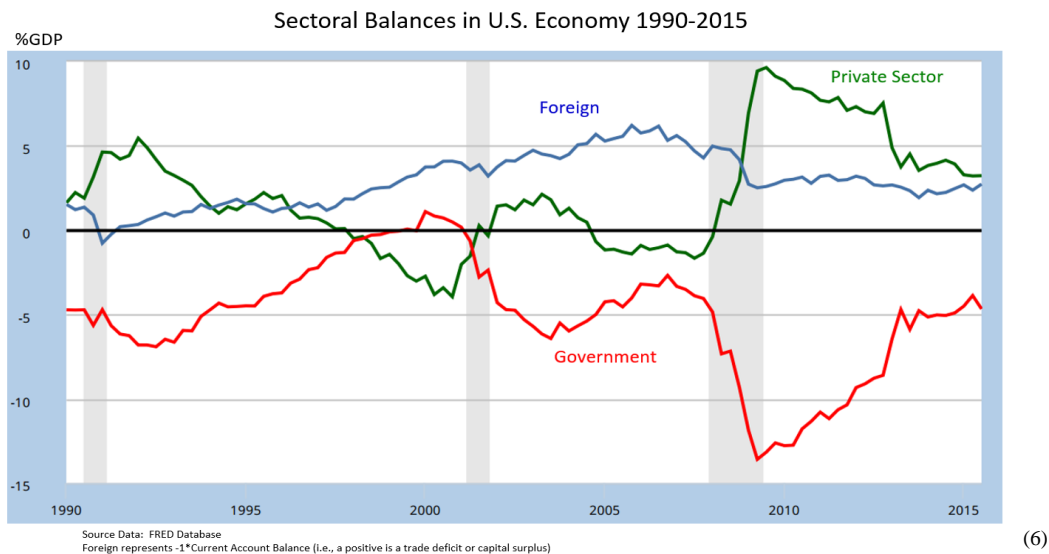
Money thus serves as a financial asset, measuring liabilities of government, and the net worth of the private sector.

This can be illustrated by the example of a government buying a good worth $100 from the private sector for $100, through the creation of $100 of cash:

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[5] The following accounting identities come from (Wray, 2015, p.19)

[6] Image built from FRED data, (Farcaster, 2015)

Government Balance Sheet:			Private Sector Balance Sheet:	

Assets	Liabilities/Equity
+$100 Good	+$100 Cash

Assets	Liabilities/Equity
+$100 Cash	
-$100 Good	

The government has created $100 in liabilities, and attained a $100 good. No change in net worth has occurred. However, $100 in cash has been issued, serving as a $100 liability of the government. The loss of the private sector's $100 real wealth is offset by a $100 gain in financial wealth. Though the government has attained $100 in real wealth, it now owes $100 in debt to the private sector.

1.D - *Sectoral Balances and the Deficit*

This accounting identity leads to a few important realizations regarding the nature of government wealth and accounting, and currency itself. First, and most important, is the note that the financial wealth of the government is exogenous; the government cannot control whether it is in deficit or in surplus. This stems from of a breakdown of the accounting identity:

Domestic Private Balance + Government Balance + Foreign Balance = 0

(Savings-Investment) + (Taxes – Government Purchases) + (Exports – Imports)=0 [7]

The choices of domestic individuals, whether to save or invest, as well as the individuals of foreign countries, whether to import or export, are beyond the control of the government.

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[7] (Wray, 2015, p. 23)

Practically, the change in financial wealth of the government, or its year-to-year deficit, is thus determined by external forces (Wray, 2015, p.26-27)[8]. This manifests itself as government efforts to manipulate deficits. Raising taxes or cutting spending can reduce economic growth, leading to lower tax revenue and higher spending. This paradox of thrift limits the government's ability to maintain endogenous control of the deficit. This accounting identity yields a fundamental insight of Modern Money Theory; that the government cannot directly control its financial wealth through its yearly deficit or surplus. Any government sector surplus must be composed of private financial liabilities and debt. For government to accumulate financial wealth through a surplus, "there must be a net saving desire in the nongovernment sector, satisfied by the government's deficit" (Wray, 2015, p.112).

This stands in stark contrast to Neoclassical assertions to the contrary, that the government must consistently work to control the deficit, a figure which it is imagined it can manually manipulate. IS-LM models which evaluate government deficits through this lens, attempting to "estimate the size of the decrease in transfer payments (or tax expenditures) needed to stabilize the U.S. government debt/gross domestic product (GDP) ratio" (Fair, 2012) are flawed for this reason. Governments deficits are a function of the private sector desire to save, the state of the economy, and current account deficits or surpluses (Fullwiler, 2010). Contractionary fiscal policy will only 'work' if it induces the private sector to save less.

1.E - *The Effect of a Budget Deficit on Interest Rates*

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[8] This is partly a function of the government's counter-cyclical programs. Higher deficits will occur in recession, when the private sector attempts to save and deleverage, as tax revenues decline and spending increases. This is beyond government control.

This leads to one of many realizations which undo bulwarks of traditional IS-LM theory, namely the effect of deficits on interest rates. Neoclassical theory asserts that "an unanticipated temporary increase in government expenditure will raise the short-term and long-term real interest rates" (Turnovksy, 1989). By increasing demand, an increase in government expenditure should shift the IS curve to the right, raising aggregate output as well as the real interest rate:

$$(9)$$
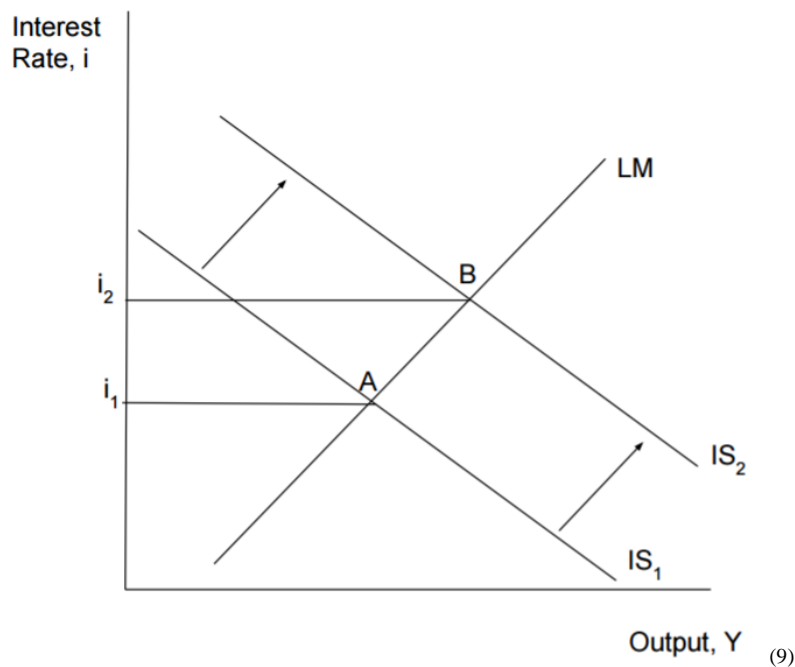
This effect will practically manifest itself through the reduced availability of funds:

> With a downward sloping IS curve and an upward sloping LM curve a rise in the interest rate will accompany an increase in real income due to a higher level of government spending... the multiplier (of government spending) is reduced by a scarcity not of real resources.... but of funds, which pushes up interest rates when the economy begins to expand. (Buiter, 1975)

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[9] In this model, the increase in government expenditure shifts the curve from IS_1 to IS_2, and the equilibrium from point A to point B. The result is an increase in interest rates from i_1 to i_2.

Though varying in its effect[10], 'crowding-out' should increase interest rates with increased

government borrowing, leading to any number of undesirable drags on economic growth:

> Conventional analyses of sustained budget deficits demonstrate the negative effects of
> deficits on long-term economic growth… ongoing budget deficits decrease national
> saving, which reduces domestic investment and increases borrowing from abroad... The
> reduction in national saving raises domestic interest rates, which dampens investment…
> The external borrowing that helps to finance the budget deficit is reflected in a larger
> current account deficit, creating a linkage between the budget deficit and the current
> account deficit. The reduction in domestic investment [which lowers productivity
> growth] and the increase in the current account deficit [which requires that more of the
> returns from the domestic capital stock accrue to foreigners] both reduce future national
> income, with the loss in income steadily growing over time (Rubin, Orszag, Sinai, 2004).

The litany of negative effects of excessive borrowing are mainly a result, or participants

in a self-reinforcing cycle of, a reduction in available loanable funds. Modern Money Theory

rejects the bulk of the costs associated with government borrowing, because Modern Money

Theory rejects the claim that deficits reduce loanable funds or increase interest rates. Because

fiscal deficits add to private sector financial wealth, and increase reserves available in the

banking system, they will, contrary to Neoclassical assumptions[11], decrease interest rates:

> Since a government budget deficit leads to net credits to bank deposits and to bank
> reserves, it will likely generate an excess reserve position for banks. If nothing is done,
> banks will bid down the overnight rate. In other words, the initial impact of a budget
> deficit is to lower (not raise) interest rates. (Wray, 2015, p. 115)

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[10] Both (Buiter, 1976) and (Turnovksy, 1989) allow for different short-run and long-run effects of
borrowing, while Buiter acknowledges that, in a closed-economy model, the increase in interest rates can
be thought of as a reaction to the failure of the Fed to extend additional reserves through open market
operations.
[11] In response to the allegation of 'crowding out', MMT advocates point to the fact that, "empirically, this
crowding-out effect via higher interest rates has been difficult to prove. This has been particularly obvious
in the case of Japan, where during the 1990s fiscal expansion of record proportion was adopted...when
investors purchase newly issued government bonds... the total stock of money has not changed" (Ryan-
Collins, 2012, p. 124)

A government deficit, by increasing private sector financial wealth, increases the availability of reserves, and will lower interest rates, absent intervention from the Federal Reserve.

In such a scenario, the Fed would, to prevent interest rates from falling below target, respond by increasing purchases of bonds:

> When a deficit is incurred, in order for the Fed's interest rate target to be achieved either the Fed or the Treasury must sell bonds in order to drain the net addition to reserve balances a deficit would create. If no bonds were sold, the deficit would generate a system-wide undesired excess reserve balance position for banks; as banks attempted to lend these balances, the Federal funds rate would be bid down below its target (Fullwiler, 2007a)

The Federal Reserve commitment to maintaining an interest rate target[12] will thus prevent any practical effect on reserves because of government spending. Not only will the initial effect of increased government spending serve to decrease interest rates, as money is disseminated into the economy as reserves; open market operations will prevent any sustained movement of interest rates.

1.F - *The Purpose of Bond Issues*

The absence of any kind of 'crowding out' of private investment (Section 1.E) inadvertently triggers the impact of several realizations of Modern Money Theory. Traditional Neoclassical theory, as well as common sense[13], would find the purpose of a bond issue to be relatively straightforward, as a means of financing government works:

> Because the government has to pay it's bills just as we do, it has a budget constraint. We can pay for our spending in two ways: Raise revenue [by working] or borrow. The

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[12] Further effects of this policy will be explored in (Section 1.J)

[13] "And it goes almost without saying, too, that we must continue to provide our Government with the funds necessary for waging war not only by the payment of taxes -- which, after all, is an obligation of American citizenship -- but also by the purchase of War Bonds -- an act of free choice which every citizen has to make for himself under the guidance of his own conscience." – FDR, June 12th, 1944, Fireside Chat

government also enjoys these two options: raise revenue by levying taxes or go into debt by issuing government bonds… it has a third option: the government can create money and use it to pay for the goods and services it buys…. This method of financing government spending (the Fed conducting open market operations to buy back bonds after issue) is called monetizing the debt. (Mishkin, 2013, p.487)

But, if government can finance debt by either issuing bonds, or 'monetizing the debt', it does not appear necessary to issue bonds in the first place. "The government should borrow money only if it is desirable that the public should have less money and more government bonds, for these are the *effects* of government borrowing. This might be desirable if otherwise the rate of interest would be reduced too low [sic]" (Lerner, 1943).

Thus, the true purpose of a bond issue comes to light; "Short-term Treasury bonds are an interest-earning alternative to bank reserves" (Wray, 2015, p. 114). Far from being necessary to service deficits, bonds function primarily as an interest-bearing manifestation of government liabilities, allowing for control of interest rates (Lerner, 1943). This becomes evident by re-examining the example from (Section 1.C), of the government purchasing a $100 good on credit[14].

Imagine that the government, instead of keystroking funds[15] into existence to purchase a $100 good, simply imposes a $100 tax liability on the individual. The individual agrees to give up their good for $100 in reserves, deposited at a bank as a demand deposit (DD). The government is left with the good in question, and a new tax liability:

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[14] Accounting identities from (Wray, 2015, p.91-96)
[15] Keystroking funds can be considered equivalent to printing money, although it acknowledges the fact that almost all newly created money is digital, and in fact the product of keystrokes, not a printing press.

Government

Asset	Liabilities/Equity
+$100 Good +$100 Tax Liability	+$100 Reserves +$100 Net Worth

Private individual

Asset	Liabilities/Equity
+$100 DD -$100 Good	+$100 Tax liability -$100 Net Worth

Private Bank

Asset	Liabilities/Equity
+$100 Reserves	+$100 DD

The taxpayer will then use their demand deposits to close their tax liability. The bank will lose its reserves as well as its demand deposit, leaving the final position as:

Government

Asset	Liabilities/Equity
+$100 Good	+$100 Net Worth

Private individual

Asset	Liabilities/Equity
-$100 Good	-$100 Net Worth

This scenario, the balanced budget scenario, involves the government attaining a private good, increasing their net wealth in real assets in the process.

Looking at the deficit spending scenario yields a similar outcome. Imagining that the government does not impose a tax liability, the result will be the initial scenario (Section 1.C), with the government creating money as liability to be traded for a good, ultimately becoming reserves:

Government

Asset	Liabilities/Equity
+$100 Good	+$100 Reserves

Private Individual

Asset	Liabilities/Equity
-$100 Good +$100 DD	

Private Bank

Asset	Liabilities/Equity
+$100 Reserves	+$100 DD

Note that $100 in private sector financial wealth has been created by trading a real asset for a financial one. If the financial institution in question would like to obtain more interest than that provided by reserves, it can use those reserves to buy a bond, yielding the following outcome:

Government

Asset	Liabilities/Equity
+$100 Good	+$100 Bond

Private Individual

Asset	Liabilities/Equity
-$100 Good +$100 DD	

Private Bank

Asset	Liabilities/Equity
+$100 Bond	+$100 DD

Total wealth is unchanged, but the financial wealth of the private sector has increased. This accounting identity remains valid even when imposing the practical restrictions on monetary policy faced by the Federal Reserve and the treasury. If the consolidated government

attempts to sell a bond before it deficit spends, it will begin by crediting a private bank with such

a bond, in exchange for a demand deposit:

Consolidated Government

Asset	Liabilities/Equity
+$100 DD	+$100 Bond

Private Bank

Asset	Liabilities/Equity
+$100 Bond	+$100 DD(Gov)

The government will then use this deposit to buy a $100 good, transferring the demand deposit to

the private individual in question.

Government

Asset	Liabilities/Equity
+$100 Good	+$100 Bond

Private Individual

Asset	Liabilities/Equity
-$100 Good +$100 DD	

Private Bank

Asset	Liabilities/Equity
+$100 Bond	+$100 DD

It is important to note that this yields the same identity as the previous example, in which the

bond was issued after the purchase. The order does not affect the final accounting identity.

Imagining that the government refuses to write checks on central bank accounts, meaning

the treasury must be responsible for any purchases, yields a similar result:

Treasury   Private Bank

17

Asset	Liabilities/Equity
+$100 DD	+$100 Bond

Asset	Liabilities/Equity
+$100 Bond	+$100 DD(Treasury)

After the treasury issues a bond to a private bank, the treasury will shift the deposit to the central

bank, after which it will write the check allowing it to attain the $100 good. The private bank

receives the reserves from the individual or corporation in question, allowing a final balance

position as follows:

Consolidated Government

Asset	Liabilities/Equity
+$100 Good	+$100 Bond

Private Individual

Asset	Liabilities/Equity
-$100 Good +$100 DD	

Private Bank

Asset	Liabilities/Equity
+$100 Bond	+$100 DD

The degree to which the Treasury or the Federal Reserve elects to tie its own hands through

regulation does not matter; the ultimate purpose of bonds has been fulfilled, to allow the Federal

reserve to control interest rates. This is evident in Federal Reserve operations:

> When a deficit is incurred, in order for the Fed's interest rate target to be achieved either
> the Fed or the Treasury must sell bonds in order to drain the net addition to reserve
> balances a deficit would create. If no bonds were sold, the deficit would generate a
> system-wide undesired excess reserve balance position for banks; as banks attempted to
> lend these balances, the Federal funds rate would be bid down below its target. Treasury
> bond sales have thus been referred to as "interest rate maintenance operations" rather than
> "financing" operations ... More specifically, bond sales are necessary because the Federal
> funds rate target is above the rate paid to banks for balances held in their reserve
> accounts. (Fullwiler, 2007)

The lack of necessity of bonds to allow for deficit spending is partly a reaction to a more fundamental observation within MMT, that there is not necessarily an affordability constraint on deficits.

1.G - *The Affordability Constraint on Government Spending*

In Neoclassical theory, excessive government debt will lead to any number of risks and hazards:

> Budget deficits raise total lifetime consumption by shifting taxes to subsequent generations. If economic resources are fully employed, increased consumption necessarily implies decreased saving. Interest rates must then rise to bring capital markets into balance. Thus, persistent deficits 'crowd out' private capital accumulation… economists would agree that these consequences would be highly detrimental. (Bernheim, 1989)

The crowding out of private borrowing is not the only possible handicap of large debt or deficits. Excessive government debt can limit policy options in times of deflation, heightening financial instability as markets lose confidence in the ability of government to deficit spend (Obstfeld, 1992) (Cecchetti, 2011). Investors, foreign and domestic, may see a large government debt as a sign of increasing economic stagnation, and refuse to lend or invest (Rubin, Orszag, Sinai, 2004). Government borrowing can increase real interest rates, making firms less likely to invest in the future, and more likely to charge larger markups for higher profits, decreasing both output and employment (Aloui, 2013). If demographic trends and economic forecasts indicate growing future deficits, long term interest rates can rise as well (Laubach, 2013). Increasingly high government debt raises the possibility of a runaway obligations triggering government default, along with economic catastrophe (Henderson, Hummel, 2014). Investors will react to sustained deficits and increasing debt accordingly (Obstfeld, 1992) (Greenlaw, 2013).

The cataclysmic effects of government borrowing are less likely when it is realized, in accordance with the above accounting identities (Section 1.F), the sale of bonds is not necessary for financing government operations:

> Money issuers such as the U.S. federal government spend simply by crediting bank accounts electronically. The Treasury's account, as a liability on the Fed's balance sheet, lies outside the definitions of reserve balances or the money supply. In effect, the government's spending creates money in the form of reserve balances and recipient deposits, since neither existed prior to the spending action… whenever the government spends, money is created; whenever the government receives tax payment, money is destroyed since payor deposits and bank reserve accounts are both debited in the process...Since the government's spending always creates its own government-issued fiat money, outside of self-imposed legal restrictions, there is no operational or financial constraint requiring that its spending be "prefunded" by cash on hand, income, asset sales, or debt issuance as other, non-currency issuing entities must do. (Fullwiler, 2007)

Because all government spending creates money, there is no operational financing constraint on government. This is perhaps the most important takeaway from Modern Money Theory, that, absent self-imposed restrictions[16], a government with the ability to print its own money cannot ever default out of necessity. The popular image of an out-of-control deficit growing to crippling proportions, or causing economic malaise[17] unrelated to excessive aggregate demand, is flawed for this reason.

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[16] This can range from either a fixed-exchange rate currency regime to a debt ceiling, such as that which exists in the United States.
[17] Modern Money Theory would point to this phenomena as the reason it is so difficult to find empirical evidence of high government debt impeding economic growth (Balázs, 2014).

Federal Debt Held By the Public

Percentage of GDP

(¹⁸)
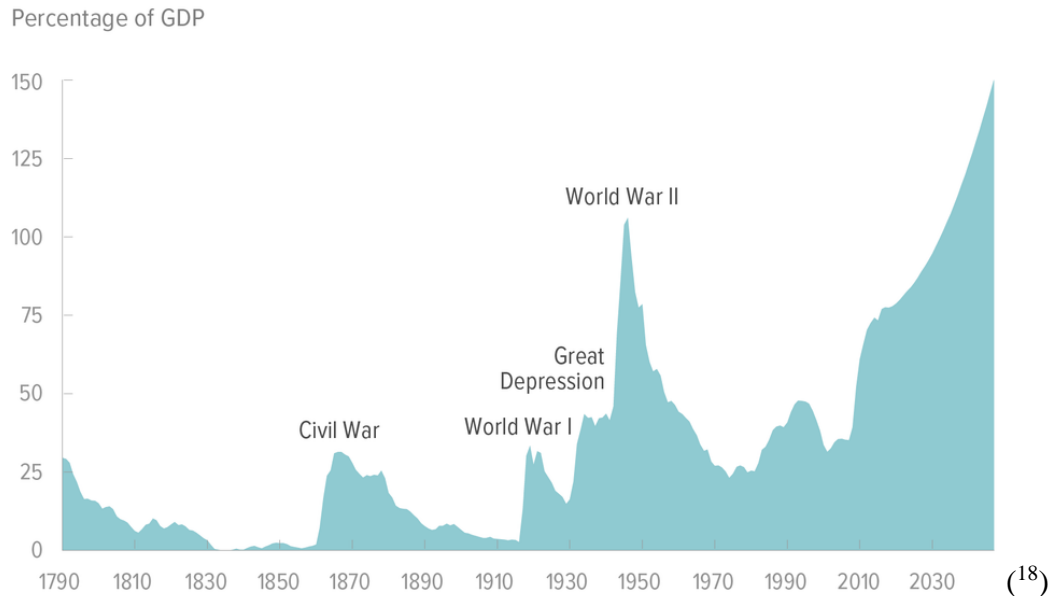
The formula for government deficits seems to bear this out. Imaging it thusly;

$$\Delta d = -s + d * [(r - g)/(1 + g)]$$

(19)

Where Δd = the yearly percentage point change in debt to GDP, s equals the primary deficit, or

deficit without interest payments, d is existing debt to GDP, r is the real interest rate, and g is the

real rate of GDP growth, for a deficit to ever become unmanageable, none of the factors which

affect the change in debt to GDP can ever change. That is, none of the four following

possibilities could ever occur:

      1. Inflation: this tends to increase tax revenues so that they grow faster than
government spending, thus lowering deficits… the (nominal) growth rate will be above
the interest rate, and reserve the dynamic so that the deficit ratio declines and the debt
ratio stops growing

      2. Austerity: government try to adjust its fiscal stance (increasing taxes and reducing
spending to lower its deficit)… (although) raising taxes might not change the

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[18] Image from (Congressional Budget Office, 2017)
[19] Equation from (Galbraith, 2011)

government's balance, as it could lower growth

    3.   The private sector will adjust its flows … in response to the government's stance… it is not possible to believe that as the government's debt ratio goes to ward infinity (which means that the private sector's wealth ratio goes to infinity) there is no inducted spending in the private sector… reducing government deficits as tax revenues rise

    4.   Government deficit spending and interest payments could increase the growth rate; it can be pushed above the interest rate…
Ignoring the dynamics discussed (above)…

 All the government needs to do is lower the interest rate it pays below the economic growth rate[20]. End of story; sustainability achieved. (Wray, 2015, p. 66)

There are too many practical roadblocks for a government to have no option but to default. Absent the intervention of the Federal Reserve to lower interest rates below the rate of economic growth, "government spends using keystroke, or electronic entries, on balance sheets. There is no technical or operational limit to its ability to do that. So long as there are keyboard keys to stroke, government can stroke them to produce interest payments credited to balance sheets" (Wray, 2015, p.66).

    This does not mean government can borrow excessively without potentially causing economic harm. Government consumption is still constrained by aggregate supply. Modern Money Theorists acknowledge "the potential for inflation – if the economy is driven beyond full capacity" (Wray, 2015, p.138). Wray lists several possible drawbacks to excessive government spending:

-Too much spending can cause inflation

-Too much spending could pressure the exchange rate.

-Too much spending by government might leave too few resources for private interests.

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[20](Galbraith, 2011) argues that this point alone is sufficient to demonstrate public debt can never reach unsustainability. The adoption of negative real interest rates, a policy choice of the government, will halt unimpeded growth of federal debt.

-Government should not do everything

-Impacts on incentives could be perverse

-Budgeting provides a lever to manage and evaluate government projects. (Wray, 2015, p.193-194)

The problem is not that government could not always afford to increase spending, but that if it does so excessively, it can cause some of the ill-effects proclaimed in Neoclassical economics[21], such as inflation as aggregate demand outpaces supply, or a collapsing exchange rate. Similarly, the lack of affordability constraint on government spending[22] does not mean that either of the essential fiscal functions of government, spending or taxation, are not without purpose.

1.H - *The Purpose of Taxes*

Taxes are necessary not only to ensure a currency is accepted and utilized (Section 1.B); "tax revenue moves countercyclically – increasing in expansion and falling in recession…taxes are needed to stabilize aggregate demand." (Wray, 2015, p.142) Balancing the collection of revenue and the level of spending allows a government to control inflation while ensuring full employment. Taxes are also useful for purposes of redistribution, and discouraging behavior considered harmful to society. Further benefits of taxation will be explored in (Section 1.N). But, "the (primary) purpose of raising tax rates is not revenue but rather to increase demand for currency…Government can always 'afford' to spend more (in the sense that it can issue more currency) but if it cannot enforce and collect taxes it will not find sufficient willingness to accept its domestic currency" (Wray, 2015, p.54).

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[21] "The absence of an 'affordability' constraint does not imply that government ought to spend without constraint" (Wray, 2015, p.196)

[22] The lack of affordability constraint on government spending is part of why prominent MMT advocates would prefer the CBO to focus on the effects of spending or taxation proposals on inflation, as opposed to the baseline level of government debt (Fullwiler, 2015).

1.I - *The Independence of the Federal Reserve*

The realization of money as a liability of the government extends to the institutions of

central banking, including the Federal Reserve. The accounting identities inherent to Modern

Money Theory rely upon the observation that, as far as the private sector is considered, the

proclaimed independence of the Federal Reserve from the Treasury, or from broader government

operations, does not matter. Consolidating the institutions of government and performing

accounting analysis by incorporating their comprehensive actions is the most accurate means of

measuring the effects of government policy:

> What MMT has shown… is that you can consolidate or deconsolidate and the balance
> sheets end up in exactly the same place… The Fed is not a private institution, but rather is
> a creature of congress and no more independent of government than is the Treasury, the
> Department of Defense… The Treasury gives value to the Fed's IOUs (reserves and
> FRnotes) because it is willing to accept those in tax payment…. Without the Treasury
> standing behind the Fed, we'd be back in the nineteenth century where bank notes did not
> clear at par. [Sic] (Wray, 2015, p.97)

The consolidation of the Federal Reserve and the Treasury are thus a necessary condition of

performing MMT accounting, and observing the true effects of government policy.

This is in sharp contrast to Neoclassical theory, in which the independence not only of the

Federal Reserve from the broader government, but of monetary policy from fiscal policy, is of

paramount importance to the IS-LM model. Neoclassicals note both the breadth and depth of the

Federal Reserve's independence from the rest of government (Piplica, 2015), and from levers of

fiscal policy:

> Stanley Fischer…. Has defined two different types of independence of central banks:
> instrument independence, the ability of the central bank to set monetary policy
> instruments, and goal independence, the ability of the central bank to set the goals of
> monetary policy. The Federal Reserve has both types of independence and is remarkably
> free of the political pressures that influence other agencies (Mishkin, 2013, p.312).

In the Neoclassical understanding, it is of vital importance that a Central Bank remain unencumbered from the rest of elected government, if only to avoid the political pressure Central Banks would face to allow for excessively inflationary monetary policy[23]. The ability of the Federal Reserve to purchase bonds necessitates central bank independence, in order to prevent the excessive printing of funds to finance government debt, and resultant inflation (Sargent and Wallace, 1981). Neoclassical theory would point to a time-inconsistency issue in a non-independent central bank (Kydland, Prescott, 1977). Central banks can announce a policy change, such as an effort to target a lower rate of inflation. As a result, new employment contracts will be drawn, with lower nominal wage increases, targeting the same real wage. But, after this has occurred, the economic landscape has changed. Even if the new higher inflation target was the optimal policy, the change in contracts and economic outlook may lead the central bank to conclude this is no longer the case. The central bank may elect to leave the inflation target as is. In this example, employers could use the lower real wages of workers to hire more. Though this change may be beneficial in the short run, in the long run, it can erode confidence in the central bank, and lead to inflation. This issue can be avoided with the adoption of strict formulas, such as the Taylor Rule (Eijffinger and De Haan, 1996). Anything which removes political temptations from the business of monetary policy is, in this view, a success.

MMT retains a much more nuanced view of the independence of a central bank from the broader government, focusing on an institution which many Neoclassicals consider among the

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[23] "A monetary decision maker is in a position only one stage removed from that of the directly elected politician. He will normally have been appointed to office by a politician subject to electoral testing, and he may even serve at the pleasure of the latter… the disproportionate likelihood of support and alienation of political associates, suggest that the utility-maximizing monetary decision maker will behave with a natural bias toward inflation. This bias is enhanced when the institutions of a nominally independent monetary authority are themselves thought to be subject to ultimate control and regulation by elected politicians" (Buchanan, 1977)

more independent[24] bodies, the Federal Reserve. Randall Wray specifically notes[25] the admission

of the Fed's own staff:

> First, let's be clear on what independence does not mean. It does not mean decisions and
> actions made without accountability. By law and by established procedures, the System is
> clearly accountable to congress—not only for its monetary policy actions, but also for its
> regulatory responsibilities and for services to banks and to the public.
>
> Nor does independence mean that monetary policy actions should be free from public
> discussion and criticism—by members of congress, by professional economists in and out
> of government, by financial, business, and community leaders, and by informed citizens.
>
> Nor does it mean that the Fed is independent of the government. Although closely
> interfaced with commercial banking, the Fed is clearly a public institution, functioning
> within a discipline of responsibility to the "public-interest." It has a degree of
> independence within the government—which is quite different from being independent of
> government.
>
> Thus, the Federal Reserve System is more   appropriately thought of as being
> "insulated" from, rather than independent of, political—government and banking—
> special interest pressures. (MacLaury, 1977)

Randall Wray would point to the practical fact that, for all of the discussion about the

independence of the Federal Reserve, the Federal Reserve remains an institution of Congress and

of State. It is subject to oversight and review, as are most public institutions under federal

authority. (Tymoigne, 2014) notes the litany of recent examples of operational

interconnectedness between the central bank and the broader government.

A blanket claim of the independence of the Federal Reserve further ignores the plethora

of interaction between fiscal policy and operations at the Fed. As discussed in (Section 1.E),

fiscal deficit spending will necessitate an increase in reserve offerings to maintain the Fed's

target interest rate. If the desire is to evaluate the complete effect of policy, the effect of a policy

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[24] (Cargill, 2013) explores this in more detail.
[25] (Wray, 2014a)

change must be measured throughout the consolidated government, including the Federal Reserve and the levers of monetary policy.

Consolidation of the central bank with the broader government allows for the actions of the Fed to be viewed in the context of actions of the government. MMT analysis thus lends itself to critical deviations from standard Neoclassical assumptions in regards to central bank operations:

> 1. Capital adequacy requirements have not and do not constrain money creation, and... do not necessarily serve to restrict the expansion of banks' balance sheets.
> 2. In a world of imperfect information, credit is rationed by banks and the primary determinant of how much they lend is not interest rates, but confidence that the loan will be repaid and confidence in the liquidity and solvency of... the system…
> Fiscal policy does not in itself result in an expansion of the money supply.... in practice the Government has no direct involvement in the money creation and allocation process. (Ryan-Collins, 2012, p.7)

These observations stem from the core function of banks. Modern Money Theory stresses the need to view deposits in a bank as IOUs on the bank, as opposed to one's own money. "Whilst banks do have cash vaults, the cash they keep there is not customers' money. Instead, the bank takes legal ownership of the cash deposited and records that they owe the customer... this is recorded as a liability of the bank to the customer" (Ryan-Collins, 2012, p.11).

1.J – *The Myth of Neoclassical Money Creation*

This lending and depositing process is what allows for banks to engage in money creation, through the extension of demand deposits. As banks trade liabilities through these deposits, the money supply dramatically expands (Ryan Collins, 2012, p.14). This is explained in the Neoclassical format through the multiplier model of money creation.

Under this model, the money supply is a function of reserve requirements, and multiple deposit creation. Imagining $100 million in reserves keystroked into an economy with a 10% reserve ratio, that spending will result in $90 million in demand deposits generated, while $10 million, or 10%, are stored as reserves. That $90 million in spending translates to $9 million in reserves, and $81 million in new deposits. This process continues until $100 million in keystroked reserves result in a $1 billion expansion in the money supply through new deposits. This yields a simple deposit multiplier:

$$\Delta D = \frac{1}{rr} X \, \Delta R \quad (26)$$

Where ΔD is the change in checkable deposits in the banking system, rr is the reserve ratio, and ΔR is the change in reserves. Though Neoclassical theory allows for deviation from this simple heuristic on account of the possibility of excess reserves or the decision of other actors to hold or spend reserves (Mishkin, 2013), the fundamental claim, that the Federal Reserve can concretely control the monetary base through reserve requirements, endures.

For this model to be valid, it would require that banks cannot lend without first having received a base of deposits, that altering the reserve ratio can allow governments to control bank reserves and the amount of credit in the economy, and that the money supply is under some mathematical limit on the basis of the reserve ratio and the base money supply. These assumptions fail when it is realized that "when a bank makes a loan it does not require anyone else's money to do so. Banks do not wait for deposits to make loans.... (they) are created by banks purely on the basis of their own confidence in the capacity of the borrower to repay" (Ryan-Collins, 2012, p.20).

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[26] Equation from (Mishkin, 2013)

Banks can elect, when profitable, to issue obligations on their behalf in the form of demand deposits, in exchange for regular payments on debt[27]. They are not constrained by their existing stock of reserves. This is partly a result of the Federal Reserve's promise to maintain an interest rate target. If "banks then need (or want) reserves, they go to the overnight interbank market or the central bank's discount window to obtain them. If the system… is short, upward pressure on the overnight rate signals to the central bank that it needs to supply reserve through open market purchases" (Wray, 2015, p.115). Banks can always obtain necessary reserves, meaning deposit creation will not be restrained by reserve ratios. If the Federal Reserve meets its promise to lend reserves and maintain a target interest rate, not only will banks be under no restriction other than profitability when electing to make loans; banks will not face any restrictions on deposits. Changing reserve requirements will not constrain demand deposit creation, and there is no theoretical mathematical limit to the money supply.

1.K - *Control of the Money Supply vs. Interest Rates*

That the Federal Reserve was uninterested or unwilling to hit targets for the money supply did not go unnoticed by Neoclassical economists (Judd and Scadding, 1982). It was this observation that led Neoclassical economists to conclude that, in the interest of its dual mandate, the Fed elects to control the rate of interest, instead of possibly controlling money stock:

> Although the Federal Open Market Committee had at least mentioned money growth targets in its formal policy directives ever since 1970, and had formally reported money growth targets to Congress since 1975, in practice there was little correspondence between the stated targets and actual money growth. Evidence from the 1970s shows that

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[27]"While reserve balances can only settle a bank's payments or aid the bank in meeting its reserve requirements, a loan is created endogenously at the request of a creditworthy customer and creates its own deposit. If loan creation or uncertain timing of deposit inflows has created additional reserve requirements for a bank, the bank's response is to borrow in the money markets. Whereas the money multiplier presumes that reserve balances set the limit on a bank's lending or money creation, real-world banks necessarily lend first and meet reserve requirements later" (Fullwiler, 2007)

the Federal Reserve did systematically adjust the Federal funds rate in the direction required to offset deviations of actual money growth from the targets, but that the magnitude of these adjustments was far too small to be effective for plausible estimates of the interest elasticity of money demand … By contrast, short-term nominal interest rates since 1982 have resumed the smooth pattern characteristic of the pre-1979 era, thereby suggesting a renewed role for interest rates—as before—at the center of the monetary policymaking process. (Friedman, 1988)

In this view, the Fed has chosen to focus on interest rates as opposed to the money supply. It does not make a terrible difference in the enactment of monetary policy; more recent economic models imagine a shadow LM curve, adjusting to the level necessary to hit the desired inflation target (Carlin and Soskice, 2005). This outcome is simply a choice of central banks, who could just as easily return to money supply targets and controls.

Modern Money Theory would respond by noting one of the most important functions of a central bank, acting as a clearinghouse for checks and transactions. From the Federal Reserve's own Board of Governors:

A reliable payments system is crucial to the economic growth and stability of the nation. The smooth functioning of markets for virtually every good and service is dependent upon the smooth functioning of banking and financial markets, which in turn is dependent upon the integrity of the nation's payments system. (Board of Governors, 2008)

This critical function involves processing checks, and ensuring that even if an institution does not currently have enough reserves to meet its obligations, it can borrow enough to cover liabilities at the discount window. This ensures the process of transaction can continue unabated (Fullwiler, 2008).

However, this function also prevents the Federal Reserve from controlling the money supply. "In practice… individual banks deficient in meeting reserve requirements automatically receive a central bank loan at a pre-specified penalty rate" (Fullwiler, 2008). A central bank cannot elect not to serve as a clearinghouse for financial institutions, lest it cease to serve its

most critical function. In doing so, it must guarantee a supply of reserves when necessary. A central bank does not choose to target an interest rate; it has no choice.

1.L - *The Function of Banks and the Creation of New Loans*

While the supply of reserves does not constrain lending, what does limit lending is the confidence banks have in the ability of borrowers to repay loans, and the broader system of banking:

> The amount of money created by commercial banks is currently not actively determined by regulation, reserve ratios, [or] the Government... but largely by the confidence of banks at any particular period in time... When banks are confident, they will create new money by creating credit and new bank deposits.... when they are fearful, they rein in lending, limiting the creation of new commercial money. (Ryan-Collins, 2012, p.22)

The money supply is therefore hardly dependent at all on government actions. This especially true when it is noted that the lion's share of money in circulation is not under government control through the Monetary base:
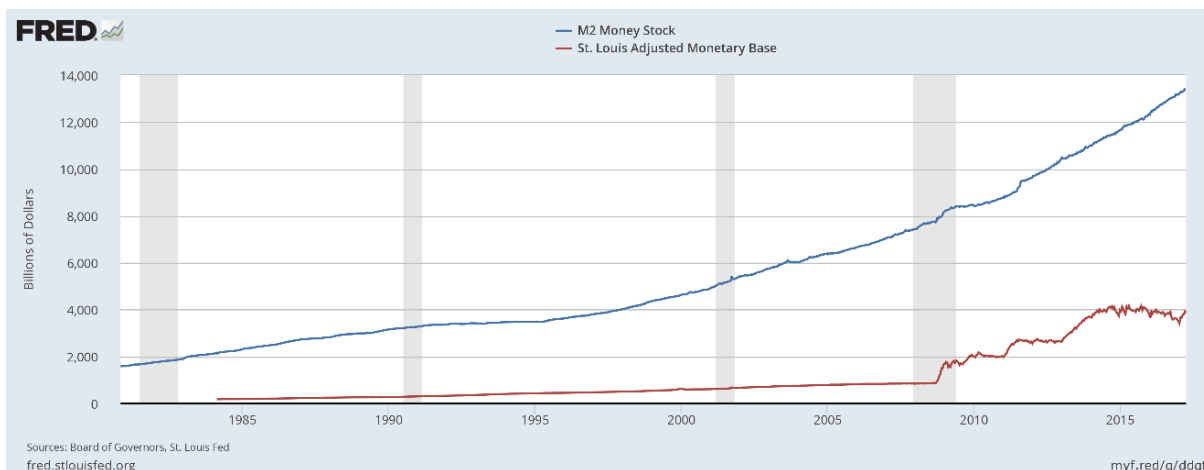
Government impact on the money supply is further diminished when it is noted that, as long as the Federal Reserve maintains a credible interest rate target, it will be impossible for the Government to meet any kind of money creation restriction. For this reason, it is ridiculous to imagine the Fed controlling the money supply, as opposed to interest rates. This realization is a

simple product of the benefits of fiat currency over artificial or imposed limits to monetary

policy.

    1.M - *Currency Regimes and the European Union*

It should be noted that MMT does not assert that absolutely any government can borrow

indefinitely without risking default. Aside from the risk of inflation brought about by excessive

aggregate demand (Section 1.G) many governments face limits on deficits as a result of their

decision to offer a fixed exchange rate for either a foreign currency, or a scarce commodity such

as gold. This handicaps the ability of government to guarantee either its ability to spend or its

own solvency:

> The point is that on a floating exchange rate, attempts to influence exchange rates are
> *discretionary*. By contrast, with a fixed exchange rate, government *must* use policy to try
> to keep the exchange rate from floating. The floating exchange rate ensures that the
> government has greater freedom to pursue other goals – such as maintenance of full
> employment, sufficient economic growth, and price stability. [sic] (Wray, 2015, p.161)

In the event that there is a run-on currency, government will face no choice but to accept a

depreciated currency, borrow foreign reserves, or deflate the economy (Wray, 2015, p.159). This

is not necessarily ideal for the purposes of ensuring full employment, or low, stable inflation, but

will allow the government to enforce its fixed currency regime.

    There are exceptions to the claim – that a floating currency will ensure increased "policy

space" (Wray, 2015, p.172), or the ability to manipulate deficits and the interest rate in the name

of societal welfare. The most prominent exception would be "a country that pegs its exchange

rate but has plenty of domestic policy space[28]; a country that pegged and defaulted on its

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[28] "China's huge foreign currency reserves enable them to operate with plenty of domestic policy space
even as it pegs its currency" (Wray, 2015, p.173). China's massive economic growth is responsible for

sovereign debt[29]; and a country that floats but is experiencing problems with government debt[30]"

(Wray, 2015, p.172). But a country which elects to avoid a fixed currency regime or voluntary

restrictions on borrowing, or money creation will have considerably more freedom to enact

monetary or fiscal policy than a fixed currency regime nation. This is an issue that has plagued

the European Union. No one member nation can print Euros, so no one member can guarantee

that it will not default on Euro denominated debt:

> While monetary policy was in a sense unified across the EMU (European Monetary Union,… Fiscal policy remained in the hands of each individual national government…We can think of the individual EMU nations as 'users' not 'issuers' of the currency; they are more like US states… Default on debt becomes a real possibility- and there are examples in the United States in which state and local government have either come close to default, or actually were forced to default" (Wray, 2015, p.177-178)

The reason for the possibility of runaway debt and default in EMU nations is the lack of

the freedom to control of one's currency offers (Wray, 2015, p.181). Although Japan has

continually faced a much higher debt to GDP ratio than that of Portugal, Ireland, Italy, Greece, or

Spain (Wray, 2015, p.181), it retains control of its currency and does not face any threat of

default or runaway interest rates[31]. This problem has, in the MMT framework, been compounded

in the European Union by restrictions on the ability of nations to engage in fiscal expansion

(Wray, 2011). For the European Union, ending the stagnation and the lack of security of the

effective fixed exchange regime would come through "a fiscal unification to match the monetary

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this disconnect; as current account surpluses shrink, affecting reserves, it will likely be to the benefit of the Chinese government to lift it's fixed exchange system.

[29] Wray cites the example of Russia's default on debt, a choice it made despite it's ability to meet the peg: "Russia had the *ability* to meet its notational rubble obligations but was *unwilling* to pay and instead *chose* to default" (Wray, 2015, p.174)

[30] The prominent current example would be Hungary, which "borrowed in foreign currency- just about half of its outstanding debt was in foreign currency [sic]" (Wray, 2015, p.176). In Hungary's case, debt was denominated in foreign-currency.

[31] (Mitchell, 2014)

union" (Wray, 2015, p.190), in effect, the creation of a European Fiscal Union to match the European Monetary Union. For Modern Money Theory[32], the ideal monetary structure will almost always involve a floating rate and sovereign currency, allowing for the "most policy space; government can 'afford' anything for sale in its own currency. [There is] No default risk in its own currency" (Wray, 2015, p.191).

1.N - The Purpose of Taxation without a Budget Constraint

Taxes serve several purposes[33] beyond driving currency (1.B) or stabilizing aggregate demand (1.H). Taxes can:

> Discourage bad behavior [such as]…pollution of air and water, use of tobacco and alcohol… [or] allocate the costs of specific public programs to the beneficiaries. For example, it's common to tax gasoline so that those who use the nation's highways till pay for their use… [the gas tax] is designed to make those who will use highways think twice about their support for building them…. [Government\ wants to raise the cost to those who will commit the 'sin' of smoking. (Wray, 2015, p.143)

These conclusions lead to the guiding principle of taxation in Modern Money Theory, that "tax rates should be set so that the government's budgetary outcome…is consistent with full employment" (Wray, 2015, p.144).

Taxes themselves have taken many forms in monetary history: "In recent centuries [the sovereign] ... relies increasingly on taxes, although as we go back in time, other liabilities such as

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[32] Other prominent examples of a managed - currency regime prompting chaos include the strict adherence to the Gold Standard during the depression: "the rigid adherence to the standard, the consequent inability for exchange rates to adjust to reflect changes in international competitiveness and the high interest rates required to defend currencies from speculative attacks have been blamed for deepening the Great Depression (Ryan-Collins, 2012, p. 46)

[33] The purpose of the tax system is one of several tenants of MMT which date back to the early 20th century, with many of Wray's conclusions (Wray, 2015, p.143) regarding taxes finding basis in Beardsley Ruml's "Taxes for Revenue are Obsolete", 1946.

fines, fees, tithes, and tribute were more important" (Wray, 2015, p.148). Still, the ideal taxes, that most effectively drive currency, are those which are "broad-based and would drive the currency" (Wray, 2015, p.152). By affecting as many individuals as possible, while being impossible to avoid, such a tax is borne by as much of the populace as possible, accomplishing the goal of inducing the population to use the currency. Imagining a tax paid by relatively few individuals, such as the cigarette tax, would not accomplish this goal. Anyone who does not smoke would have little need for the currency, only induced to acquire it by the needs of addicts (Wray, 2015, p.152). If ultimately successful, such a tax would reduce smoking to the point that no one needed the currency at all.

Because taxes succeed in reducing the incentive to acquire the good or commit the activity in question, certain taxes are not as effective in either promoting general welfare, or driving currency. As a result, Modern Money Theory would specifically point to three examples of especially harmful taxes:

> Payroll taxes, consumption taxes, and corporate taxes… Payroll taxes favor robots over human workers… where production is highly competitive with foreign production, it is likely that the employer portion of payroll taxes is largely born by workers [in the form of lower pay]… it is probably not in the public interest to discourage work...[taxes on consumption] tax away the purchasing power that would allow [citizens] to achieve higher living standards…Much of the corporate tax is passed backward to employees and forward to consumers in the form of higher prices… in an idealized competitive market, all investments should earn the same after tax profit rate…. We'd expect most of the tax to be passed through lower wages and consumers through higher prices. (Wray, 2015, p.154-155)

This is not dissimilar from the Neoclassical interpretation of the harm of the payroll tax[34], or

Neoclassical proposals for lower[35] (or no[36]) corporate tax burdens. Aside from a strong

disagreement with proposals for a new VAT (Graetz, 2014), Modern Money Theory would

broadly agree with the Neoclassical idea to tax activities which are less desirable. But, if the goal

of such a tax is to primarily drive a currency, it must also be difficult or impossible to avoid.

> Wray discusses one of the ideal taxes, a remnant of colonial history:
>
> A head tax or a hut tax… almost all of us need our home to live in. It is an exceedingly broad-based tax. It would drive the currency…(it would penalize) the environmental 'foot print' – the land that is cleared, the construction materials, the furnishings, and - most relevantly - the energy used to heat and cool our home" (Wray, 2015, p. 152)

Such a tax is but one example of a broad, impossible-to-avoid tax. Once a currency has the

confidence and backing of the public, it is not necessary to limit taxes to only those which are

broad, or do not discourage usage. "Once you've monetized an economy such that a large

portion of the members must work for money incomes in order to buy the necessities of life….

Then you can move to other kinds of taxes" (Wray, 2015, p.151). This is why income taxes,

despite discouraging an activity necessary for participation in industrialized society and

production, drive currency. Once an economy has been monetized, it is possible to focus on

additional purposes of taxes, such as discouraging bad behavior (Wray, 2015, p.153).

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[34] (Kugler, 2009)
[35] (Shuai, Chmura 2013)
[36] (Masso, Merikull, 2011)

Chapter Two – Helicopter Money and a Government IOU

2.A – *The Theory of Helicopter Money*

'Helicopter money' has gained empirical popularity as a powerful means of fighting

chronic deflation. Beyond Milton Friedman's original image of a helicopter dropping money

onto the public to increase aggregate demand, Ben Bernanke expanded the scope of such a policy

to any means of centrally financed fiscal policy in a speech before the National Economists

Club:

> In practice, the effectiveness of anti-deflation policy could be significantly enhanced by cooperation between the monetary and fiscal authorities. A broad-based tax cut, for example, accommodated by a program of open-market purchases to alleviate any tendency for interest rates to increase, would almost certainly be an effective stimulant to consumption and hence to prices. Even if households decided not to increase consumption but instead re-balanced their portfolios by using their extra cash to acquire real and financial assets, the resulting increase in asset values would lower the cost of capital and improve the balance sheet positions of potential borrowers. A money-financed tax cut is essentially equivalent to Milton Friedman's famous "helicopter drop" of money.
>
> Of course, in lieu of tax cuts or increases in transfers the government could increase spending on current goods and services or even acquire existing real or financial assets. (Bernanke, 2002)

The term, 'helicopter money', belies the sophistication of modern policy arguments. Today,

advocates imagine, "a helicopter drop of money [as] a permanent/irreversible increase in the

nominal stock of fiat base money with a zero-nominal interest rate, which respect to the

intertemporal budget constraint of the consolidated Central Bank and fiscal authority/'Treasury'"

(Buiter, 2014). The term itself has graduated into several more technical names, such as

"Monetary Finance" (Turner, 2015), or a "Money-Financed Fiscal Program" (Bernanke, 2016).

This has occurred in conjunction with the increasing acceptance within Neoclassical theory of

the potential for helicopter money to promote economic growth through increased aggregate

demand.

In times of chronic, sustained deflation, helicopter money offers a unique means of

providing monetary stimulus when traditional means of executing monetary policy have come up

short. This stimulus can take on several forms:

> -It could involve either a tax cut or a public expenditure increase which would not
> otherwise occur.
> -It can be one-off or repeated over time.
> -And it would typically involve the creation of additional deposit rather than paper
> money. This would be initially in the form of deposit money in the government's own
> current accounts which would then be transferred into private deposit accounts either as a
> tax cut or through additional public expenditure. (Turner, 2015)

Turner imagines a helicopter drop occurring in any number of ways, each serving as a means of

transferring dollars created by Federal Reserve keystrokes to the public:

> -The central bank directly credits the government current account (held either at the
> central bank itself or at a commercial bank) and records as an asset a non-interest-bearing
> non-redeemable "due from government" receivable
> - The government issues interest-bearing debt which the central bank purchases and
> which is then converted to a non-interest-bearing non-redeemable 'due from government'
> asset
> -The government issues interest-bearing debt, which the central bank purchases, holds
> and perpetually rolls over (buying new government debt whenever the government
> repays old debt), returning to the government as profit the interest income it receives
> from the government. [Sic] (Turner, 2015)

Because, in each case, the resultant government balance sheet is the same, the monetary base is

increased, and the government has not incurred additional debts to be redeemed, each of these

actions is functionally equivalent. This list would include the simplest manifestation of

helicopter money, a direct credit of currency into debit accounts through federal reserve

keystrokes.

2.B – *The Wealth Effect, Ricardian Equivalence, and Irredeemability*

These actions all, in this way, serve to enact the goal of its advocates, stimulating

aggregate demand. In fact, "monetary finance of increased fiscal deficits will **always** stimulate

aggregate nominal demand, both because it will induce a direct impact on nominal demand and

because it produces an increase in private sector perceived and actual nominal net wealth [sic]"

(Turner, 2015). Traditional fiscal stimulus is limited in its effectiveness by the fact that such

stimulus must later be paid for in taxes, restricted by Ricardian Equivalence:

> If we assume rational forward-looking expectations, and if the current generation's assessment of its net wealth is connected to that of future generations by a chain of operative intergenerational transfers, then an increase in government bonds held by the household sector would not increase household perceived net wealth, since households would rationally anticipate the taxes required to meet the future debt servicing burden. (Turner, 2015)

Ricardian Equivalence dates back to a series of papers published in the 1960's[37] which pointed

out, because any incurred deficits must eventually be paid back through either lower future

spending, or a higher future tax burden, households will reduce their spending habits in reaction

to any fiscal expansion, to account for future fiscal contraction. Robert Barro constructed a series

of models of private sector wealth to argue that any deficit spending will have no wealth effect

on the private sector, as the private sector must adjust to a higher future tax burden. This lead

Barro to conclude:

> There would be no marginal net-wealth effect of government bonds, so long as there existed an operative chain of intergenerational transfers which connected current to future generations. Net-wealth effects associated with imperfect private capital markets and with a government monopoly…. Depend on the assumption that the government was more efficient… than the private market… the introduction of government transaction costs for bond issue and tax collection implied that the net-wealth effect of government bonds could be negative… (thus) there is no persuasive theoretical case for treating government debt… as a net component of perceived wealth. (Barro, 1974)

This contradicts both Modern Money and Neoclassical economic theory in a number of ways.

Modern Money Theorists would point out that the function of the deficit is to provide financial

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[37] See Chapter XVII, in "The Works and Correspondence of David Ricardo", 2004

wealth to the non-government sector. Because dollars are a denomination of the government,

there is no necessary need for a debt obligation to be paid for with future fiscal contraction

(Lerner, 1943). Neoclassicals have noted that Ricardian equivalence fails both theoretically[38] and

empirically (Evans, 1993). While there are isolated cases of slight empirical evidence of a

Ricardian Equivalence effect, it is far from conclusive, and reviews of literature have found the

core assumptions of Ricardian Equivalence to be unrealistic (Ricciuti, 2003).

However, because it has not been conclusively refuted, in Neoclassical models such as

those that validate the effectiveness of helicopter money (Gali, 2014), Ricardian Equivalence

remains a drag on the effectiveness of traditional expansionary fiscal policy. Helicopter money is

under no such impediment. Because dollars are a liability of the government, providing for fiscal

expansion through an expansion of the monetary base will increase private sector net wealth,

uninhibited by expectations of a future tax increase. As Buiter notes:

> Because of its irredeemability, state-issued fiat money is indeed net wealth to the private
> sector, in a very precise way: the initial stock of base money plus the present discounted
> value of all future net base money issuance is net wealth, an 'outside' asset to the private
> sector, even after the intertemporal budget constraint of the State [which includes the
> Central Bank] has been consolidated with that of the household sector. (Buiter, 2014)

In the Ricardian accounting identity constructed by Turner, and the model constructed by

Buiter, monetary finance always increases the wealth of the private sector. It will have a 100%

success rate in stimulating aggregate demand. Unlike traditional fiscal or monetary stimulus,

"this finding is applicable as much when the economy is stuck in a liquidity trap at the zero

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[38] Paul Krugman has noted that, even when assuming consumers have perfect foresight and knowledge, Ricardian Equivalence models make no allowance for a temporarily expansionary fiscal policy. If Government engages in a year long expansion of spending, the perpetual tax burden implied by that spending must be less than the amount suggested, meaning consumer spending would fall by less than the size of the expansion, meaning the effort is still expansionary (Krugman, 2009).

lower bound as when it is far away from the ZLB" (Turner, 2015). This is due to the wealth

effect of such stimulus observing no dependence on either real or nominal interest rates. The fact

that both money and bonds are liabilities of the government means that the effect of such

stimulus, absent relatively outlandish assumptions[39], will always be to stimulate aggregate

demand. For advocates of helicopter money, "monetary base is an asset for the private sector, but

for the government it is a purely notional liability [with NPV equal to zero] since it is

irredeemable and non-interest-bearing" (Turner, 2015).

2.C – *Liquidity Trap and the Superiority of Helicopters to Traditional Monetary Policy*

Because helicopter money does not suffer from the effects of Ricardian Equivalence and

expectations of a higher future tax burden, it can always be assumed to be superior to traditional

debt-financed stimulus. Turner points to the "[widespread belief] that the potential for debt

financed stimulus is constrained by current and future debt burdens, and fiscal consolidation

programs [in the Eurozone, the UK, the US and Japan]" (Turner, 2015), to emphasize the risk of

Ricardian Equivalence diminishing the effect of fiscal stimulus on aggregate demand.

Comparing helicopter money to a proposal by Brad Delong and Larry Summers to engage in

fiscal expansion, Turner notes that not only would, "money finance… have exactly the same

multiplier effects as debt financed deficits… but whereas there might be some circumstances

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[39] "The only conditions under which money finance will fail to stimulate nominal demand… would arise if the private sector… expected the government in future to reverse the operation, running future fiscal surpluses and using them not to repay debt, but to retire money from circulation…(or) the scale of monetary finance were so massive as to produce a hyperinflation in which almost all private agents cease to attach any value to the newly created money" (Turner, 2015). Turner later describes a means by which the government could employ helicopter money while containing to control inflation through Federal Reserve policy, making either outcome unlikely.

where debt finance is offset by Ricardian Equivalence effects, in the case of money finance there is no such possibility" (Turner, 2015).

Helicopter money thus appears to offer several advantages over traditional monetary policy. Traditional expansionary monetary policy is handicapped by the existence of a liquidity trap. During a liquidity trap, when the real interest rate has fallen to zero, the lowest a rate can go before actors are paying for the privilege of lending money, further open market operations may expand the money supply. However, they will not lower interest rates, as outward movement of the LM curve does not affect either the equilibrium interest rate, or the resultant level of output[40].
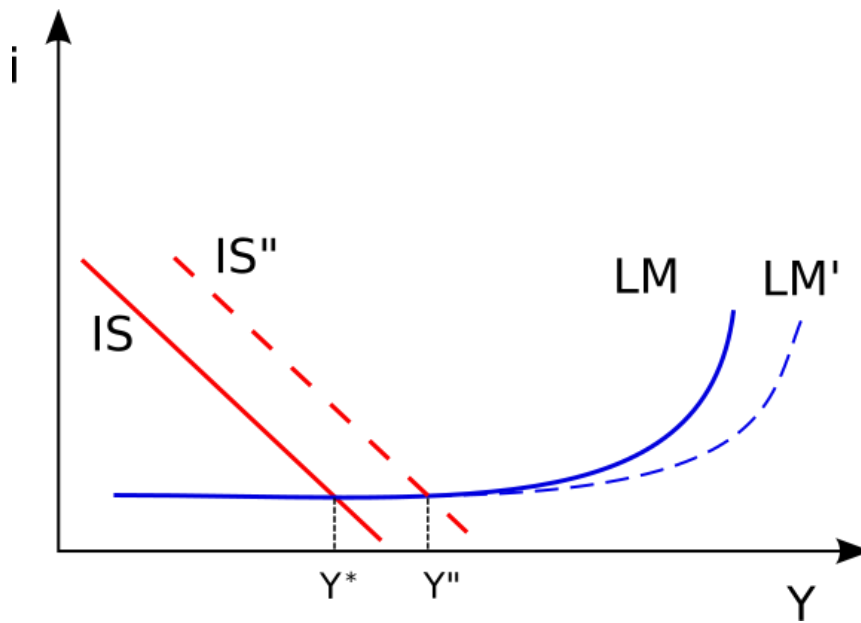
Because of the difficulty a central bank has in manipulating the large number of actors affected by monetary policy, even the offering of forward guidance as to future interest rates[41] is liable to ineffectiveness[42] in the face of deflation. For this reason, Turner concludes that, "while there

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[40] The nature of the Zero Lower Bound and a liquidity trap is explored in more detail in Chapter 3.
[41] A policy explored theoretically in (Woodford, 2012), and by the President of the Federal Reserve Bank of San Francisco in a 2016 speech.
[42] "Even within a rational expectations model, we face a circular problem of multiple equilibria, in which private agents have to be certain of the central banks future intent, and enough agents have to be certain

exists a sound theoretical case for believing that there is a possible path by which pure monetary policy might, through its impact on expectations, generate sufficient increase in aggregate nominal demand and inflation to pull an economy out of a liquidity trap… There are also many other paths in which the attempt to use purely monetary stimulus … will prove ineffective" (Turner, 2015). Because, in a liquidity trap, it is likely that longer-term interest rates as well as short-term interest rates have approached zero, quantitative easing is unlikely to observe assured success as well. "It is therefore possible that while money financed deficits will always stimulate aggregate nominal demand, the capacity to stimulate nominal demand via quantitative easing may be subject to declining marginal returns and may reach a point of close to exhaustion" (Turner, 2015).

2.D – *Bernanke's MFFP and a Hypothetical Economy*

Ben Bernanke has expanded upon the usefulness of helicopter money, applying it to recent episodes of chronic deflation. Noting that, "it has the attractive feature that it should work even when more conventional monetary policies are ineffective and the initial level of government debt is high" (Bernanke, 2016), Bernanke has attempted to address both the hazards and opportunities inherent to employing what he refers to as a Money-Financed Fiscal Program, or MFFP. This is accomplished through a hypothetical economy operating below potential:

> Imagine that the U.S. economy is operating well below potential and with below-target inflation, and monetary policy alone appears inadequate to address the problem… Congress approves a $100 billion one-time fiscal program, which consists of a $50 billion increase in public works spending and a $50 billion one-time tax rebate. In the first

that enough other agents share their expectations, as to make it rational for them to hold expectations of an increase in inflation" (Turner, 2015). Turner stresses the relevance of the failure to adequately guarantee expectations can be managed in accordance with Paul Krugman's proposal for future interest rate targeting, as well as Krugman's own admission that expectations may not change with traditional monetary policy alone, and would require fiscal intervention.

instance, this program raises the Federal budget deficit by $100 billion. However, unlike standard fiscal programs, the increase in the deficit is not paid for by issuance of new government debt to the public. Instead, the Fed credits the Treasury with $100 billion in the Treasury's "checking account" at the central bank, and those funds are used to pay for the new spending and the tax rebate. Alternatively and equivalently, the Treasury could issue $100 billion in debt, which the Fed agrees to purchase and hold indefinitely, rebating any interest received to the Treasury. In either case, the Fed must pledge that it will not reverse the effects of the MMFP on the money supply. (Bernanke, 2016)

This situation yields a distinct advantage over the more typical methods of stimulating aggregate demand. For Bernanke:

> The direct effects of the public works spending on GDP, jobs, and income… the increase in household income from the rebate, which should induce greater consumer spending… a temporary increase in expected inflation, the result of the increase in the money supply. Assuming that nominal interest rates are pinned near zero, higher expected inflation implies lower real interest rates, which in turn should incentivize capital investments and other spending… and the fact that, unlike debt-financed fiscal programs, a money-financed program does not increase future tax burdens. (Bernanke, 2016)

While traditionally financed deficits would enjoy the first two effects of monetary financed deficits, they would not feature the wealth effects, or the resultant effects on inflation. Combined with a promise from the Fed to increase the inflation target (Bernanke, 2016), helicopter drops thus provide an assured means of stimulating aggregate demand.

In this argument, the major imagined drawback to money financing, or helicopter money, is a relative lack of research. Because of the longstanding taboo[43] surrounding helicopter money, few empirical models which attempt to quantify the amount necessary to provide appropriate monetary stimulus exist. Those that do seem to conclude that, "Money-Financed tax cuts also appear to be more effective countercyclical policies than their debt-financed counterparts when the ZLB is binding[44]" (Galí, 2014). However, without adequate empirical evidence, it is difficult

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[43] Tony Yates wrote, "it's a measure of how far the crisis has led some to think the previously unthinkable that an name mentioned as a candidate for the Governorship of the Bank of England is now writing forcefully about the advantages of helicopter money (Yates, 2016).

[44] This is ascribed to a lower nominal rate path because of accumulated liquidity, and higher expectations of inflation, lowering real interest rates (Gali, 2014).

to know the necessary scale of such policy, namely the scale required to provide adequate stimulus while controlling for inflation. Turner notes that a self-reinforcing cycle of higher inflation expectations could lead to still-higher inflation. There exists the possibility of, "agents [anticipating] that the impact will indeed by skewed towards higher inflation, rather than… the increase in output…. They may also fear that the response of the authorities to the disappointing output response might be to try another… helicopter drop" (Turner, 2015). None of these concerns, however, constrict the ability of central banks to commit to employing only the scale of a helicopter drop that is necessary to adequately stimulate aggregate demand, continuing to manage inflation through manipulation of the interest rate. They merely complicate the execution of a helicopter drop, as opposed to limiting its ability to stimulate aggregate demand.

2.E – *The Independence of the Central Bank and Helicopter Money*

A more pressing concern for enthusiasts of monetary financing is the removal of the independence of monetary policy. "The central issue with money finance therefore is a political one – whether we are capable of designing a set of political economy rules, responsibilities and relationships which can allow us to obtain the technically possible benefits of money finance while constraining the dangers of excessive misuse" (Turner, 2015). The fear of governments abusing the privilege of money creation to promote excessive, politically fortuitous aggregate demand is what has motivated many central bank charters to ban the practice of monetary finance[45]. Bernanke proposes addressing this concern by allowing the Fed to determine the size of a monetary allocation, with "the Fed… [using] its authority to add funds to the [Treasury] account only when the FOMC assessed that an MFFP of specified size was needed to achieve the

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[45] "Many central bank mandates therefore make monetary finance illegal (e.g. ECB 26 Article 123.1), and even when not prohibited by law, monetary finance is considered a taboo policy option" (Turner, 2015).

Fed's employment and inflation goals" (Bernanke, 2016). Turner imagines strict regulations and protocol regarding the usage of monetary finance, through formal recommendation from the central bank:

> The guiding principle should be that the specific measures implemented should be of a form which makes them credibly one-off – tax cuts and specific investment programmes might meet this criterion, but increases in ongoing entitlement programs or other forms of current expenditure… would certainly not. But the decision on precise allocation would have to be for the elected government, not the nonelected bank, given the inherently political nature of decisions which have distributional implications. (Turner, 2015)

Though, "monetary finance does imply greater coordination between monetary and fiscal authorities than applies in relation to movements in the short-term interest rate" (Turner, 2015), it does not necessarily mean ending the practice of ensuring the Fed maintains control of monetary policy. Proposals to directly debit the checking accounts of citizens, a more direct method of executing helicopter money, seem to avoid these issues entirely (Muellbauer, 2014). The concerns enumerated by advocates of monetary finance seem to focus on how dangerously effective it would be at increasing aggregate demand.

2.F – *Government Bonds vs. Fiat Currency as an IOU*

The major point of contention between followers of MMT and devotes of helicopter money stems from what believers in MMT cite as an erroneous distinction between fiscal and monetary policy. In the balance sheets inherent to Modern Money Theory (Section 1.F), "helicopter drops of money raise the net financial assets (via income increases)[46] of the non-

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[46] Both traditional fiscal policy and a helicopter drop of money increase wealth through the provision of money to the private sector, as opposed monetary policy, which induces private citizens to spend more through increased borrowing. (Fullwiler, 2013a)

government sector, which is exactly what fiscal policy does but not what monetary policy does"
(Fullwiler, 2013a).

In this light, the helicopter drop functions equivalently to regular fiscal policy. Imagining the helicopter drop as a direct crediting of the account of consumer accounts concerned[47]:

Private Individual

Assets	Liabilities/Equity
+Currency	+Net Worth

The debiting of the account of the individual has increased their net worth. Shortly thereafter, the newly keystroked money is deposited at a bank, creating new reserves:

Private Individual

Assets	Liabilities/Equity
+Deposit	+Net Worth

Private Bank

Assets	Liabilities/Equity
+Reserves	+Deposit

The final effect is to "increase… the net worth of the private individual" (Fullwiler, 2010). This action results in a balance sheet identical to the balance sheet created by traditional deficit spending.

Imagining the government granting an individual a tax cut, which is then deposited into their bank account as reserves, yields the same T-Accounts for all concerned as before:

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[47] Accounting Identity from (Fullwiler, 2010)

	Private Individual			Private Bank

Assets	Liabilities/Equity
+Deposit	+Net Worth

Assets	Liabilities/Equity
+Reserves	+Deposit

In this accounting, helicopter money and traditionally financed deficits serve the same purpose, and act in the same manner; "in terms of the effect on net financial assets for the non-government sector, the figures show that there is no difference between 'monetization' or bond sales besides potential effects on the Federal funds rate that depend on the Fed's chosen method of achieving its target" (Fullwiler, 2009). In the context of Modern Money Theory, any distinction between means of financing government deficits, especially on account of their effect on consumer wealth, is meaningless. The only difference to the resultant accounting identity comes from the buyer of the bond, whether they are a non-bank or bank entity, yielding no change in wealth or effectiveness of the stimulus in regards to aggregate demand[48]:

Effect of Traditional Deficit Spending financed by Bond Sale to Bank:

Private Individual   Private Bank

Assets	Liabilities/Equity
+Deposit	+Net Worth

Assets	Liabilities/Equity
+Reserves -Reserves +Treasuries	+Deposit

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[48] Accounting Identities from (Fullwiler, 2009)

Effect of Traditional Deficit Spending financed by Bond Sale to Non-Bank:

Private Individual

Private Bank:

Assets	Liabilities/Equity
+Deposit -Deposit +Treasuries	+Net Worth

Assets	Liabilities/Equity
+Reserves -Reserves	+Deposit -Deposit

If the bond is sold to a Bank, the bank will have necessarily exchanged some of its reserves for a treasury. If the bond is sold to an individual, that individual will have necessarily exchanged some of their bank deposits for an interest-yielding treasury. The bank will, as a result, enjoy fewer reserves, exchanged for a lesser deposit obligation. Because a lack of reserves does not constrain money creation (Section 1.J), this will not affect spending or lending by the bank.

The only qualm among MMT theorists about this lack of distinction would be in regards to the interest paid by the treasury on bonds, an effective transfer of wealth from the government sector to the private sector. Because a helicopter drop would directly increase reserve balances, the Fed would soon counteract the increase in reserves through open market operations, in order to preserve their target interest rate. Traditionally, selling treasuries to the central bank involves crediting the Fed with interest payments, revenue which is returned to the treasury by the Federal Reserve at the end of the year, per its charter. Any change that affects the amount credited to or from the treasury, such as that which might be necessitated by a change in reserves, would amount to a fiscal operation, affecting the Treasury's yearly deficit.

2.G – *Helicopter Drops are Fiscal Operations*

If you adopt the MMT view of fiscal policy, as "[anything] which alter[s] the non-government sector's holdings of net financial assets" (Fullwiler, 2010), it is relatively simple to

demonstrate the degree to which a helicopter drop, as popularly imagined, is not atypical from

traditional fiscal expansion. This does not mean that MMT would stand in opposition to

helicopter money[49]. Scott Fullwiler and fellow Modern Money Theorists simply believe there are

serious inconsistencies in the Neoclassical argument for its superiority to traditional fiscal

expansion.

These inconsistencies extend to the counter-arguments against the adaptation of

helicopter money in some form or another. For all the talk of the need to reformat the Federal

Reserve charter, or otherwise break social or political norms to enact helicopter money, the issue

of coordination between the non-federal and Federal Reserve government is pointless. In the

event that the treasury runs a deficit financed through traditional means, the result will be a bond

debt serviced to the private sector at roughly the Fed target rate, as "T-bills essentially arbitrage

with the Fed funds rate" (Fullwiler, 2015). If the Federal Reserve elects to purchase government

bonds on the open market in coordination with equal fiscal expansion, government debt is

swapped for reserve balances earning interest at roughly the Fed's target rate. The result is

exactly the same; the government pays an equal rate of interest to service debt. Because the

Federal Reserve maintains a target interest rate, any change in the exogenous money supply will

not affect growth or aggregate demand. In essence, "the Treasury doesn't need 'coordination'

with the Fed to carry out helicopter drops because helicopter drops are essentially fiscal

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[49]Fullwiler himself writes that he "certainly (doesn't) want to stand in the way of more fiscal policy" (Fullwiler, 2015). The general consensus of both Keynesians and Post-Keynesians regarding the need for further fiscal expansion continually appears in their arguments, most especially in Paul Krugman's initial response to MMT in 2011: "In a way, I really should not spend time debating the Modern Monetary Theory guys. They're on my side in current policy debates, and it's unlikely that they'll ever have the kind of real — and really bad — influence that the Austrians have lately acquired" (Krugman, 2011)

operations already… Coordination… adds virtually nothing of macroeconomic significance compared to fiscal deficits accompanied by T-bills" (Fullwiler, 2015).

The imagined superiority of helicopter money is thus a direct result of a misconception of Neoclassical economists. If, as Adair Turner proclaims, money is, "for the government…. A purely notional liability (with NPV equal to zero) since it is irredeemable and non-interest-bearing" (Turner, 2015), there might be some advantage to helicopter money. But, the function of money is to serve as an obligation of the government, to be redeemed for tax obligations. The treasury accepts money as payment of taxes. When that money is deposited into a bank, it becomes a reserve, with interest paid at the Federal funds rate. For either the government or the private sector, financing deficit spending through traditional means, or through helicopter drops, will not affect the final sectoral balance, or aggregate demand:

> The second law of Functional Finance is that the government should borrow money only if it is desirable that the public should have less money and more government bonds, for these are the effects of government borrowing. This might be desirable if other- wise the rate of interest would be reduced too low (by attempts on the part of the holders of the cash to lend it out) and induce too much investment, thus bringing about inflation. Conversely, the government should lend money (or repay some of its debt) only if it is desirable to increase the money or to reduce the quantity of government bonds in the hands of the public.... any excess of money outlays over money revenues, if it cannot be met out of money hoards, must be met by printing new money, and any excess of revenues over outlays can be destroyed or used to replenish hoards. (Lerner, 1943)

As long as the effectiveness of helicopter money rests on the wealth effect imagined by Turner, it will have little to no practical difference in effect on aggregate demand. The only difference would be a slightly stronger transfer in wealth occurring under traditional fiscal expansion, due to the payment of interest on treasuries.

2.H – *The Safe Asset Shortage*

Neoclassical argument would go as far to suggest that helicopter money creates unnecessary drag on the economy, by exacerbating the ongoing shortage of safe assets.
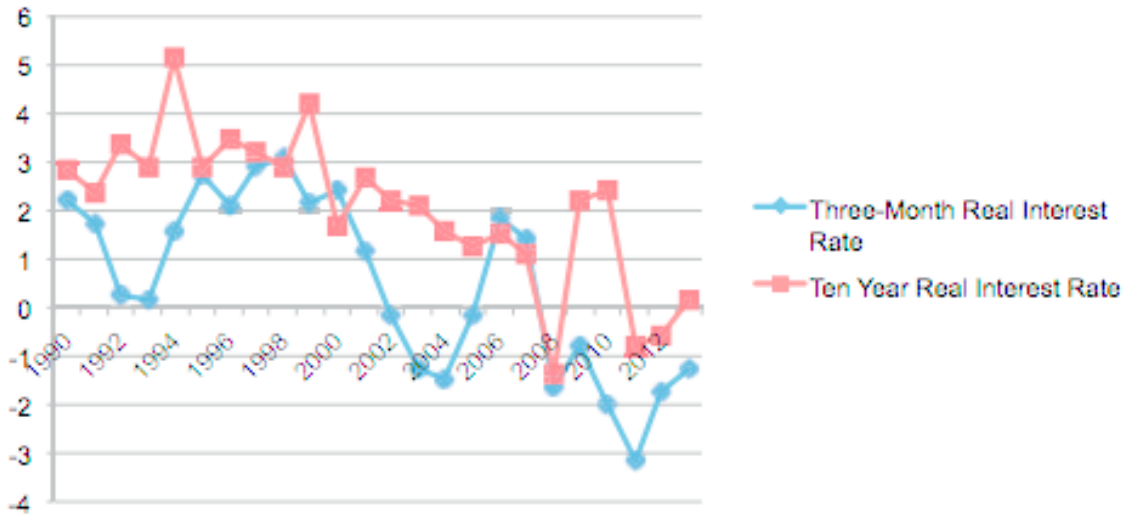
Source: IMF (2014).   [50]

If real interest rates are interpreted as the inverse of the degree to which the supply of

ultra-safe bonds does not meet demand, the collapse in interest rates of the past 20 years can be

interpreted as a critical shortage of such safe assets. This can increase financial instability,

forcing investors into riskier than ideal bets, heightening global financial instability. "Safe public

debt…. plays a central role in a safe asset shortage episode, as typically the government owns a

disproportionate share of the capacity to create safe assets… At zero nominal interest rates, there

is excess demand for safe assets and excess supply of goods ... Because of the deficit in

aggregate demand, output and income decrease, further reducing aggregate demand" (Caballero,

2014). By failing to create a safe storage of wealth through US bonds, helicopter money risks

exacerbating this problem, whereby "the decline in the long-run neutral real interest rate

increases the likelihood of financial instability and the likelihood that the economy will run into

the lower bound on nominal interest rates… policymakers can mitigate these risks by choosing to

maintain higher levels of public debt" (Kocherlakota, 2015).

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[50] Image from (Caballero, 2014)

The weight of these arguments does necessarily mean that MMT would stand in

opposition to helicopter money[51] in isolation; Scott Fullwiler and fellow Modern Money

enthusiasts simply believe there are serious inconsistencies in the Neoclassical argument,

especially when Neoclassicals who oppose helicopter money address the policy proposal.

2.I – *Helicopter Money and the Neoclassical MMT Debate*

In the Modern Money Theorists' view, perhaps the most important function of helicopter

money has been the degree to which the policy has forced Neoclassical economists to make

arguments in a Modern Money framework. Paul Krugman, in addressing the difference between

helicopter money and traditional fiscal expansion, has adopted the Modern Money philosophy,

that, for accounting reasons, a helicopter drop is indistinguishable from traditional fiscal policy:

> It doesn't take fancy analysis to make this point — just an acknowledgement that in financial terms, at least, the central bank is part of the government. The Fed, for example, remits the interest it earns on government debt to the government proper, keeping only that amount it needs for operations. So for the purpose of our analysis right now, we can use the term "the government" to include the central bank. (Krugman, 2013)

Krugman utilizes this consolidated government in order to demonstrate the identical result of

helicopter money versus traditional fiscal expansion. If the government engages in traditional

fiscal expansion, it increases private sector wealth, and issues bonds which are redeemed as

reserves (Section 1.F). In the case of a helicopter drop, the issued private sector wealth is

immediately an obligation of the government in the form of deposited reserves:

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[51] Fullwiler himself writes that he "certainly (doesn't) want to stand in the way of more fiscal policy" (Fullwiler, 2015). The general consensus of both Keynesians and Post-Keynesians regarding the need for further fiscal expansion continually appears in their arguments, most especially in Paul Krugman's initial response to MMT in 2011: "In a way, I really should not spend time debating the Modern Monetary Theory guys. They're on my side in current policy debates, and it's unlikely that they'll ever have the kind of real — and really bad — influence that the Austrians have lately acquired" (Krugman, 2011)

> At the end of the day, the government's financial position is exactly the same: debt held by the private sector is the same, and so is the monetary base. The private sector's balance sheet is the same too. The only difference is that in case 1 (traditional fiscal expansion) banks briefly hold some government bonds, before selling them back to the government via the central bank. Why should this matter for, well, anything? (Krugman, 2013)

Krugman has thus acknowledged several principles of Modern Money Theory, not only exactly matching the accounting identities imagined by Scott Fullwiler (Fullwiler, 2009), but doing so through a consolidated government, acknowledgement of the role of a deficit as increasing the non-government share of wealth (1.D), and the essential fact that deficit spending will eventually end up increasing reserves. Krugman's ultimate point is that a commitment to lower interest rates is necessary to increase aggregate demand. But he has arrived at this point through a Modern Money argument, exactly mirroring the points made by MMT enthusiasts several years prior.

In responding to Krugman's article, Fullwiler both celebrates his embrace of MMT principles[52], and takes the implications of his argument a step further. Noting that a government deficit under traditional fiscal policy creates new deposits (1.E), the interest rate falls below target. If the central bank in such a scenario wishes to avoid a rate falling below target, it must perform open market operations to maintain its target, selling bonds to obtain reserves. This serves to demonstrate another tenant of Modern Money Theory, that the purpose of bond sales is not to finance government spending, but to control interest rates (1.F). "Because there is no difference between bond- and money-financed government deficits, **there is no reason for the government to sell bonds at all** [sic]" (Fullwiler, 2013a).

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[52] This was after a paragraph of gloating, "Krugman has a new post that explains why the debate over money- vs. bond-financing of government deficits is really much ado about nothing. In it, he essentially echoes longstanding MMT-core principles, as we will show below. Indeed, MMT blogs have written as much many times previously"(Fullwiler, Kelton, 2013).

2.J – *The True Purpose of Helicopter Drops*

Helicopter drops are thus exposed as, primarily, a means of obfuscation. From the implication that there is a different effect on aggregate demand through fiscal expansion financed by keystrokes as opposed to traditionally financed means of fiscal stimulus, to the claim that, due to the irredeemably of dollars, helicopter money is not an obligation of the government, the arguments for enacting the policy rest on many of the pillars of Neoclassical economic thought which clash with Modern Money Theory. The willingness of prominent Neoclassical economists to reject the policy out of hand has required acknowledgement of these differences in theory, and a willingness to embrace Modern Money Theory as a means of explaining policy.

Chapter Three – Negative Interest Rates vs. Fiscal Expansion

3.A - *The Liquidity Trap and the Zero-Lower Bound*

Neoclassical theory would note that monetary policy is limited in its ability to boost aggregate demand by the presence of the zero lower bound, "in which the central bank is unable to lower short term interest rates further because they have hit a floor of zero…. [this] occurs because people can always earn more from holding bonds than holding cash… nominal interest rates cannot be negative (Mishkin, 2013, p.371)." Because no deposit holder would ever elect to store their money in a savings account which offers less than no interest[53], a central bank can never reliably maintain a significantly negative interest rate. The result is a liquidity trap, as an increase in the money supply will not decrease interest rates:

(54)

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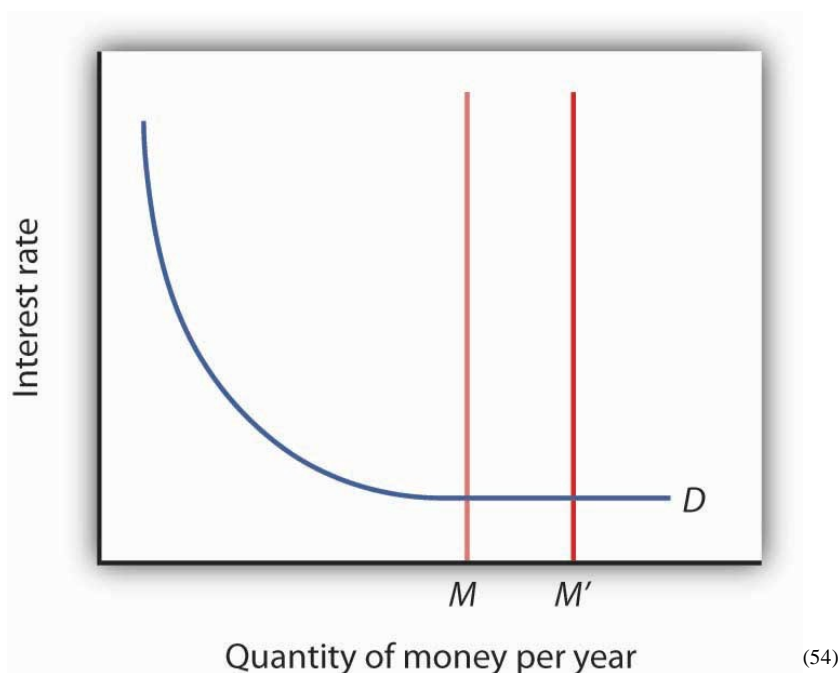
[53] "The zero lower bound arises when a government issues pieces of paper (or coins) guaranteeing a zero nominal interest rate, over all horizons, that can be obtained in unlimited quantities in exchange for money in the bank. This acts as an interest rate floor, making people unwilling to lend at significantly lower rates" (Kimbell, 2013)

[54] Image from (Wong, 2013)

Increasing the money supply will move the LM curve out; however, as the LM Curve is at a moment of perfect elasticity, there will not be a resultant decrease in interest rates or increase in output. Only movement in the IS curve, something traditional monetary policy cannot accomplish, would result in higher aggregate demand:
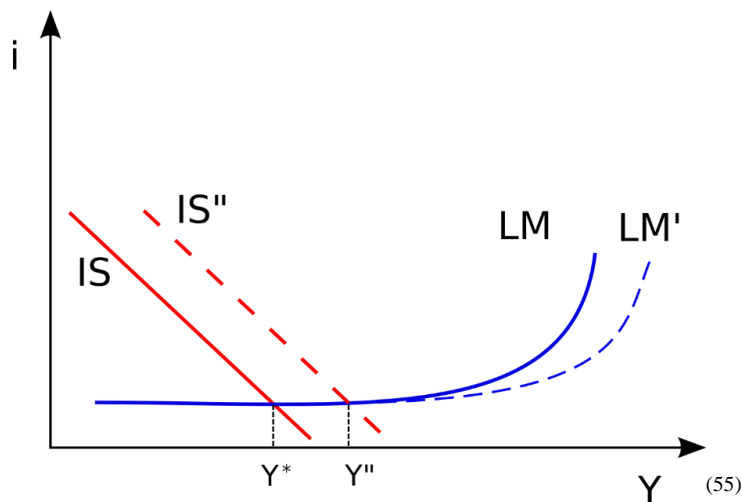
Ineffectiveness of monetary expansion at the zero lower bound is thus a severe damper on the effectiveness of monetary expansion in the IS-LM model (Giraud, 2016). The zero lower bound raises a floor below which interest rates cannot fall, severely impacting the ability of a central bank to fight deflation[56].

3.B – *How the Zero Lower Bound Impacts Central Bank Operations*

The presence of the zero-lower bound has further impacted central bank operations by forcing the adoption of interest on reserves. Because further increases in the money supply will

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[55] Image drawn for Liquidity Trap entry into the Wikipedia Commons.
[56] "If you have zero inflation, you're very close to the deflation zone, and nominal interest rates will be so low that it would be very difficult to respond fully to recessions" – Ben Bernanke, March 20th, 2013

not increase interest rates, depository institutions have amassed a previously unobserved quantity of excess reserves:
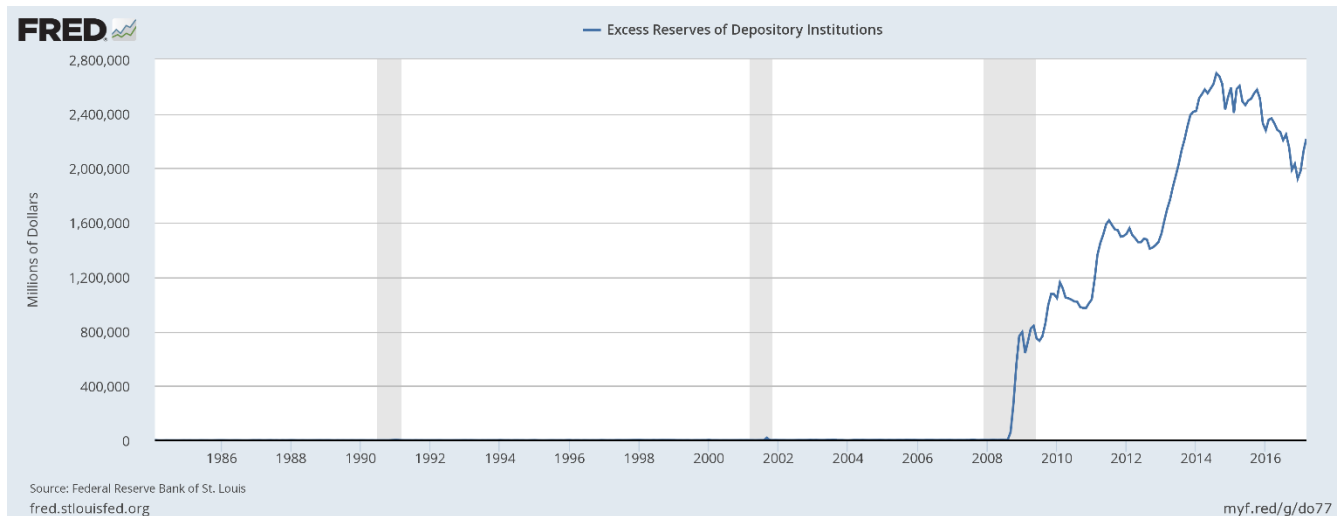
In order to enforce a floor on interest rates, interest on excess reserves allow a central bank to raise rates without necessitating the short-run shock of trillions of dollars of reserves draining into the broader economy (Dressler, 2015). The necessity of this measure is a result of the excess reserves amassed in the zero-interest rate environment.

In this view, that monetary policy is limited by the presence of the zero lower bound, the failure of interest rates to go below zero is responsible for much of the excess unemployment and inadequate aggregate demand present in the post-financial crisis economy:
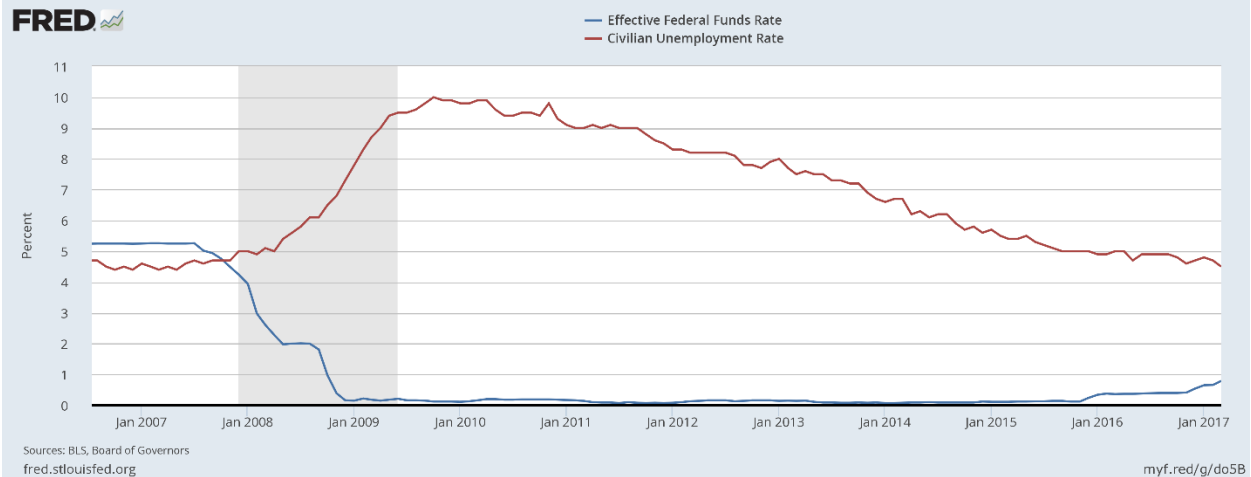
Absent further other development, "the classic Keynesian view of the liquidity trap is, of course, that it demonstrates that under some circumstances monetary policy is impotent, and that in such cases fiscal pump-priming is the only answer" (Krugman, 1998). While some Neoclassical theorists point to further monetary options in the form of attempts to increase expectations of future inflation (Akram, 2016), it is clear that a liquidity trap can constrain the flexibility and feasibility of monetary stimulus[57].

3.C – *Why Central Banks Want to Go Below Zero*

This impact is especially noteworthy when it is realized that, within the IS-LM framework, manipulation of interest rates is a uniquely powerful means of affecting output:

> Interest rate policy is by far the most flexible, the least intrusive of markets, and has proven capable of targeting low inflation. Moreover interest rate policy can be managed credibly, reasonably free of politics, by an independent central bank because it makes little use of fiscal resources. Interest rate policy is merely about shadowing the natural interest rate to yield the best stabilization of employment and inflation that monetary policy alone can deliver. (Goodfriend, 2016)

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[57] (Kiley 2017) demonstrates the degree to which a sustained period of interest rates at ZLB can impact the ability of a central bank to ensure full output.

The desire to remove the zero lower bound has been especially acute in the recent period

of relatively low inflation and interest rates. Since the decline of interest rates beginning in the

1990's58, "the nominal interest rate cannot be more than a bit negative, because investors always

have the option of holding currency, with a guaranteed save nominal return of zero. With stable

low inflation, as the U.S. and all other advanced countries have experienced for a lengthy period,

the ZLB … places a bound on the real rate that is a huge constraint on the economy" (Hall,

2013). In the absence of the zero lower bound, it has been suggested in Federal Reserve research

that at times during the most recent recession, maintaining full employment would have required

an interest rate as much as 400 basis points below zero (Hall, 2013).

The costs of the zero lower bound on production leads to the question of how it can be

avoided. Raising the inflation target would allow for more flexibility, and fewer episodes in

which the zero lower bound constrains monetary policy (Bernanke, 2017). But even this policy

would still be vulnerable to a floor on interest rates, especially during periods of intensely

inadequate aggregate demand. It is for this reason that the Neoclassical IS-LM framework would

suggest a more fundamental approach:

> First and foremost, the zero interest bound should be removed—much as the gold
> standard and fixed foreign exchange rate encumbrances were removed in the 20th
> century—to free the general price level from the influence of relative prices over which
> monetary policy has little control. The gold standard was abandoned so that fluctuations
> in the gold price of goods would no longer destabilize the price level. Fixed foreign
> exchange rates were abandoned to insulate domestic price levels from movements in the
> international terms of trade. Those encumbrances were abandoned so that central banks
> could pursue monetary policy independently to stabilize domestic employment and
> inflation without costly subsidiary policies highly disruptive of international relations,
> trade, and finance. Likewise, the zero interest bound encumbrance on monetary policy
> should be removed so that movements in the intertemporal terms of trade can be reflected

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[58] It has been suggested by (Del Negro, Giannone, Giannoni, Tambalotti, 2017) that the natural real rate
of interest, absent central bank intervention, clusters around one percent in present times.

fully in interest rate policy to sustain price stability and full employment with a minimum of inefficient and costly alternative policies. (Goodfriend, 2016)

Allowing interest rates to fall below zero would offer two benefits unique to conquering the zero lower bound: "The direct benefit of being able to have negative interest rates is an additional option for economic stabilization. An indirect benefit is that of being able to lower the inflation target." (Kimball, 2015) By removing the floor on interest rates, an inflation target above zero59 is no longer necessary.

It is for these reasons that negative interest rates have become an increasingly attractive option for central banks. Miles Kimball, one of the most prominent advocates for negative interest rate policy (NIRP), has documented the incremental movements towards widespread adoption:

1. The current mild negative interest rates in the euro zone, Switzerland, Denmark and Sweden…
2. The boldly titled 18 May, 2015 London conference on 'Removing the Zero Lower Bound on Interest Rates', cosponsored by Imperial College Business School, the Brevan Howard Centre for Financial Analysis, the Centre for Economic Policy Research and the Swiss National Bank.
3. The 19 May, 2015 Chief Economist's Workshop at the Bank of England, which included keynote speeches by Ken Rogoff, presenting 'Costs and Benefits to Phasing Out Paper Currency'
4. Bank of England Chief Economist Andrew Haldane's 18 September, 2015 speech, 'How low can you go? (Haldane, 2015)
5. Ben Bernanke's discussion of negative interest rate policy on his book tour (for Bernanke, 2015), ably reported by journalist Greg Robb in his Market Watch article 'Fed officials seem ready to deploy negative rates in next crisis (Kimball, 2015)

There is thus an acute interest in the adoption of negative interest rates, as well as an urgent need.

3.D – *The Current Bound*

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[59] The welfare cost of inflation typically manifests in one of two ways, through sticky prices and menu costs resulting in a non-optimal consumption of goods (Lucas, 2007) as well as the increase in opportunity costs incurred from holding money balances (Lucas, 2001). Literature concerning these effects are further explored in (Burstein, 2008).

Estimates vary on what interest rate is currently feasible. They are largely dependent on storage costs (how easily digital currency wealth could be converted to physical currency and then stored), the utility of transactions demand (how easily a mass of physical currency could be spent once desired), and sovereignty (what regulations on paper currency withdrawal are enacted by the government) (Keohane, 2015). (Rognlie, 2016) draws on existing experiments in Switzerland, Denmark, and Sweden to create an estimate of the demand for paper currency, finding that including effects of currency withdrawal does not substantially diminish the effectiveness of NIRP at very low absolute rates. (Keohane, 2015) alleges that, absent substantial new regulation on physical currency withdrawals, the lower bound on currency is in the range of negative .2% to negative 2.3%, with the bound rising the longer negative interest rates are a policy option. This suggests that, for a central bank to reliably utilize negative interest rates, some policy intervention would be necessary to avoid speculation or distortion of the market for physical versus digital currency.

3.E - *The Digitalization of Money, Stamped Currency*

There are any number of ways to eliminate the zero lower bound, and almost all of them involve limiting the ability of depositors to withdraw currency at par for digital currency in the event of negative interest rates:

> Short of stamped currency or the abolition of paper currency, the government can discourage paper currency storage in essentially three ways, corresponding to the three steps needed to earn an interest rate of zero minus storage costs from paper currency: it can attack withdrawal of paper currency, storage of paper currency, or redeposit of paper currency. (Agarwal, Kimball, 2015)

Perhaps the most immediate way to eliminate the zero lower bound would be to abolish the institution of paper money. If individuals had no choice but to spend, invest, or deposit their

funds, the zero lower bound would no longer restrict the interest rate. A central bank could establish a timetable for the eventual elimination of paper currency as an accepted substitute for paper currency, while the treasury could refuse to accept it as tax payment. In the interim, a one-to-one trade in option could exist, with depositors receiving digital currency in exchange for their soon-to-be-worthless physical currency. This would have benefits beyond ending the ability of depositors to avoid negative interest rates. Paper currency is more vulnerable to tax evasion or other illicit activities (Rogoff, 1998), meaning a mandated transition to electronic currency could curtail black market activities. The fact that a dwindling number of sales are made in cash, at a ratio likely to continue to decline with each year (Wang, Wolman, 2014), suggests such a transition, lightly aided by the government, could be made relatively harmlessly.

However, enforcing such a move by fiat carries several possible costs. That paper currency still enjoys relative popularity suggests that enforcing its elimination by fiat would carry burdensome transaction costs (Rogoff, 2015). There are practical arguments for continuing the tradition of paper currency as well. The ability to withdraw and exchange money without impetus or supervision offers protection against both imminent disasters[60], as well as an authoritarian government[61]. Given the present usefulness of paper currency, it is not unlikely that a civilian populace would respond to a ban by fiat through the usage of foreign currency (Rogoff, 2015). For these reasons, most advocates of negative interest rates do not recommend a government decree as means of fulfillment.

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[60] "It is advisable to keep a small amount of cash or traveler's checks at home in a safe place where you can quickly access them in case of evacuation" – Advice from FEMA's In-depth Guide to Citizen Preparedness. Similar advice can be found in most disaster preparedness materials, as well as the CDC Website.
[61] (Karlsson, 2012)

A much less recent proposal, dating back to Silvio Gesell in 1906, and discussed by John

M. Keynes in the *General Theory of Employment, Interest, and Economics*[62] involves ending the

practice of government accepting physical currency at par with non-physical currency. In

previous forms, this involved proposals to physically stamp currency to ensure validity,

dependent on tax payment. A more recent proposal would involve a government lottery, in

which, dependent on the serial number, certain bills cease to be legal tender (Mankiw, 2009).

The rate of bills which are invalidated would roughly serve as a function of the penalty on

physical currency.

3.F - E*nding the Redemption of Physical Currency at Par*

A more practical means of executing such a plan takes the idea to an ambitious new area:

> Central banks resist upward price pressure by satisfying any excess demand for paper
> currency; and they resist downward price pressure by absorbing any excess supply of
> paper currency… The zero bound encumbrance on interest rate policy could be
> eliminated completely and expeditiously by discontinuing the central bank defense of the
> par deposit price of paper currency… the central bank would no longer let the
> outstanding stock of paper currency vary elastically to accommodate the deposit demand
> for paper currency at par. Instead the central bank could grow the aggregate stock of
> paper currency according to a rule designed to make the deposit price of paper currency
> fluctuate around par over time. (Goodfriend, 2016)

In this scenario, the price of physical currency relative to electronic currency will adjust through

market mechanisms to reflect a new negative interest rate. If depositors attempt to withdraw

money as physical currency, the increasing price of such currency relative to electronic deposits

would adjust to match the new equilibrium of demand for physical currency.

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[62] (Agarwal, Kimball, 2015)

The relative absence of chaos or confusion in previous episodes where there appeared to be a market-determined exchange rate for physical currency (Friedman, Schwartz, 2008) indicates such a system would not necessarily impede existing financial functions. If a central bank wished to avoid allowing for market determination of this rate, it could charge a deposit fee for physical currency, enforcing the exchange rate of physical currency to digital. This process would prompt both a floor and a ceiling on the value of physical currency relative to digital through allowance of discounted physical currency withdrawal, as well as physical to digital conversion (Agarwal, Kimball, 2015). Many retailers already accept digital currency at par despite it being worth less than physical currency, before the levy of transaction fees (Agarwal, Kimball, 2015). This process ends the existing handicap on digital currency, by forcing digital and physical currency to reflect an equilibrium cost.

Targeting the rate of change in the deposit fee, as opposed to a deposit fee itself, is necessary to prevent arbitrage of physical currency or speculation, by refusing to allow a situation in which the return offered by holding digital currency is greater than that of other investments[63]. Letting X be the ratio of electronic dollars to paper dollars:

$$Paper\ Currency\ Interest\ Rate = \left(\frac{dX}{dt}\right)\frac{1}{X}\ ^{(64)}$$

This rate would be chosen at each policy meeting. "The deposit fee must grow during the period the target interest rate is negative… it can be allowed to shrink when the interest rate is positive"

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[63] "A paper currency interest rate above other short-term rates leaves open the possibility of an arbitrage of taking funds out of other short-term assets and storing paper currency instead. On the other hand, a paper currency interest rate below other short-term rates would make an arbitrage of shorting paper currency and putting the funds in other short-term assets attractive" (Agarwall, Kimball, 2015).
[64] Equation from (Agarwall, Kimball, 2015)

(Agarwall, Kimball, 2015). If negative interest rates motivate individuals to demand physical currency to save their funds, the deposit price of physical currency has grown beyond that of digital currency. The central bank would respond by increasing the paper currency interest rate, that is, the percentage change in the deposit fee, until such time that the deposit price of paper currency is no longer greater than that of digital currency.

Four approaches could guide a central bank during economic recovery, dependent on the desired outcome. The first would involve allowing a paper currency interest rate (PCIR) to enforce a negative interest rate, but returning to a deposit fee of zero as soon as negative rates are no longer necessary. This scenario is the most vulnerable to speculation and currency hoarding, as, for a brief period, the PCIR will be above the funds rate. Depositors would be motivated to convert digital reserves to physical currency, to capitalize on the greater returns. In this case, the floor on interest rates would be above zero, because offering zero interest is a worse return than storing physical currency.

A slower effort to return interest rates to zero would involve allowing the PCIR to equal the funds rate[65], starting from the moment that the funds rate goes negative. As the interest rate rises, the PCIR could continue to track the funds rate, until the deposit fee is zero, at which point the interest rate could once again return to zero. As long as paper currency enjoys an interest rate neither above nor below traditional securities such as T-Bills, or the funds rate, there is no risk of arbitrage, and the floor on rates is maintained.

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[65] For simplicity, this relies on the assumption that there are no transaction costs associated with storing paper currency, or an inherent preference for digital currency.

The final two options would involve targeting the desired level of physical currency in the economy, as opposed to strictly the desired interest rate. Assuming no transaction costs, or consumer preference for digital currency, the PCIR would track the funds rate[66], ensuring there is no floor on interest rates, or hoarding of paper currency. This would involve periods in which a unit of physical currency is worth more than a unit of digital currency. There is a risk of eliminating disincentive to use physical currency, which is why the final proposed situation may be preferable, some permanently negative PCIR, never to go above the new interest rate floor. This could encourage consumers to hasten the process of adopting virtual currency:

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[66] (Agarwall, Kimball, 2015) refer to this as 'The Friedman Rule', presumably in reference to (Friedman, Schwartz, 2008)

Case 1: Swift Return to Par
(Percent)

5
4
3
2
1
0
-1
-2 — Target Rate
-3 --- PCIR
-4 — ln(X)
-5
2009 2010 2011 2012 2013 2014

Case 2: Gradual Return to Par
(Percent)

5
4
3
2
1
0
-1
-2 — Target Rate
-3 --- PCIR
-4 — ln(X)
-5
2009 2010 2011 2012 2013 2014

Case 3: Friedman Rule (Eventually Go Above Par)
(Percent)

5
4
3
2
1
0
-1
-2 — Target Rate
-3 --- PCIR
-4 — ln(X)
-5
2009 2010 2011 2012 2013 2014

Case 4: Seignorage without Inflation (Never Return to Par)
(Percent)

5
4
3
2
1
0
-1
-2 — Target Rate
-3 --- PCIR
-4 — ln(X)
-5
2009 2010 2011 2012 2013 2014

Note: Each option is presented as a possible alternative history for monetary policy in a country that was at the zero lower bound since end-2008. In several advanced countries the actual history has PCIR and ln(X) as flat lines at zero and the target rate as a flat line very close to zero throughout this period of time.

(67)

In this model, any option aside from the first avoids creating investor arbitrage, as long as the rate of change in the PCIR is never above that of the Federal funds rate. Tracking the federal funds rate until the deposit fee for physical currency is zero most mirrors the current situation, with the added benefit of allowing for lower interest rates when necessary.

Concerns raised regarding any of these approaches center around possible investor speculation:

[67] Diagrams from (Agarwall, Kimball, 2015)

Market speculation in anticipation of a negative interest rate policy action would put upward pressure on the current deposit price of paper currency. And central bank intervention to stabilize current deposit price of currency (by accommodating the currency demanded in exchange for deposits) would facilitate a potentially disruptive disintermediation of depository and money market intermediation (Goodfriend, 2016).

Investors may anticipate a change in PCIR; the possibility of a future penalty on withdrawal would raise the price of paper currency, even when there is no physical currency deposit fee. It is only if the appreciation of paper currency always remains below that of the funds rate could this continue to be the case. It is still possible that central banks would suffer from a lack of faith that they will maintain a deposit fee on physical currency after interest rates are above zero, choosing the first scenario of too-fast a return to par, leading to speculation. Promoting clear, open guidelines to this policy, and sticking to them, would prevent such arbitrage.

3.G – *A Paper Currency Card*

The above proposals involve shifting the unit of account from a paper dollar to a digital one (Agarwall, Kimball, 2015). If a government wished to keep paper currency as the unit of account, but allow for negative interest rates, it could offer financial accounts dealing exclusively with paper currency, such as "A currency card ... issued on a corresponding numbered currency card account" (Goodfriend, 2016). This card would be linked directly to physical currency, backed by point of sale technology, and 100% backed by physical reserves. Though it sounds very similar to a credit or debit card, a currency card would link physical currency to a digital measure:

> Currency card accounts could offer the payment services that paper currency provides: anonymity, divisibility, generalized purchasing power, portability, safety, a store of value, and a fixed deposit price of electronic currency. Crucially, however, because currency card accounts would access electronic balances at the central bank, the central bank could easily pay or charge interest on electronic currency just as central banks pay or charge interest today on electronic reserve balances held by commercial banks. (Goodfriend, 2016)

This scenario would still employ some exchange rate between digital and physical currency, favoring digital currency to avoid incentivizing paper currency (Agarwall, Kimball, 2015). The only real differences are that it would allow physical currency to receive interest, allowing an economy to continue denominating debt and assets in physical currency, and thus remove the zero lower bound.

The problem is, much like the first scenario, this would require a mass level of digitization and development in payment infrastructure before being viable (Goodfriend, 2016). Any proposal which seeks to, remove the zero lower bound through digitization cannot escape the situations in which it is to consumer benefit to use hard currency. "[Physical-currency-backed] electronic currency would require investment in banking, central banking, and payment system infrastructure before it could be made available" (Goodfriend, 2016). Still, if the result is the end of the zero lower bound, and a massive increase in the ability of central banks to fight inflation, negative interest rates will have succeeded in ensuring government can maintain full employment.

3.H - *A Tax on Currency and the Limits of Interest Rates*

Modern Money Theorists imagine negative interest rates as a tax on currency. There is no reason in the MMT framework to separate a central bank from the consolidated government (Section 1.I). So if a central bank activity results in a new liability, that liability can be considered a tax obligation. "The classic example of a negative nominal interest rate—long suggested by a number of economists for avoiding deflation—is a tax on currency" (Fullwiler, 2009b). Much like any other tax, people attempt to avoid a tax on deposits by withdrawing their currency, meaning that the zero lower bound can be thought of as being brought about by tax evasion.

The zero lower bound does not simply come from the ability of depositors to withdraw

physical currency; money simply happens to be the most liquid and safest of assets. Modern

Money Theorists imagine a "*pyramid* of liabilities, with different layers according to the degree

of separation from the central bank [Sic]" (Wray, 2015, p.78). The safest asset, most likely to

clear at par, is money itself. Below that are bank deposits and IOUs, and below that are consumer

IOUs.

This pyramid informs a great deal of Modern Money Theory's approach to finance and

functional accounting (See Footnote 69). It also ensures that, for a negative interest rate to avoid

the issue of effective tax evasion, a lot of assets will have to either earn lower interest rates, or be

subject to the tax:

> No matter how far up the chain of liquid financial assets you want to go with the tax
> (deposits, money market funds savings accounts, etc…) I (the consumer affected by
> negative interest rates) just keep moving my balances to the next most liquid and non-
> taxed financial asset (or buy everything with a credit card and then pay it off at the end of
> the month) while financial institutions will also have a substantial incentive to continually
> design and redesign special liquid accounts (or credit card-type arrangements) that can
> avoid or otherwise minimize the tax. (Fullwiler, 2009b)

There are many assets which are ultra-safe, and can serve as effective means of storing currency,

beyond just the physical form. A tax on a level of the pyramid, beginning with the most safe, will

simply move deposits downward, placing a premium on risk. This effect is limited, however, by

the fact that the yield on many assets are correlated with the Federal funds rate, and presumably

would continue to reflect the tradeoff between liquidity and yield:

Sources: Board of Governors of the Federal Reserve System (US)
fred.stlouisfed.org   myf.red/g/duXT
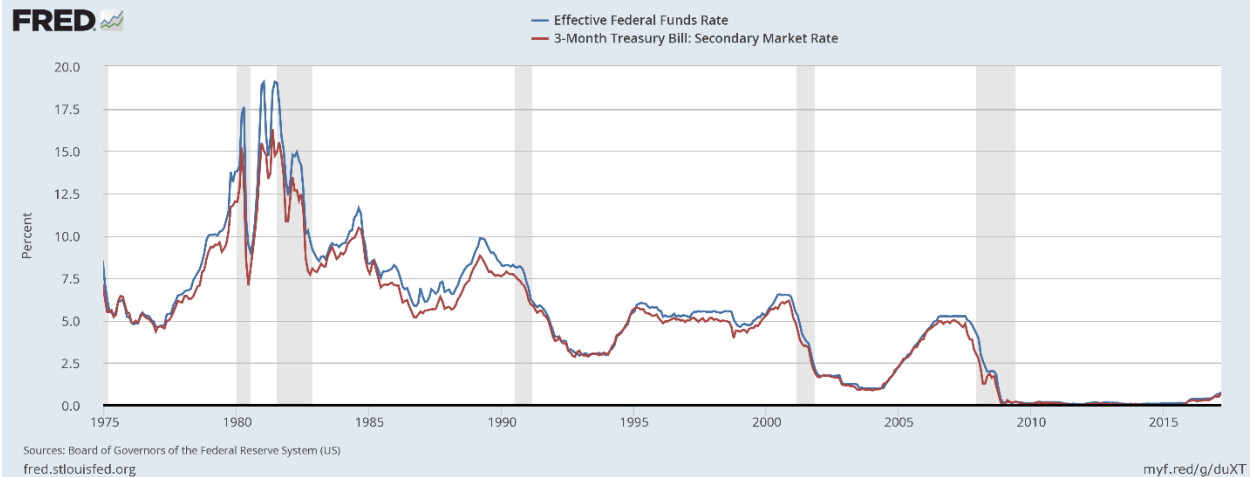
3.I- What Holds Back Investment, What Inspires Investment

The larger problem with negative interest rates, and the broader solution of ever lower

interest rates to increase output, is the simple fact that what restrains lending is not reserve ratios

or a lack of deposits, but a lack of lending opportunities:

> The problem IS NOT that people have idle balances and aren't spending them (and it
> almost never is the problem in a recession). The problem IS that people don't have
> enough income (or don't have the certainty that their current income will be sustained)
> and/or savings to make them comfortable to spend or to borrow to spend. Indeed, the
> household sector as a whole is trying to deleverage, not sit on idle balances. (Fullwiler,
> 2009b)

The chief constraint on the ability of banks to lend in periods of inadequate aggregate demand is

not the cost of capital, but the quality of the opportunities to lend available. This is why, despite

the introduction of a zero-percent interest rate, lending still collapsed in the years during and

after the recession:

Source: Board of Governors of the Federal Reserve System (US)
fred.stlouisfed.org

In Modern Money Theory, the claim that ever lower interest rates will substantially increase borrowing or lending relies on a misunderstanding of both the function of banks, and the availability of reserves. As discussed in (1.I), banks do not need to consider whether they can find reserves before lending; the Federal Reserve must make as many reserves as are necessary available to ensure the stability of the financial system, and the maintenance of their interest rate target. Lowering interest rates below zero will not meaningfully spur more lending, because it will not create more profitable opportunities to lend, or more confidence in the ability of borrowers to repay during periods of financial stress.

3.J - *QE, NIRP, and Balance Sheets*

Modern Money Theorists view the recent efforts to get interest rates below (or closer to) zero as a handicap on the profitability of banks.

> What QE (Quantitive Easing and other modern efforts to increase the money supply) comes down to… is a substitution of reserve deposits at the Fed in pace of Treasuries and MBs on the asset side of banks… This reduces bank interest income – making them less profitable. Some held out … hope that less profits for banks would equate to more inducement to increase lending. It didn't work and was a bad idea if it had. We want banks to make good loans to willing and credit-worthy borrowers. We don't want t to make banks so desperate…. They make crazy loans (again!) (Wray, 2015, p.265)

73

Efforts to further decrease interest rates involve exchanging the profit yielding assets of banks

for the zero-interest (or, because the Federal Reserve has begun paying a small benefit on excess

reserves (Board of Governors, 2017), very low interest) reserves. Reducing bank profitability

will not increase their incentive to lend, or ensure the stability of the financial system. Even if it

had, it would likely be spurring the creation of low-quality, low-yielding loans.

Randall Wray further notes in the same work a Credit Suisse report, demonstrating the

collapse in personal interest income as a result of the collapse in interest rates:

Exhibit 4: Savers Pay the Piper

$bn
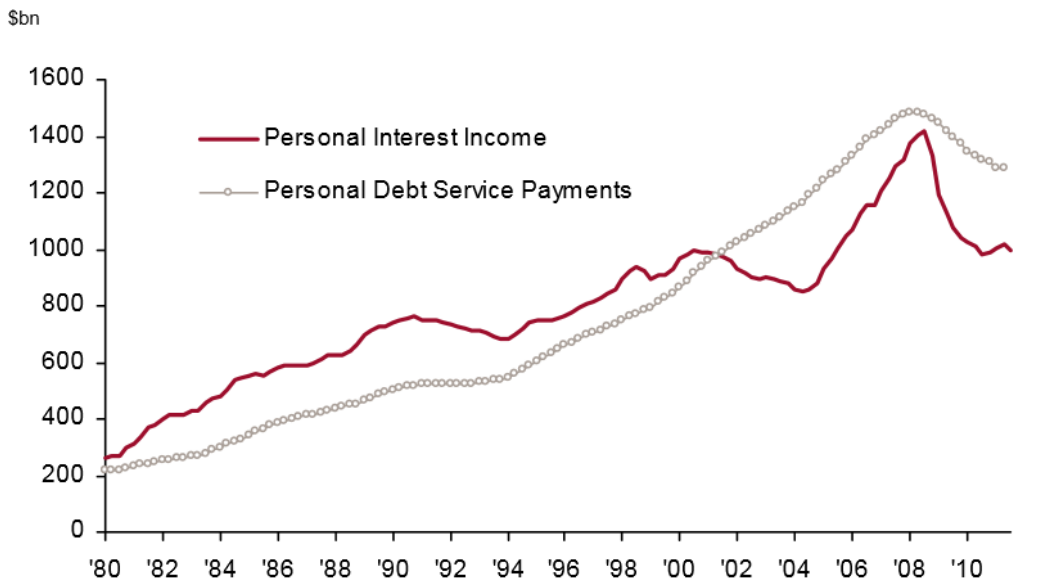
Source: Bureau of Economic Analysis, Federal Reserve, Credit Suisse

(68)

The report documents the degree to which low interest rates have hurt money market funds,

insurers, pension funds, and households with weak savings yields:

> Personal interest income has collapsed over the last few years. The decline in interest
> income actually dwarfs estimates of debt service savings. Exhibit 4 compares the
> evolution of household debt service costs and personal interest income. Both aggregates
> peaked over $1.4 trn at roughly the same time – the middle of 2008. According to our
> analysis of Federal Reserve figures, total debt service – which includes mortgage and

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[68]Image from (Credit Suisse, 2012)

consumer servicing costs – is down less than $200 bn from the peak. The contraction in interest income amounts to roughly $425 bn from its peak, more than double the windfall from lower debt service. (Credit Suisse, 2012)

This list of losers is to be expected from low interest rates, as any organization dependent on higher rates of borrowing and lending will suffer. But Modern Money Theory notes that the collapse in net savings yield meant "QE (was) supposed to stimulate the economy by helping to take 1.5 percent of GDP away every year" (Wray, 2015, p. 266). Negative interest rates would function similarly, attempting to stimulate the economy and aggregate demand through a new tax, further penalizing households for saving money.

3.K - *Modern Money Theory, Full Employment, and Interest Rates*

This is all to say what Modern Money Theorists finds most problematic about this proposal is not necessarily the end of physical currency, or the presence of relatively low interest rates. It is the implication that there exists some means by which government can or should avoid deficit spending in order to increase aggregate demand and output.

From Abba Lerner's original proposal of functional finance[69] (Lerner, 1943), to Wray's assertion that fiscal policy should be a primary weapon to ensure full output, the view that interest rates are a uniquely powerful means of stimulating the economy is what MMT finds most problematic:

> (Modern Money Theorists) have always rejected the idea that interest rate policy matters much for investment. They have never bought Bernanke's believe that promising ZIRP for years and years and pumping banks full of excess reserves would get banks to lend and firms to borrow to invest…. Investment is just not very sensitive to interest rates. (Wray, 2015, p.282)

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[69] Much of Modern Money Theory's original observations regarding the nature of government funding and budget constraints derive from the works of Abba Lerner, and his functional finance approach (Forstater, 1999) (Wray, 2015, p.199-205)

In the MMT framework, the worst crime of government in the years after World War Two was

to give up attempting to ensure full employment[70] through fiscal policy, relying intently on

monetary policy. This is the reason many MMT theorists, such as (Fullwiler, 2009b), will

conclude criticisms of recent monetary policy inventions by advocating for expansionary fiscal

policy[71]. Every new monetary invention gets the economy further away from the true engine of

full employment.

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[70] "(Government) abandon(ed) any pretense they were pursuing full employment. Indeed, unemployment become a tool for achieving price stability... (it was even worse), with conventional wisdom arguing that central banks ought to pursue *only* price stability, and with the use of fiscal policy downgraded altogether…the result has been typically high unemployment and substandard economic growth. In the United States, poverty and inequality have risen." (Wray, 2015)

[71] Fullwiler concludes his strike against negative interest rates by advocating for a payroll tax holiday, briefly staying what Modern Money Theory considers one of the most harmful taxes (Section 1.N)

Chapter Four – The Jobs Guarantee Program

4.A - *The Resting State of Inadequate Employment*

Modern Money Theorists would note that the failure of a central bank to ensure full employment is only possible because, at equilibrium, the economy will not operate at full employment. This is in direct contrast to the Neoclassical assertion, that long-run unemployment above the non-accelerating inflation rate of unemployment (NAIRU) is a result of various manifestations of market failure:

> This result (excessive unemployment) is unsurprising. New Keynesian (what MMT would call Neoclassical) theory is predicated upon the old Marshallian theory that all factor markets clear in the long run under perfect competition and perfectly flexible prices in all factor markets. Specifically, in the context of labor markets, New Keynesian analysis is built upon Gary Becker's model of human capital (which itself is a derivation of earlier neoclassical foundations of rational choice and maximizing behavior) (Murray, Forstater, 2017)

In Neoclassical economic theory, the forces of perfect information and perfect competition should allow for a long-run equilibrium at the natural rate of unemployment. Though temporary shocks are possible, the only thing which could stop full employment is some manipulation of market forces. That employment does not seem to consistently observe its natural rate is a result of "wage-rigidities such as unions, search costs, reservation and efficiency wages [altering] the wage-employment relationship from what it would otherwise be given... wage and price rigidities allow for the existence of short-run employment" (Murray, Forstater, 2017). By forcing a higher than optimal wage, collective bargaining increases the unemployment rate. By leading to less than optimal prices, menu costs lead to lower profits and employment. As a result, the unemployment rate can be higher than the optimum would suggest. But absent these forces, there should not be any unnecessary structural unemployment above NAIRU.

MMT theorists respond by noting that the resting state of employment does not appear to have observed anything near the long run trend of equilibrium about the natural rate of employment, in recent years taking years to recover from episodes of recession:
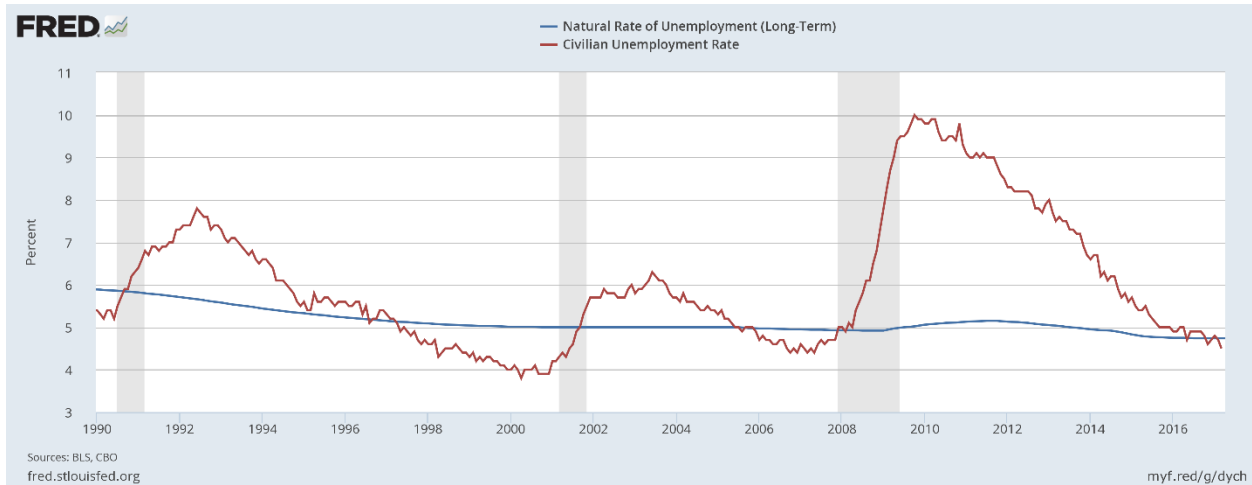
If it is true that the equilibrium of an economy is relatively full employment, it is shocking that, "no capitalist society has ever managed to operate at anything approaching true, full, employment on a consistent basis" (Wray, 2009). In the MMT framework, a litany of forces have conspired to keep the rate of employment below the natural, full rate of employment.

The role of animal spirits in allowing for recession, as well as the continual effort to increase productivity and render labor less relevant, have led to chronically higher-than-necessary rates of unemployment:

> Structural forces generate Keynesian and Marxian unemployment. Structural forces include three elements (1) the continual growth of the labor supply; (2) labor-displacing and labor-expelling technological change. These two create adjustments to the structure of production. Further, (3) institutional changes create change to the level and composition of final demand (i.e. think of how a company like Amazon changes both the way we purchase products and the type of products that we consume). In turn, changes in the level and composition of final demand further impact the structure of production and overall economic output. (Murray, Forstater, 2017)

The growth in productivity will lead to excessive aggregate supply, and chronically inadequate aggregate demand. "The problem is that capital is too productive for its own good. The production-enhancing qualities of investment exceed its multiplier effects on aggregate demand… this progress… leads to machines making machines" (Wray, 2015, p.281). This simple problem leads to persistent, unyielding unemployment, which can be solved only by fiscal expansion (Wray, 2005). Absent adequate federal intervention, an economy, even one in which aggregate demand is near or at capacity[72], will not provide an adequate demand for labor. It is up to the government to fulfill this gap, through direct job creation.

4.B - *Why to Focus on Full Employment as well as Full Output*

The unemployment which endures at what is proclaimed to be full output is, in Neoclassical theory, considered to be structural. This structural employment guards against inflation. Modern Money Theorists would note the cruelty of utilizing unemployment as a means to fight inflation. Unemployment is "associated with… health problems, spousal abuse…family break-ups, drug abuse, [and] crime" (Wray, 2015, p.223). It robs the unemployed of acquired skills, as accumulated experience withers in value (Acemoglu, 1995). Economic discrimination means that a failure to achieve full employment will uniquely punish discriminated against minorities and individuals (Forstater, 2000) (Wray, 2009). Modern Money Theorists point to philosophical arguments, that an essential human right is the right to work[73] (Wray, 2009). The

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[72]"Unemployment as a monetary phenomenon exists irrespective of whether the economy is booming or contracting. Even in prosperous times, there are always individuals looking for wage work, and who employers consider unemployable for one reason or another. Either business conditions (in an already strong economy) do not guarantee any further increase in demand to warrant hiring them, or employers use some other individual characteristic to turn prospective employees away". (Wray, 2009)

[73] See (Harvey, 1989) for this argument, as well as (Tcherneva, Wray, 2005, May) (Burgess, Mitchell, 1998) (McKenna, 2007)

idea that joblessness is an acceptable byproduct of growth, or that it is enough to ensure adequate

aggregate demand while allowing for unemployment, is too destructive, and ill-conductive to

long run economic growth to stand in the MMT framework (Fullwiler, 2013b).

4.C - *The Modern Money Solution and the Job Guarantee*

Modern Money Theory paints the job guarantee program as the solution to the problem of

persistent unemployment, as well as that of inadequate aggregate demand. While the broad

solution of expansionary fiscal spending is appropriate in times of recession or depression, such

a program does not necessarily ensure full employment (Section 4.B). For government to directly

end excess unemployment requires a targeted approach, and requires a direct job guarantee.

Though the exact details of such a program vary[74], most broadly imagine a program

structured so as to provide a job to anyone willing to work it:

> The federal government provides funding for a job creation program that would offer a
> job to anyone who is ready, willing and able to work. The compensation would consist of
> a uniform hourly wage with a package of benefits. The program could provide for part-
> time and seasonal work, as well as for other flexible working conditions as desired by the
> workers. The package of benefits would be subject to congressional approval, but should
> include health care, child care, payment of Social Security taxes, and usual vacations and
> sick leave. The single, uniform, wage would also be set by congress and fixed until
> congress approves a rate increase—much as the minimum wage is currently legislated.
> (Tcherneva, Wray, 2005, May)

In such a program, workers would be paid what is effectively the minimum wage, potentially

replacing the current legally mandated minimum wage[75]. The actual work performed would vary,

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[75] (Tcherneva, Wray, 2005) cite (Harvey, 1989) and the Argentinian *Jefes* program (Tcherneva, Wray, 2005) (Wray, 2013) as examples of this. Wray and many other MMT followers focus on the program as envisioned by (Minsky, 1965).

[75] "In the absence of true full employment, the *actual* minimum wage is always zero- because those who cannot find work cannot get the legislated minimum wage" (Wray, 2015, p.222). A private sector employer would not be able to pay an individual a wage below the JG program, because no one would volunteer to work such a position.

but would not be dissimilar to the work performed for New Deal jobs programs. Previous

examples of explicit or implicit job guarantee programs have involved public sanitation and

cleaning, park and forest cultivation, community welfare, infrastructure construction, and

creative efforts (Wray, 2015, p.235-237). The possibilities are relatively unrestricted[76]. The

administration of a census (Stone, 2017) is one example of the possible work to be performed in

the job guarantee program. The most important thing for such a plan to be effective is that the

wage (or job quality) offered does not supersede private sector wages, and that anyone who

requests a job can receive one.

4.D - *The Effect of a Job Guarantee Program*

There are multiple benefits of such a proposal in the MMT framework. Most

prominently, by definition of the program, the introduction of a job guarantee would mean the

end of excessive voluntary unemployment. If anyone who wants a job can receive one, there

ceases to be a case in which an individual cannot find some form of gainful work. Such a policy

also means the end of the need for disruptive policies such as the guaranteed minimum wage, as

a job guarantee can establish a new wage floor (Section 4.C). Because workers will leave the

program as the economy strengthens, and enter as the economy contracts, a job guarantee would

be counter-cyclical[77]. Unlike typical expansionary efforts focused on buying complex financial

assets[78], or tax cuts for those with high incomes, a job guarantee would reduce inequality[79]. By

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[76] Possible requirements for such work are discussed in (Section 4.F)

[77] "ELR will act as an automatic stabilizer as employment in the program grows in recession and shrinks in economic expansion, counteracting private sector employment fluctuations. The federal government budget will become more countercyclical because its spending on the ELR program will likewise grow in recession and fall in expansion" (Wray, 2009)

[78] (Frank, 2013)

[79] "Pro-investment, pro-growth aggregate demand management usually creates job opportunities for the high-wage, high-skilled employable workers first—precisely those who are in high demand by the private sector and do not face serious and lasting unemployment problems. By contrast, workers who are last

promoting wage and price stability, and acting as a guaranteed counter-cyclical force in

recession, a job guarantee can ensure economic stability, potentially increasing investment and

lending.

Applying MMT principles to a Fairmodel[80] estimator yields these effects to varying

degrees (Fullwiler, 2013b). In the estimate of Fullwiler, a federal ELR job guarantee, from the

period of 1983 to 2010, would have involved the direct employment of up to 14 million workers:

Figure 1: Job Guarantee Employees (Millions)
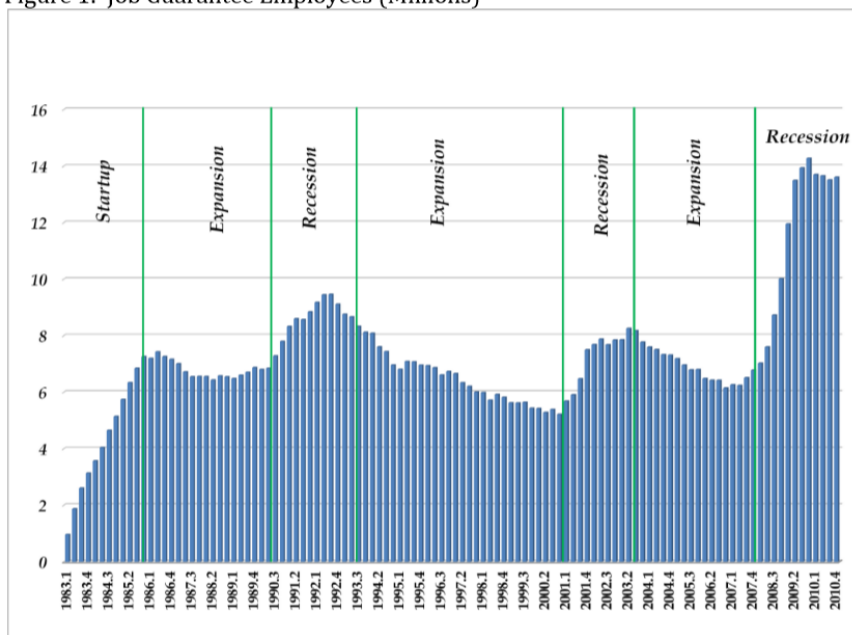
(81)

The result of this counter-cyclical policy is a dramatic effect on real annualized GDP growth:

---

hired and first fired usually come from the bottom of the income distribution and experience the most
precarious labor market conditions and longest spells of unemployment. They do not benefit directly from
the job creation effect of pump priming policies. (Tschernev, 2014)

[80] Fairmodel is very similar to a typical Post-Keynesian economic model, with differences regarding
household spending and wealth effects explored in (Fullwiler 2007) (Fullwiler 2012). It better reflects
principles of Modern Money Theory than many other Post-Keynesian models.

[81] Images from (Fullwiler, 2012)

Figure 3: Annualized Real GDP for JG Program less Base Data ($ Billions)
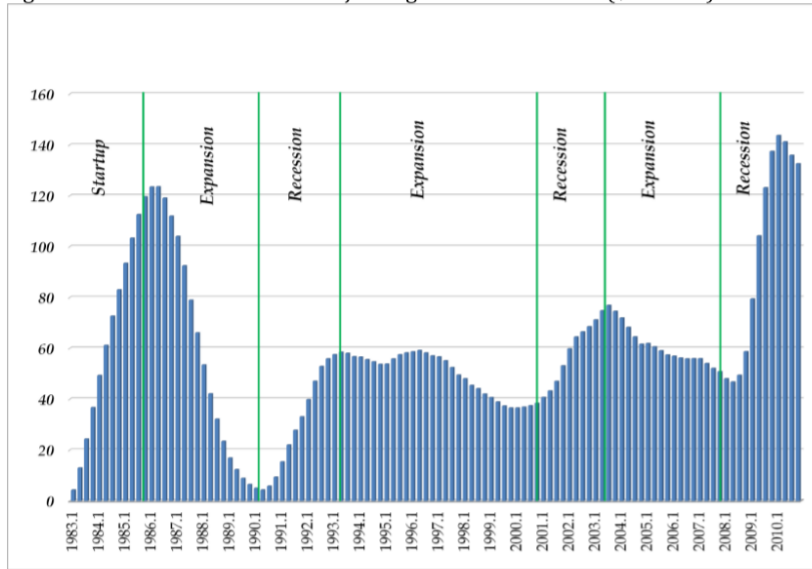
Spending on the Jobs Guarantee program in this model will grow counter-cyclically, averaging

just under one percent:

Figure 7: Total Spending on JG Program as a Percent of GDP
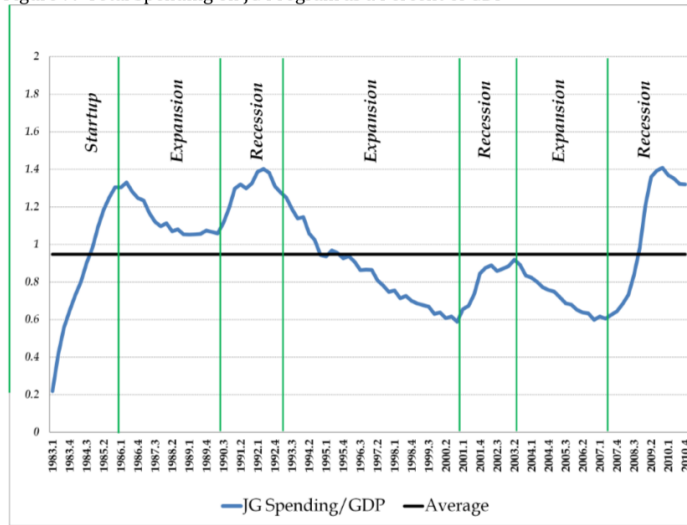
More importantly to those who believe in a budget constraint would be the observation that

federal deficits are relatively unchanged, growing by at most 1.4 percentage points of GDP at the

height of the program. The counter-cyclical nature of the job guarantee prevents a dramatic

increase in the price level, while ensuring relative price and economic stability[82]. Incorporating

local and state budget data yields the change in sectoral balances below:

Figure 10: Sector Financial Balances as a Percent of GDP for JG Program less Base Data

This seems to suggest a uniformly successful program:
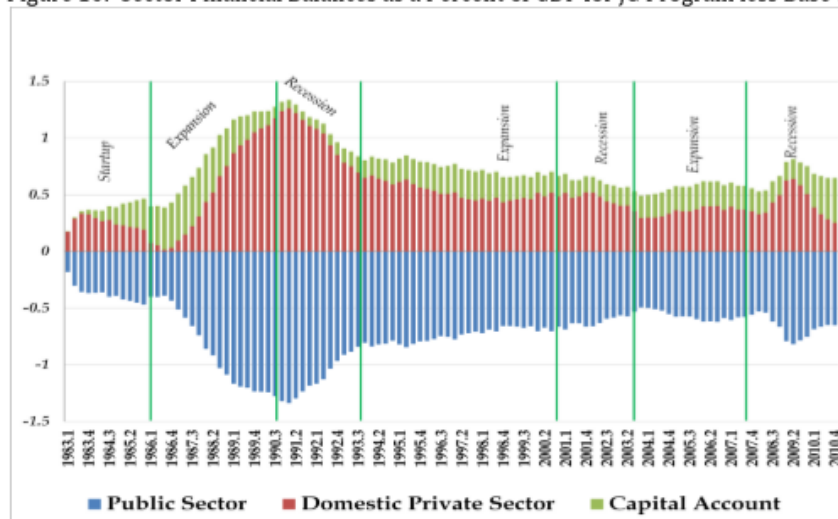
> JG (Job Guarantee) provides significant benefits in terms of (1) macroeconomic stabilization, eliminating involuntary unemployment without sacrificing price stability, (2) actual modest benefits in terms of price stability, (3) modest added protection in terms of financial fragility, (4) increased job creation in the private sector, and (5) additional capital accumulation in the private sector. (Fullwiler, 2013b)

This is in a model which does not include the possible benefits of reduced involuntary

unemployment, or the increase in private sector investment as a result of increased stability and

counter-cyclical policy. A job guarantee is a manifestation of the purest function of government,

to counter unemployment through increased deficits in periods of macroeconomic distress.

---

[82] "The program appears to create a one-time increase in the price level that temporarily raises inflation, though modestly as the effect peaks at about a 0.6 percent increase over the base level of inflation. Thereafter the effects of the program on inflation are countercyclical—very modest increases in inflation relative to the base level during recessions and similarly modest decreases in inflation relative to the base level toward the peak of expansions. Figure 4 thereby shows that the JG program does not itself create inflation and very modestly contributes to price stability across business cycles." (Fullwiler, 2012)

4.E - *The Absence of a Budget Constraint and the Role of the Inflation Constraint*

The ability of government to offer an uninhibited job guarantee is possible due to the absence of the government budget constraint (Section 1.N). Because the only limit on spending before the appearance of inflation is aggregate supply, excessive unemployment suggests that increased spending will not affect inflation. If, as discussed in (Section 4.B), the economy is at what Neoclassicals consider to be full output, a job guarantee program, were it to stimulate aggregate demand, would just as quickly allow workers to leave for higher wages elsewhere. Firms may be motivated by increased wages or hiring to increase capacity, utilizing existing labor (Mitchell, 2010). Because the job guarantee program reaches workers who are involuntarily unemployed in periods of growth, it will effectively reduce what is considered to be the NAIRU (Mitchell, 2010). This is explored further in (Section 4.F).

This is not to say the floating exchange system and the resultant policy space is strictly necessary to enact some form of a job guarantee. Modern Money Theorists observe that the best way to promote fiscal responsibility is through full employment:

> The budget is excessively biased toward tightening in a robust expansion. It the last two growth cycles (neither of which achieved full employment of our nation's resources) federal government tax revenue grew at an unsustainably high pace—15 percent per year and even more. This was two or three times faster than GDP. What this means is that if we were to achieve and maintain full employment, the budget deficit would quickly disappear. And that was precisely the experience during the last half of the 1990s, when a budget surplus was last achieved. (Fullwiler, Wray, 2010)

A fully utilized job guarantee, by the estimate of (Fullwiler, 2013b), would increase the deficit by roughly a percentage point of GDP a year, hardly an unmanageable figure. Efforts have been made to design and apply a jobs guarantee program to crisis ridden Greece (Antonopoulos,

Adam, Kim, Masterson, Papadimitriou, 2014), despite its restricted currency regime[83] within the

EMU. A jobs guarantee is thus good policy, regardless of exchange rate regime. A floating

currency simply allows more policy space (Wray, 2015, p.289-290).

4.F - *Responding to Criticism*

A jobs guarantee program does not necessarily contradict Neoclassical economic theory.

Many of the examples from which the job guarantee is drawn from involve New Deal economic

programs (Wray, 2015, p.235-236), a direct manifestation of Keynesian economic stimulus. But,

on several counts, many Neoclassical economists have disagreed with contentions of Modern

Money Theorists. Wray, in accounting the most prominent objections:

> 1. JG increases employment by stimulating aggregate demand, hence, operates no
> differently from any 'Keynesian' fiscal policy or monetary policy;
>
> 2. JG could increase employment but it cannot enhance (improve) price stability - it is
> still subject to a 'NAIRU' constraint of some sort;
>
> 3. JG is at best a 'make work' program, or more negatively, another name for
> unemployment and, at best, replaces unemployment with underemployment;
>
> 4. ELR proposals have ignored the substantial logistical problems generated by cyclical
> fluctuation of participation in the program;
>
> 5. Supporters of the JG have ignored impacts on long-term government finance imposed
> by the government budget constraint (GBC) (Mitchell, Wray, 2005)

The first charge, that a job guarantee program is not different from traditional fiscal expansion,

ignores the efforts in designing the program to specifically target the unemployed. As discussed

in (Section 4.C), unemployment can exist at or near full output. Efforts to employ individuals

who remain unemployed will not dramatically affect inflation, not so nearly as much as

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[83] The primary targets for funding would be borrowing from the European Investment Bank, tax-backed bonds, or newly issued special purpose bonds. "Even if financed entirely by an increase in borrowing … implementing the direct job creation program would reduce the size of Greece's public debt relative to its GDP. The government's deficit would rise, but … growth would rise even faster" (Antonopoulos, Adam, Kim, Masterson, Papadimitriou, 2014)

Neoclassical efforts to increase financial asset prices, or otherwise increase demand for the goods

and labor of the wealthy, which are already likely to be utilized or employed.

Because a job guarantee program is counter-cyclical, naturally leveling off in periods of

heightened demand, with workers leaving for higher wages elsewhere, the program is not limited

in effectiveness by the absolute lowest possible rate of unemployment. As private sector demand

becomes sufficient to employ more individuals, individuals will leave the job guarantee program,

reducing its scope as well as its impact on aggregate demand (Mitchell, Wray, 2005). The

program will thus avoid threatening price stability. The claim that the job guarantee could

encourage make work or underemployment manifests as a criticism of the principles of the

program itself. The power the program would yield to workers – Wray notes the possibility of

allowing workers to set their own hourly workload[84] - would seem to be a benefit of the program.

Ending voluntary unemployment is a positive of the job guarantee program, and part of this

involves allowing workers the flexibility they would desire. Modern Money Theorists do not

necessarily reject the idea that ensuring full employment will lead to increased worker

bargaining power[85], though they would object to the claim that this is necessarily a bad thing.

The claim that this worker bargaining power, or the fluctuation of the supply of labor within the

program would cause operational difficulties are related to the practical work desired of

individuals within the program[86], discussed in (Section 4.D).

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[84] (Mitchell and Wray, 2005)

[85] (Wray, 2005) asserts that, because the program offers a wage floor, and is designed in the image of an employer of last resort (ELR), it will not lead to permanent yearly wage increases; it will only stabilize wages, ensuring they do not collapse in recession, with workers falling into the program, or skyrocket in expansion, with workers leaving the program for higher wages elsewhere.

[86] Wray notes that "JG jobs would have to be productive yet amenable to being created and destroyed in line with the movements of the private business cycle" (Mitchell and Wray, 2005). Ideally, a JG job would be rapidly scalable, require relatively little skill, produce something of value, and be viable within existing political frameworks (Stone, 2017)

The concerns about the budget constraint and external balance reflect key differences in

MMT and Neoclassical heterodoxy. The absence of a government funding constraint mean that

the job guarantee could be as large as necessary, as long as wages are below most all prevailing

private sector wages, therefore avoiding the possibility of the job guarantee swallowing private

sector work. In Modern Money Theory, the ideal government fiscal policy would not be

subjected to an exchange rate regime and restriction, though such a regime is compatible with the

jobs guarantee (Fullwiler, 2013b) (Antonopoulos, Adam, Kim, Masterson, Papadimitriou, 2014).

Wray notes that more fundamental arguments about the job guarantee, such as the possibility of

corruption or an invasion of privacy, have not dramatically inhibited historical examples of the

job guarantee (Wray, 2015, p. 237) or large scale public works programs in the United States

(Wray, 2015, p.233).

In the aggregate, Neoclassical arguments amount not to a specific objection to the jobs

guarantee program, but the implications it raises, through its realization of MMT philosophy:

> Keynes's main point, which is that unemployment is not caused by faulty operation of the
> labor market (such as sticky wages, lazy workers, generous welfare benefits, or low
> levels of training and education). In other words, he (like the classical economists
> Ricardo and Marx) did not see unemployment as a simple "market failure." Instead,
> unemployment results from insufficient effective demand and can only be resolved by
> creating more jobs—which in turn requires higher demand for the output that would be
> generated by the additional workers. In other words, unemployment is "normal,"
> resulting from the operation of market forces, thus; can be resolved only through
> purposive social policy well-targeted to raise aggregate demand and provide jobs for the
> unemployed. (Wray, 2009)

In the MMT framework, unemployment, as well as aggregate demand, cannot adequately be

managed through traditional monetary policy. The role of government is to ensure full

employment and full output. This means accepting occasionally larger deficits, as well as an

increased role of government in the economy. While this is not as simple or politically easy as

pictured in traditional IS-LM models, it does accurately account for the theory of functional finance (see Footnote 69), and the responsibility of government to maintain an economy which works for all, and all possible work. The Neoclassical assertion that the Federal Reserve can adequately manage employment and prices through interest rates have continually fallen short, and non-traditional monetary policy cannot bridge the gap. The job guarantee can.

Conclusion – The Inevitability of Fiscal Expansion

The collapse in interest rates and sluggishness of aggregate demand has necessitated a new approach to old issues. It is no longer enough to embrace traditional means of executing economic stimulus, when such methods have led to stagnation, unemployment, and preventable harm to the individuals afflicted. Modern Money Theory, if nothing else, wants for Neoclassicals to understand the harm caused by their embrace of the affordability constraint. The claim that government debt is an ill to be avoided at all costs limits the ability of the government to provide for private sector wealth (1.D), and perform one of the most critical functions of Government.

The reason for the effectiveness of helicopter money is not because the method has figured out a manner of tricking the public into holding a valuable financial asset redeemable on no one. Helicopter money works because it functions equivalently to deficit spending (2.G). It may very well increase the aggregate demand curve, but it will not do so through black magic. Helicopter money is deficit spending, with IOUs initially distributed as dollars, as opposed to bonds. The final balance sheet will be unchanged; the final effect on sectoral balance is the same.

For Neoclassicals who believe monetary policy to be as or more effective a means of stimulus than government spending, lower or negative interest rates are an attractive way of avoiding the borrowing necessitated by deficit spending. In a model which incorporates increased interest rates as a result of government borrowing, structural unemployment, and the possibility of government default, it is far more pleasant to encourage ever lower interest rates than to increase deficit spending. It is far easier to rely on blanket stimulus and incentivized borrowing than to confront the fiscal reality of a lack of deficit spending. What Modern Money Theory would allege is that there is no means of escaping the accounting identities which characterize private and public sector wealth (1.C). If the government is adequately lending to

the private sector, through increased deficits, financial wealth will contract, reducing employment. Interest rates cannot escape this relationship, no matter how far below zero they go.

What Modern Money asserts is that as powerful as the image of growing debts threatening default and ruin to the household of government may be, the ability of economists to resist this image, and fight back against its political effects, will dictate the degree to which economic policy can alleviate preventable suffering. A floating exchange rate government is not restrained by financing. It is not constrained by interest rates. Aggregate supply and inflation are what constrain Government ability to promote general welfare. Until methods of increasing aggregate demand are executed with the goal of increasing the financial wealth of the public, economic output will continue to disappoint the citizenry, disappoint government, and disappoint economists.

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