Understanding The Modern Monetary System

Cullen O. Roche

August 5, 2011

ABSTRACT

This paper provides a broad understanding of the workings of a modern fiat monetary system that is applicable to countries that are autonomous issuers of currency in a floating exchange rate system. The paper is broken down into 6 sections which I would recommend reading individually for ease of digestion and understanding.

Electronic copy available at: http://ssrn.com/abstract=1905625

Part I – Introduction to Monetary Realism

In this paper I will explain why Monetary Realism best describes modern fiat monetary systems in which nations are autonomous issuers of their own currency and exist within a freely floating exchange rate system. For this discussion, I will focus primarily on the USA although this subject can be applied to many other nations throughout the world. The principal aim of Monetary Realism (MR) is to objectively describe the operational realities of economies that operate on a fiat monetary system.

Overview - Monetary Realism

Monetary Realism (MR) is a description of the fiat monetary system applicable to nations who are autonomous issuers of their currency. Monetary Realism describes the complex relationship between the government (public sector) and the non-government (private sector) and how the "machine" works and prosperity results.

Monetary Realism is based on the following principles:

- The Federal Reserve and the government have a symbiotic relationship and together are issuers of the currency to the monetary system. Households, businesses and state governments are *users* of public sector supplied currency and also private bank issued monies (i.e. bank deposits).

- The private banking sector issues bank deposits ("inside money") and the public sector issues coins, paper cash and banking sector reserves ("outside money"). Nowadays most market exchanges involving private agents are transacted in bank deposits and, as such, the ins and outs of "inside money" are vital to understanding how the modern monetary system functions. While the private sector component of the monetary system takes center stage in the daily business of market exchanges and economic progress, the public sector also plays an important role.

- As the issuer of the currency, there is no solvency constraint as there might be for a household, state or business. In this regard, one must be careful comparing the federal government to a household because the federal government has no solvency constraint (i.e., there's no such thing as the federal government "running out of money" as it can always call on the banks and the Federal Reserve to serve as agents of the government). Households, on the other hand, have a very real solvency constraint.

- The federal government's true constraint is never solvency, but inflation. The government must manage the money supply so as to avoid imposing undue harm on the populace via mismanagement of the money supply.

Electronic copy available at: http://ssrn.com/abstract=1905625

- The modern floating exchange rate system helps to maintain equilibrium and flexibility in the global economy.

- The currency denomination of debt is very important to assessing the sustainability of public finances. When a government issues debt payable in the domestic currency unit these assets are essentially default-free. (The exceptions are when policymakers "self-impose" constraints that forbid the central bank from acting as the government's banker as per Euroland).

- The government is an entity created by the people and for the people. It exists to further the prosperity of the private sector - NOT to benefit at its expense. If this entity is allowed to exist for its own benefit or becomes corrupted by a concentration of power or abuse of its currency issuing powers it will become susceptible to dissolution via the populace's rejection of that government.

- Governments should be actively involved in regulating and helping build the infrastructure within which the private sector can generate economic growth. The economy is a complex dynamical system with irrational participants. The market cannot be expected to regulate itself or behave rationally at all times. Therefore, some level of government intervention and involvement is not only beneficial, but also necessary. While government assists in the economic process it is ultimately the private sector that is the primary driver of innovation, productivity and economic growth. It is the private sector that propels increases in living standards with its activities the most important factor in giving value and viability to the currency.

- The unit of account or medium of exchange within a specific nation is ultimately a creature of law. It must therefore be regulated by the state; however, ultimately the private sector must accept this legal tender as the currency unit. Therefore, the private and public sectors should best be thought of as being in partnership with one another and not opposing forces. Government by the people and for the people is not the antagonist in this story, but rather an entity that should be best utilized to maximize private sector prosperity.

- Government deficit spending and tax collection should be maintained at a rate that does not impose financial hardship on the private sector. Because the Federal government is not a business or household it should not manage its balance sheet for its own benefit. Rather, taxes and government spending should be managed in a way that most benefits the private sector and encourages private sector prosperity, productivity, innovation and growth.

Brief Historical Background

Monetary Realism (MR) is based on the understanding that most modern fiat currencies eliminate the linkage between convertible currency systems and the constraints these systems impose on its issuer. Systems such as the gold standard do not apply to the modern fiat monetary system. We do not reside in a system in which currencies have any convertible linkage to metals therefore, such thinking is not applicable to a modern fiat monetary system, but this thinking has persisted and still clouds economic thinking to this day.

Although we no longer have a convertible currency system (where the currency was convertible into gold as was the case under the Gold Standard) much economic thinking remains clouded by the belief that we continue to operate on a comparable system when we do not. The monetary system underwent a paradigm shift in 1971 when Nixon closed the gold window although most of mainstream economics did not seem to recognize the importance of this event and has continued working under a false paradigm where autonomous fiat currency issuers are seen as having a true solvency constraint as opposed to an inflation constraint. This leads to misguided policy and unnecessary public harm.

Monetary Realism's Political Agnosticism

One important element of Monetary Realism is its political agnosticism. MR is a blend of many different economic schools and takes this broad understanding to offer an explanation of how the economic system—the machine—works within the existing set of institutional practices. The purpose of MR is not to offer a political or policy bias, but rather to describe the operational realities of a fiat monetary system in an attempt to better educate the reader and provide them with the understanding to make their own informed decisions as to how this system might be changed for the better.

The Dismal Science?

One of the great problems with the economics profession is that there is no firm foundation of understanding from which analysts can build their policy prescriptions. Further, one tends to find schools of thought based on normative rather than positive thinking; prescriptive rather than descriptive. The MR approach is similar to that utilized by Leonardo Da Vinci regarding medicine and human anatomy. Da Vinci viewed the human body as a machine and as one of the first anatomists provided the world with a better understanding of how that machine functioned (e.g. how its pieces worked together, how it was built, how it changed, etc). To Da Vinci, it was all about finding out what IS, not what CAN be. It was only through rigorous analysis of how the machine worked that he and others were able to be in a position to offer advice on medicine and surgery.

The “dismal science” need not be so unscientific. Unfortunately, most of its practitioners are trying to be Hippocrates and not Da Vinci. And like the surgeons of the days of Hippocrates, they do not know how the system works and while they might believe they will “do no harm” too many are too often working from a false premise or a false understanding of the system due to a preconceived ideology.

It is my hope, through MR and a true focus on understanding how the system actually works, that we can provide as close as possible to a purely positive approach to economics. I know this is a bold task, but through focusing on the understanding of the monetary system we can then provide others with a foundation from which our problems can be solved.

Part II – The Basic Operations of Fiat Monetary Systems

The Autonomous Currency Issuer

The sovereign government of the USA includes the Treasury and the central bank and together these domestic monetary authorities form an autonomous currency issuer. In modern fiat money systems the government as the legitimate representation of the people writes the rules of the game. The term "autonomous currency issuer" is a shorthand way to denote the ability of policymakers to determine macro policies and development strategies. Macro policy is the term that economists use to denote simultaneous reference to fiscal and monetary policy. That the activities of the government sector can be considered on a consolidated basis does not mean that the Treasury and the central bank are similar agents; indeed, it is important to understand the distinct roles of fiscal and monetary policy.

The existing monetary system in the USA is one where the Federal Reserve issues most *public sector supplied money* in the form of Federal Reserve Notes (paper cash) and bank reserves. The Treasury issues coins and Special Drawing Rights. The "outside money" moniker refers to the portion of money issued by the public sector and held by the private sector: it is money originating *outside* of the private sector. The term "outside money" is what economists call "high powered money" or "base money". By definition base money excludes the Treasury's cash holdings and deposits held in its two accounts at the Federal Reserve. The Treasury also has deposit accounts held at private banks in so-called Tax and Loan accounts. That the Treasury's deposits held at the Fed and at private banks are not counted in any "official" money supply aggregate does not mean that these money-items are in any way unimportant. Understanding the different means through which the Treasury obtains deposits before and in order to finance spending is the most crucial aspect of fiscal policy.

The US Federal Reserve System was established by a legislative act of Congress in 1913. Those who believe that the US Federal Reserve is an independent entity to the Treasury and to Congress fail to differentiate the master (Congress) from the servant (all the entities subject to the sovereign laws established by Congress). The domestic monetary authorities do different tasks though there is coordination on many policymaking issues. When approaching the subject of an autonomous currency issuer it is appropriate to view the Federal Reserve as a currency issuer. The US Fed finances all of its activities by net/new money creation, that is, *ex nihilo* money creation, "out of thin air". It is appropriate to view the Treasury as a user of monies issued by the central bank and private banks. The US Congress has *chosen* to make the Treasury a currency user in the modern era that was not always the case in US history.

In practice the US Treasury finances all of its spending by first collecting fiscal receipts. Some of these fiscal receipts are funded by taxpayers and others by way of bond sales to a variety of agents. That the Treasury is a currency user does not mean that it need be revenue-constrained though one would not get this actuality from the words of our politicians or the mainstream media or even most economists. There is a broad myth that the government has a true solvency constraint similar to that of a household, business or state government, all of whom are currency users.

It is important to understand that the Federal Reserve and private banks can always be relied on to provide financing for the Treasury with the mechanics working via borrowing operations. Yes, the existing US monetary system is one where "banks" can be harnessed as agents for the federal government. But make no mistake; although these banks can be harnessed as agents of the government at times (as in the role of market maker for Treasury Bond auctions) they are indeed private for profit seeking entities

serving private shareholders. These interests are not always in-line with that of the Federal Reserve, the Treasury, Congress or public purpose.

There are a number of legal obligations on the "primary dealers" (i.e. a select group of private banks) not least of which is to offer bids at Treasury bond auctions.[1] So the US Treasury will *always* find a buyer for its bonds; and, if there is weak demand from private banks, non-bank private agents and/or foreign agents for T-bonds, the central bank can *always* buy them in the open market. The US Fed is a bank and has a potentially unlimited capacity to buy T-bonds (or any other asset in the economy) with *ex nihilo* money creation. So it is misguided to worry too much if at all about the US Treasury ever going bankrupt on its fiat dollar-denominated debts: it never need do so and if it were that would be due to political wrangling. Usually the US Congress postures on whether or not to raise the "debt ceiling" of the federal government and then acts sensibly.

The US Federal Reserve can never "run out of money". Under current laws the US federal government could run out of money if and only if the "debt limit" is not raised. Barring extreme politics it must be acknowledged that US T-bonds are essentially default-free assets: that is how financial markets view them. Why did global capital flock to the United States after the bankruptcy of Lehman Brothers in 2008 even though it was clear only that the US financial system was sitting on a proverbial mountain of mispriced 'sliced and diced' toxic debt? The answer is simple: the "market" sought the safety of the State most capable of handling the most severe financial crisis since the Great Depression. That Washington acts as if the Treasury is "revenue-constrained" and "running out of money" is a perception problem: the Fed is a bank and has a limitless capacity to create money (albeit it must buy T-bonds in the open market).

With this understanding it's important to note that the government does not operate without constraint. The true constraint for an autonomous currency issuer is always inflation and not solvency. This is a crucial distinction that makes a currency issuer quite different from a currency user (like a household or business). Of course, this does not mean the government can spend infinitely, but we will cover this topic more fully in section IV.

The Federal Reserve and How Monetary Policy Works

There's a great deal of misunderstanding regarding the Fed's role in the economy and how it influences various actors. First, it's important to understand that the Fed is an agent of the government. It is created by act of Congress and remits 95% of its profits to the US Treasury. So, contrary to popular opinion, the Fed is not merely an agent of the banks seeking to enrich private bankers. The Fed is aligned with the US government and has a legislative mandate to achieve price stability and full employment (though it does not always achieve this).

The Federal Reserve serves as the banker to the US economy, often referred to as "the lender of last resort". It can best be thought of as a clearing agent to ensure that the system of payments in the USA is always running smoothly. Since the Fed's operations run primarily through the private banking system it is often seen as only benefiting banks and no one else. But a healthy and competitive private banking system benefits us all so this goal is not necessarily misaligned with public purpose. As the primary steward of the banking system and the payments system the Fed must ensure a healthy banking system.

The central bank is the most important bank in any economy. The US Federal Reserve is the most important central bank in the global economy because of the comparative size of the US economy in the global economy and also because the US dollar serves the role of the key international currency. In the United States the Fed has a dual mandate to promote full employment and price stability. The key policy lever in the Fed's toolkit is its direct control over the Federal Funds Rate that is the interest rate (i.e. price of money) that private banks pay on reserves. Contrary to popular opinion, depository banks do not "lend

out" or "multiply" reserve balances though they do lend money (loans create new deposits ex-nihilo) at a mark-up over the cost of reserves (with lending rates varying in respect to loan duration and the credit risks of individual borrowers). Because most "money" in the US monetary system is credit based the changing of this spread can have a dramatic effect on the demand and supply of credit and thus the overall economy.

When economists speak of monetary policy they most often have in mind how the central bank manipulates the federal funds rate. In modern economies there is a variety of lenders in addition to private banks (e.g. money market mutual funds, hedge funds, government sponsored enterprises, issuers of asset-backed securities, etc.) and an array of credit market instruments (e.g. credit cards, mortgage finance, Treasury bonds, etc.) where the lending of money occurs over time spectrums from the short-term (overnight) to the long-term (thirty-years) and much in between. As a result there is a multiplicity of interest rates in the economy. The federal funds rate has the biggest impact on short-term interest rates with longer-term interest rates and privately related debt instrument based interest rates being determined by what the market can bear. It is important to recognize that the Fed's influence on other rates occurs via arbitrage in other markets against the federal funds rate. The US Federal Reserve attains the federal funds target rate by engineering quantity changes in the volume of reserve balances and also by "open mouth policy".

To be exact, the central bank adds or deletes reserves to accommodate demand by depository banks at the target Federal Funds Rate; and does so to maintain an orderly clearing and payments system. By "open mouth policy" it is meant that the announcement of a policy change can itself help to attain the new federal funds rate target as opposed to the Federal Reserve actually engaging in operations. In some respects market participants adjust to the new interest rate level based on their assessment that the Fed would otherwise enforce the rate via open market operations (e.g. the selling or buying of securities and the conducting or unwinding of positions in 'repo' markets). Normally the variance in the Federal Funds Rate is minor though it can be substantial during moments of market stress such as after the collapse of Lehman Brothers in September 2008. It's important to note that the Federal Reserve could, in theory, control the entire yield curve of government debt. That is, if they wanted to pin long rates at 0% there is nothing stopping them from achieving this aside from political and public backlash. In this regard, it's important to understand that the Fed only allows the marketplace to control long rates on US Government Bonds to the degree that the Fed permits. In this regard the term "don't fight the Fed" is most appropriate since the Federal Reserve can always set the price of the instruments it buys.

It is worth taking a look at the US Federal Reserve's balance sheet in order to understand how the Fed attains the overnight Federal Funds Rate through activities mainly with depository institutions. Table 1 presents a simplified version. The reader should take note that the US Treasury has two deposit accounts at the Federal Reserve: how the Treasury obtains these deposits is crucial to understanding fiscal policy. Here let us consider how monetary policy worked prior to the payment of reserve interest in late 2008. Typically, on a short-term day-to-day basis, the central bank engages in repurchase agreements (repos) to add reserve balances and reverse repurchase agreements (reverse repos) to drain reserve balances. The Fed can also unwind repos such that a private bank must part with a reserve or unwind reserve repos such that the Fed must supply a reserve.

ASSETS		LIABILITIES	
Reserve Bank Credit:	(1)	Currency in Circulation	(5)
Securities Held Outright Holdings		Reverse Repurchase Agreements	(6)
Repurchase Agreements		Treasury Cash Holdings	(7)
Term Auction Credit		Deposits with FRB, other than Reserve Balances	(8)
Other Loans (e.g. discount window)		US Treasury General Account	
Net Portfolio Holdings (various)		US Treasury Supplementary Financing Account	
Preferred Interests (in AIG Subsidiaries)		Foreign Official	
Float		Service-Related	
Central Bank Liquidity Swaps		Other	
Other Federal Reserve Assets		Other Liabilities and Capital	(9)
Gold Stock	(2)	**Total Factors, other than Reserve Balances, Absorbing Reserve Funds**	**(5-9)**
Special Drawing Rights Certificate Account	(3)		
Treasury Currency Outstanding	(4)	**Reserve Balances with Federal Reserve Banks**	**(10)**
Total Factors Supplying Reserve Funds	**(1-4)**	**Total Factors Using Reserve Funds**	**(5-10)**

(Table 1 – The Fed's Balance Sheet and Factors Affecting Reserve Balances)

Over the longer-term, and when the central bank wants to increase the size of its balance sheet and the volume of high-powered money, it typically engages in open market purchases of T-bonds. In the current crisis, especially the period from September 2008 to the end of 2010, the US Fed grew its balance sheet by purchasing a wide variety of financial assets other than T-bonds from depository and non-depository financial firms (e.g. mortgage-backed securities). In rare instances the Fed also engages in open market sales of T-bonds to remove "excess" liquidity by draining reserves in order to put upward pressures on the Federal Funds Rate.

Prior to December 2008 the US Fed's daily management of the monetary system revolved mainly around repo and reverse repo operations, that is, with open market purchases of T-bonds used to enact more permanent changes in the volume of high-powered money. In December 2008 the Federal Reserve acquired the legislative power to pay interest on reserves and that has changed how the overnight Federal Funds Rate target is obtained and hence how monetary policy works. For those readers interested in the technical details we refer you to a paper by Marc Lavoie titled "Changes in Central Bank Procedures during the Sub-prime Crisis and Their Repercussions on Monetary Theory".[2] The gist of it is that the US Fed now has an additional policy tool at its disposal and can obtain the overnight Federal Funds Rate even when the banking sector is holding large amounts of "excess" reserves.

It might help to think of the rate on reserves as the de-facto Fed Funds Rate. The reason why this is important is simple. Were the Fed unable to pay interest on reserves the banks would bid down the overnight rate in an effort to rid themselves of reserves. This would put downward pressure on the Fed Funds Rate unless the Fed removed the reserves. By paying interest on reserves the Fed is able to maintain the size of its balance sheet (thus keeping reserves in the banking system) while also keeping control of the Fed Funds Rate. In this regard, the Fed can always be seen as manipulating the Fed Funds Rate HIGHER since reserves put downward pressure on the rate.

The Fed's manipulation of short-term interest rates is often called a blunt policy instrument. Why? When the Fed lowers or raises interest rates it has an indiscriminate impact on economic activity. Take, for example, when the central bank wants to moderate mortgage lending. The policy option of lowering or

raising the Federal Funds Rate will influence mortgage interest rates in addition to other interest rates. Monetary policy is mainly about setting short-term interest rates though it covers other areas as well including: (1) liquidity support to financial institutions to fulfill the Fed's role as a "lender of last resort"; (2) appropriate financial regulation; and, (3) the purchase of T-bonds as required to fulfill the Fed's role as the government's banker.

A feature of the US financial landscape after 1980 was the rising macro role of non-depository financial firms in credit allocation. The US Federal Reserve System was designed to suit an institutional setting dominated by depository institutions; consequently, the rise of the so-called "shadow banking system" has complicated the attainment of monetary policy objectives. This is exceedingly so during periods of acute market stress. As non-depository financial firms fall outside the traditional transmission belt of monetary policy this can make it difficult for the Fed to fulfill its role as a "lender of last resort" and provide direct liquidity support via balance sheet substitutions (e.g. asset swaps for reserves). All of this explains the Fed's new lending facilities designed to provide direct liquidity support to non-depository financial firms (in exchange for a wide range of collateral).

Monetary policy is quite distinct from fiscal policy though the two do overlap and there is much coordination between the domestic monetary authorities. Consider that the US Federal Reserve's "aggressive" interventions during the crisis, particularly after the collapse of Lehman Brothers, effectively "bailed out" financial institutions. In taking distressed assets off the balance sheets of financial businesses in such large volumes there was a fiscal component to the Fed's actions (that did not require Congressional approval). By supporting these firms and essentially "making a market" in illiquid assets (and even removing them from bank balance sheets) the Fed was able to keep asset prices higher than they otherwise would have been and helping make these firms more solvent than they otherwise would be.

It's important to make a distinction between buying Treasury bonds (which are risk free assets) and private market assets (such as mortgage backed securities). When the Fed engages in purchases of T-bonds they are swapping assets with the private sector. I.e. there is no overall change in the net financial assets of the public sector even though these operations do create new "outside" money ex-nihilo. Such operations when undertaken with private banks in fact change the composition of private sector financial assets (swapping reserves for T-bonds) and do not add to the supply of private bank issued money. Fed policies such as "Quantitative Easing" are often mistakenly referred to as "money printing", but we must be very specific in using such terminology as it can often be misleading.

Treasury's "Symbiotic Relationship" with the Fed & Fiscal Policy

In the present era the US federal government must collect and draw on fiscal receipts before and in order to spend. The Treasury, as a currency user, must always obtain deposits before it can spend. We must remember that the Fed is a bank and has a potentially unlimited capacity to buy dollar-denominated debt in the open market so let's worry a lot less about the US Treasury going bankrupt: it need not under existing laws. Further, the government's unique ability to harness banks as agents of government creates a unique ability to remain fully funded.

The Treasury procures revenue in two primary forms: taxes and bond sales. When the Treasury sells bonds to cover the funding shortfall from tax receipts it runs a "budget deficit". Taxation is fairly self-explanatory, but the Treasury's complex relationship with the Federal Reserve and Primary Dealers is often misunderstood so it can be helpful to offer some insights on the "symbiotic relationship".

Like commercial banks, the US Treasury has an account with the Federal Reserve that renders it a currency user. But the US Congress has a unique relationship with the Fed that would allow the Federal Reserve to always make good on payments if necessary. In this regard, the US government can also in some respects be viewed as a currency issuer because the political unity and symbiotic relationship with the Federal Reserve renders the possibility of default practically nil (assuming no willing default). I.e., there is no such thing as the US Treasury not having a funding source since the Federal Reserve can always theoretically serve as the lender of last resort to the government and the Primary Dealers are required to make a market in government debt. To understand this point we can review government bond auctions in the USA. These auctions are carefully orchestrated events that are designed not to fail – that's why they never do. The NY Fed describes the way in which their operations are intricately intertwined with the US Treasury:

> "Staff on the Desk start each workday by gathering information about the market's activities from a number of sources. The Fed's traders discuss with the primary dealers how the day might unfold in the securities market and how the dealers' task of financing their securities positions is progressing. Desk staff also talk with the large banks about their reserve needs and the banks' plans for meeting them and with fed funds brokers about activities in that market.
>
> Reserve forecasters at the New York Fed and at the Board of Governors in Washington, D.C., compile data on bank reserves for the previous day and make projections of factors that could affect reserves for future days. The staff also receives information from the Treasury about its balance at the Federal Reserve and assists the Treasury in managing this balance and Treasury accounts at commercial banks.
>
> Following the discussion with the Treasury, forecasts of reserves are completed. Then, after reviewing all of the information gathered from the various sources, Desk staff develop a plan of action for the day."[3]

Paul Santoro of the NY Fed recently elaborated this "symbiotic" relationship:

> "The U.S. Treasury and the Federal Reserve System have long enjoyed a close relationship, each helping the other to carry out certain statutory responsibilities. This relationship proved beneficial during the 2008-09 financial crisis, when the Treasury altered its cash management practices to facilitate the Fed's dramatic expansion of credit to banks, primary dealers, and foreign central banks.
>
> …Understanding the relationship between Federal Reserve credit policy and Treasury cash management is important because the relationship illuminates an important but sometimes unappreciated interface between the Treasury and the Fed. It also underscores the symbiotic relationship between the two institutions, in which each assists the other in fulfilling its statutory responsibilities."[4]

So you can see that this is all well orchestrated policy. The Fed and Treasury are working in tandem with the Primary Dealers. As mentioned, part of the agreement in becoming a Primary Dealer is to make a market in treasuries:

> "The primary dealers serve, first and foremost, as trading counterparties of the Federal Reserve Bank of New York (The New York Fed) in its implementation of monetary policy. This role includes the obligations to: (i) participate consistently as counterparty to the New York Fed in its execution of open market operations to carry out U.S. monetary policy pursuant to the direction of the Federal Open Market Committee (FOMC); and (ii)

provide the New York Fed's trading desk with market information and analysis helpful in the formulation and implementation of monetary policy. **Primary dealers are also required to participate in all auctions of U.S. government debt and to make reasonable markets for the New York Fed when it transacts on behalf of its foreign official account-holders**."[5]

Therefore it is misleading to imply that the auctions might fail due to a lack of demand or some sort of funding failure. The Primary Dealers are required to make a market in government bonds. None of this means auctions can't fail or that the US government couldn't choose to default. It could. But that would be political folly and misunderstanding. Not due to a lack of funding.

This "symbiotic relationship" can be best seen in a recent US government 10-year bond auction. This auction occurred just weeks after QE2 ended and just before the debt-ceiling debacle occurred in July 2011 so one would have expected this to be a *very* unstable auction. In fact, it was business as usual. As you can see below, the US government was able to auction off $21B in 10-year notes with the Primary Dealers tendering more than 2X the entire auction. Indirect bidders tendered almost half the auction, but were not needed at all to accomplish the reserve drain. The bid to cover at 3.1 was extremely strong.

PUBLIC DEBT NEWS

Department of the Treasury • Bureau of the Public Debt • Washington, DC 20239

For Immediate Release
July 13, 2011

CONTACT: Office of Financing
202-504-3550

TREASURY AUCTION RESULTS

Term and Type of Security	9-Year 10-Month Note
CUSIP Number	912828QN3
Series	C-2021
Interest Rate	3-1/8%
High Yield[1]	2.918%
Allotted at High	65.17%
Price	101.753719
Accrued Interest per $1,000	$5.18003
Median Yield[2]	2.891%
Low Yield[3]	2.808%
Issue Date	July 15, 2011
Maturity Date	May 15, 2021
Original Issue Date	May 16, 2011
Dated Date	May 15, 2011

	Tendered	Accepted
Competitive	$66,594,600,000	$20,969,246,000
Noncompetitive	$30,771,100	$30,771,100
FIMA (Noncompetitive)	$0	$0
Subtotal[4]	**$66,625,371,100**	**$21,000,017,100[5]**
SOMA	$0	$0
Total	**$66,625,371,100**	**$21,000,017,100**

	Tendered	Accepted
Primary Dealer[6]	$44,057,000,000	$9,249,646,000
Direct Bidder[7]	$10,003,000,000	$2,914,000,000
Indirect Bidder[8]	$12,534,600,000	$8,805,600,000
Total Competitive	**$66,594,600,000**	**$20,969,246,000**

(Figure 1 - 10 Year Note Auction)

There can be no doubt that the domestic monetary authorities of the United States together issue an autonomous currency and that macro policies can be "afforded". When the Treasury spends more than it collects in revenues the deficit spending also creates net financial assets (something the private banking system cannot achieve). The potential for policymakers to use the fiat monetary system at its disposal to

obtain the public purpose is not limited by any inoperable financial constraints but the choices of policymakers and all that falls under the world politics.

Lastly, this understanding of "inside" and "outside" monies exposes an important difference between the government's balance sheet and that of private sector entities. There is no operational revenue constraint for the issuer of the currency. There is a constraint to the extent that private sector entities can borrow and spend, however. So the key takeaway here is that the government balance sheet is not like a household's or a state's balance sheet. The US government, as the issuer of currency in a floating exchange rate system can never be said to be "running out of money".

The constraint for an autonomous currency issuer is never solvency, but rather inflation. One role of the government is to help maintain the money supply at a level that does not impose hardship on the private sector. The goal is always to maximize living standards of the currency users in accordance with public purpose. While growth and living standards are ultimately a byproduct of the private sector's ability to produce and innovate, the government can utilize its many tools to influence the composition and quantity of the currency. It does so via managing monetary and fiscal policy in an effort to maintain a balance between the public's desire for net financial assets and private credit.

Part III – The Lead Role of the Private Sector & "Inside Money"

Understanding the "Machine"

The economic system is a machine. The metaphor of a car is useful to understand how all the pieces fit together. Monetary policy is akin to the brake and accelerator pads. When the central bank raises the Federal Funds Rate it does so typically to suppress inflationary pressures. When the Fed increases the Federal Funds Rate (i.e. the short-term interest rate on which monetary policy pivots) this raises borrowing costs across the spectrum of credit products thus putting a brake on economic activity. Vice versa when the Fed lowers the Federal Funds Rate, typically to counteract a swelling in the number of underemployed, this decreases borrowing costs across the spectrum of credit products (especially loans made on a shorter-term basis) thus accelerating economic activity. Monetary policy is mainly about manipulating short-term interest rates though there are other factors.

Fiscal policy is the gear stick. Economists often talk about aggregate supply and aggregate demand. The former is the total amount of final goods and services produced by an economy over a given time period. The latter is the total amount of final goods and services *purchased* by agents over a given time period. What we produce as a nation and the market prices at which goods and services are sold can be different; hence, the labels of aggregate supply and aggregate demand. When the economy is booming during an upswing aggregate demand can exceed aggregate supply leading to inflationary pressures. When the economy is depressed during a downturn aggregate supply can exceed aggregate demand leading to disinflationary or even deflationary pressures. If the economy is suffering from a lack of aggregate demand the government sector can, through larger deficits (i.e. spending in excess of revenues), shift the economy up a gear (please note this can be achieved through lower taxes OR higher spending). In fact, as tax receipts and certain government outlays (e.g. unemployment benefits) both rise and fall in a countercyclical fashion, much of the federal government's budget stance is beyond the control of policymakers and instead determined by the endogenous performance of the economy. This is known as automatic stabilizers. Things like unemployment benefits and other "automatic" forms of spending can rise without any new government action during a downturn.

As Michael Kalecki has famously noted, Government deficits (whether it be via lower taxes or increased spending) can also help sustain the revenues and profits of businesses enabling them to employ more people.[6] You may have noticed the sharp rebound in corporate profits over the course of the post-financial crisis period. This was due, in large part, to government deficit spending; though as of 2012 it

has failed to translate into a strong and sustainable recovery. I won't dive into this in great detail, but the reason for this is rather simple as seen in the following equation derived from Kalecki's work:

Profits = Investment – Household Savings – Government Savings – Foreign Savings + Dividends[7]

Continuing on with the metaphor, government regulation can be annoying (bureaucratic red tape) but when not overdone it is like the safety features built into modern cars (e.g. seatbelts, airbags, etc.) with the purpose to keep economic activities within acceptable boundaries, but without constraining the vehicle from moving. In some respects the government sector is like a "safety net" there to correct and curb market failures (though admittedly, it can also exacerbate problems if misunderstood). Hyman Minsky has noted that capitalist economies are periodically prone to what he called "endogenous" financial instability by which he meant that the "normal" workings of the market system can generate financial excess. He advised on the need to update regulation in view of new developments and for policymakers and theorists alike to humbly acknowledge the possibility that what worked in the past may no longer do so. Minsky was overlooked. I believe that humans are inherently fallible and inherently irrational. Since economies are the summation of the decisions of these irrational actors it is not surprising that the economy has a tendency to veer in the direction of extremes at times. As Minksy famously noted, "stability breeds instability" as economic agents becoming increasingly comfortable and complacent during the boom phase of the business cycle inevitably leading to excess and bust.

Everything else in the car is the private sector. The nonfinancial business sector is the engine, the chassis, the wheels and the seats (what we might think of as the "core" pieces of the car). Nonfinancial businesses are the biggest employers and make most of the products and services essential to increasing living standards. The household sector is the driver and any passengers in the car. As employers, employees, investors and consumers we determine the overall direction of the economic system. The financial sector provides the lubricants in the car (e.g. the oil, coolant, etc). The main role of finance is to facilitate the development of the productive capital assets of the economy and to provide the monetary and financial resources that allow us to undertake activities of our own liking (e.g. buy or build homes). The fuel in the car that motors the economic system is the drive to earn a living, make a profit and save for the future.

Private Bank "Inside Money"

The US monetary system is designed to cater for the creation of the public's money supply primarily by private banks. Most modern money takes the form of bank deposits and most market exchanges involving private agents are transacted in private bank money: it is "inside money" which rules the roost so to speak in the day-to-day functioning of modern fiat monetary systems. The role of the public sector "outside money" creation is comparatively minor.

Like the government, banks are also money issuers, but not issuers of net financial assets. That is, banking transactions always involve the creation of an asset and a liability. Banks create loans independent of government constraint (outside of the regulatory framework). As we will explain below, banks make loans independent of their reserve position with the government.

The monetary system in the USA is designed specifically around a competitive private banking system. It is not a public/private partnership serving public purpose as the Federal Reserve essentially is. The banking system in the USA is a privately owned component of the system run for private profit. This was designed intentionally in order to disperse the power of money creation away from a centralized government and into the hands of non-government entities. Because the Fed finds itself as an agent of the US government working its policies primarily through these private entities it is often the center of much controversy. This will at times appear like a conflict of interest as the Federal Reserve, an agent of the government, is often seen as being in collusion with the banks and at odds with the achievement of public purpose. The government's relationship with the private banking system is more a support

mechanism than anything else. In this regard, I like to think of the government as being a facilitator in helping sustain a viable credit based money system although the banks as private profit seeking entities sometimes find their motives at odds with the overall goal of public purpose.

The Myth of the Money Multiplier

It's important to understand that banks are unconstrained by the government (outside of the regulatory framework) in terms of how they create credit. When we go through business school we are taught that banks obtain deposits and then leverage those deposits up by 10X or so. This is why we call the modern banking system a "Fractional Reserve Banking" system. Banks supposedly lend a portion of their "reserves". There's just one problem here. **Banks are never reserve constrained!** Banks are always *capital* constrained. This can best be seen in countries such as Canada where there are no reserve requirements.[8] Reserves are used for only two purposes – to settle payments in the overnight market and to meet the Fed's reserve requirements. Aside from this, reserves have very little impact on the day-to-day lending operations of banks in the USA. This was recently confirmed in a Fed paper:

> "Changes in reserves are unrelated to changes in lending, and open market operations do not have a direct impact on lending. We conclude that the textbook treatment of money in the transmission mechanism can be rejected."[9]

This is very important to understand because many have assumed that various Fed policies in recent years would be inflationary or even hyperinflationary. But all the Fed has been doing is adding reserves to the banking system in exchange for (mostly) government bonds. Because banks are not reserve constrained, i.e, they don't lend their reserves or multiply their reserves, this doesn't necessarily lead to more lending and will not result in the private sector being able to access more capital. Because banks are not reserve constrained it can only mean one thing – banks lend when creditworthy customers have demand for loans. Loans create deposits, not vice versa. Banks create new loans independent of their reserve position and the Federal Reserve is in the business of altering the composition of outstanding financial assets in an effort to maintain a target interest rate and maintaining the smoothly operating payments system that it oversees. In the loan creation process, banks will make loans first (resulting in new deposits) and will find necessary reserves *after* the fact (either in the overnight market or via the Fed).

So, contrary to what we are all taught in school, loans actually create deposits and not the other way around, as the money multiplier would have us all believe. When a bank makes a loan it debits the Loans Receivable account on its books. To balance this transaction it will create a new liability in the name of the borrower. This loan will create a deposit somewhere else in the banking system (possibly at the same bank) that will cause this new bank to also account for its new liability (the deposit) and change in reserves at the Fed. Scott Fullwiler elaborates on this confusing point (see here for more on this from Fullwiler[10]):

> "The bank does not "use" cash to make a loan. The loan creates a deposit. If cash is withdrawn by the borrower this reduces its deposits. So, the cash is "used" in the process of settling a borrower's withdrawal. This is the key point that confuses so many– banks don't "use" cash or reserves to make loans since those are merely bookkeeping entries. They need cash or reserves to settle withdrawals that arise from creating the loan/deposit."

It is important to note though that the banks wield enormous control over the money supply through the powers granted to them via the government. The modern banking system is fragmented in such a way so

as to disperse the power of money creation across both the private and public sectors. This is consistent with our form of government that is structured in such a way so as to avoid providing any branch of government with unchecked powers. So while the banks wield enormous power over the money supply it is incredibly important that the check on the banking sector be enforced via regulation, but also that the government's power over money be regulated by the people.

Part IV - A Fiat System Where Everyone Still Thinks We Have a Solvency Constraint

The idea that the government does not have a true solvency constraint is shocking to many people. But it's becoming increasingly well known as the Euro crisis exposes deep flaws for nations that do not issue their own currencies. As I've mentioned several times before, there is no such thing as the USA not being able to pay off the liabilities that are denominated in a currency that it can essentially force the banking system to produce. Warren Buffett recently made this point at an investor conference:

> "The United States is not going to have a debt crisis as long as we keep issuing our debts in our own currency. The only thing we have to worry about is the printing press and inflation."[11]

The analogy between a household and the government is difficult to break free from. So why has this thinking never changed in the USA? Despite the dramatic changes in the monetary system after the Nixon shock neo-liberalism came to dominate economic theory in the 70's and 80's. After the economic successes of the Reagan and Clinton eras there was little doubt that such thinking was accurate. Of course, we all know what happened next and now many of these neo-liberal beliefs have been pointed to as causes of the recent credit crisis.

More important is the fact that investors and economists have simply ignored the fact that the USA underwent drastic changes in 1971 when Nixon closed the gold window. In essence, the system underwent this dramatic overhaul, but the thinking never changed all that much. Overnight, theories and thinking should have been rewritten, but never truly were. Whether one likes it or not, we are operating in a truly fiat world. Therefore, the thinking and theories that are derived from this era are largely defunct. Monetary Realism fills this void by *describing* how a fiat monetary system operates.

The fixed exchange rate misconception (such as those based on the gold standard) exists even at the highest levels of government and has been propagated by many of the world's most prominent economists. There's little doubt that you've heard US politicians discussing the financial problems of the USA as though we are "running out of money", akin to Greece or constrained in the same ways a household or business is. These analogies are all false. I believe most people in power do not understand exactly how our monetary system works due to this fundamental flaw in understanding the difference between floating and fixed exchange rate systems. Again, the idea that the government does not have a solvency constraint is difficult to overcome since, as currency users, we always think of our lives and our businesses as being solvency constrained. The idea of an entity not having a similar constraint is often difficult to comprehend.

But people always ask: "how could these leaders not get it? How can the brightest minds and the leaders of our country not understand all of this?" Well, if we review the past actions of Alan Greenspan (who has admitted to using a "flawed" model) and the actions of Ben Bernanke leading up to and in response to the household debt crisis we can see that they have substantially misinterpreted how a modern monetary system functions. In fact, in a 2008 Congressional hearing Alan Greenspan admitted that the ideological framework he had based his entire life's work on, was "flawed":

> **REP. HENRY WAXMAN:** Do you feel that your ideology pushed you to make decisions that you wish you had not made?
>
> **ALAN GREENSPAN:** Well, remember that what an ideology is, is a conceptual framework with the way people deal with reality. Everyone has one. You have to -- to exist, you need an ideology. The question is whether it is accurate or not.
>
> And what I'm saying to you is, yes, I found a flaw. I don't know how significant or permanent it is, but I've been very distressed by that fact.
>
> **REP. HENRY WAXMAN:** You found a flaw in the reality...
>
> **ALAN GREENSPAN:** Flaw in the model that I perceived is the critical functioning structure that defines how the world works, so to speak.
>
> **REP. HENRY WAXMAN:** In other words, you found that your view of the world, your ideology, was not right, it was not working?
>
> **ALAN GREENSPAN:** That is -- precisely. No, that's precisely the reason I was shocked, because I had been going for 40 years or more with very considerable evidence that it was working exceptionally well.[12]

So you can see that the man running monetary policy in the USA for 18 years was working under a "flawed" framework. If the Fed chief has a flawed understanding of our economic system then who can we really expect to understand all of this?

Much of this confusion is also derived from the gold standard in which governments were revenue constrained. The Euro system, which is also a single currency system (like the gold standard) adds significant confusion to the current environment and is often confused as a flaw in fiat money. In reality, the Euro proves why single currency systems are inherently flawed when they do not involve truly autonomous currency issuers. The nations within the Euro are analogous to the states within the USA. In this regard, they are currency *users* and not currency *issuers*. Without floating exchange rates and/or a central treasury there is no balancing mechanism that allows this currency union to function as the USA does. The gold standard imposed similar constraints on the world and put trade deficit nations at inherent risk. We can see from the Euro crisis that this sort of currency union causes massive imbalances within such currency systems. Therefore, the ideas of the gold standard and the Euro are not applicable to the monetary system in which the USA exists.

How Could It Be Possible That Our Leaders Don't Understand This?

I believe these misconceptions persist due to three primary reasons:

- First of all, this is all **highly** complex. Understanding the functions of a monetary system is high finance. We cannot expect everyone to understand it and we should expect most theories and outlines of the modern monetary system to be somewhat incomplete due to the dynamic existence of modern economies.
- Second, this system in its current format is not very old and most of the people in power currently were educated by a generation in which this system was not largely applicable. Despite the fact that the world changed dramatically in 1971 when Nixon closed the gold window, we continue to work under theories and textbooks that don't fully account for this change. Therefore, the theories of old run rampant in modern economic circles.

- Thirdly, politicians and ideologues have a vested interest in keeping the American public from understanding that the government is fundamentally different from a household, state or business.

The True Constraint for a Currency Issuer

Now that we understand that an autonomous currency cannot "run out of money" it's important to also understand that there are real constraints on a government's ability to create money. Aside from the obvious constraint of real resources, **the autonomous government's true constraint is never solvency, but inflation.** Inflation becomes problematic when a nation's spending outstrips productive capacity. This is a real reduction in our standard of living. But it's important not to confuse some inflation with a reduction in living standards. You might have read that the US Dollar has fallen 90% since the inception of the Fed in 1913. This is true actually. The purchasing power of the dollar has fallen substantially. But this does not necessarily mean the standard of living of Americans has declined 90% since 1913. In fact, living standards have soared since then. How is this possible? Ultimately, the real benefit of our labor is the time it provides us. Adam Smith once said:

> "The real price of everything, what everything really costs to the man who wants to acquire it, is the toil and trouble of acquiring it."

There is a theoretical level of infinite demand in a capitalist economy. What I mean by this is that, in an extreme sense, we can consume all that time will allow. If you were unconstrained by time you could, in theory, consume all that the producer can produce. Theoretically, this chicken and egg story can go on forever. Of course, the greatest luxury of all is quite finite. *We are always constrained by time*. The entrepreneur offers us the opportunity to take advantage of the ultimate luxury by giving us more time.

There's No Free Lunch

It's very important to remember that just because the government does not have a solvency constraint, it does not mean it has **no** constraint. The bogey here is inflation that is constantly based on the tax rate, spending, borrowing, production, consumption, the money supply, etc. So spending and taxation must always be done in accordance with a nation's productive capacity so as to avoid imposing undue hardship on the private sector via a reduction in real living standards. **Thus, government cannot just spend and spend or the extra dollars in the system will chase too few goods, drive up prices and reduce living standards. It's important to understand that government cannot just spend recklessly. This is important so I'll say it again. This does not give the government the ability to spend and spend. If they spend in excess of productive capacity and tax too little they can create mal-investment and inflation resulting in lower living standards.** Likewise, if the government taxes too much and spends too little they create a government surplus and private sector deficit (by accounting identity). This *can* result in deflation and/or excess private sector debt levels as the private sector literally suffers a dollar shortage.

Some people claim that Monetary Realism says budget deficits don't matter. That is a vast misrepresentation of our position. Deficits most certainly do matter. Maintaining the correct level of deficit spending is, in many ways, a balancing act performed by the government based on an understanding of the sectors of the economy. It is best to think of the government's maintenance of the deficit like a thermostat for the economy. When the economy is running cold the deficit can afford to be higher. When it is hot the deficit should be lower. Because there is no solvency concern in the USA (as

there is in the revenue constrained European nations) the only concern is inflation or possible hyperinflation.

It's also important to note that spending by the government must be focused on its efficiency. If spending is misdirected or misguided there is a very real possibility that this spending will simply result in higher inflation that is not offset by increased productivity. If you pay people to sit on their couches all day long there is no reason to believe why this sort of government policy will not result in long-term economic decline in the citizenry's standard of living. Living standards, ultimately, come down to the private sector's ability to produce and innovate. The USA is extremely wealthy not because our government issues a lot of money, but because we are an extremely productive and innovative nation. The power in capitalism is the ability to offer its users more time. Therefore, government has an incentive to promote productive output and maintain sound stewardship of its currency.

Part V – Understanding Modern Money

"Money" is a vague term. Technically, anything can serve as money. And historically, many things have served as "money". As a social construct "money" is really nothing more than a tool that helps us interact in our everyday lives. The history of "money" is lost in time, but scientists have discovered forms of monetary systems in primitive monkeys in which sexual favors are traded in exchange for protection, grooming and other "bonds". These primitive societies use forms of money in exchanges as a form of social bond that interlinks the species in the attainment of survival. Obviously, modern forms of "money" have evolved to become more complex and institutionalized.

In this regard, it is best to think of "money" as being the social tool with which we primarily exchange goods and services. Money is more than merely a medium of exchange, but its primary purpose for existence and most prominent use is in exchanges for goods and services. Specific forms of "money" are generally viewed as having a high level of utility if they meet certain criteria:

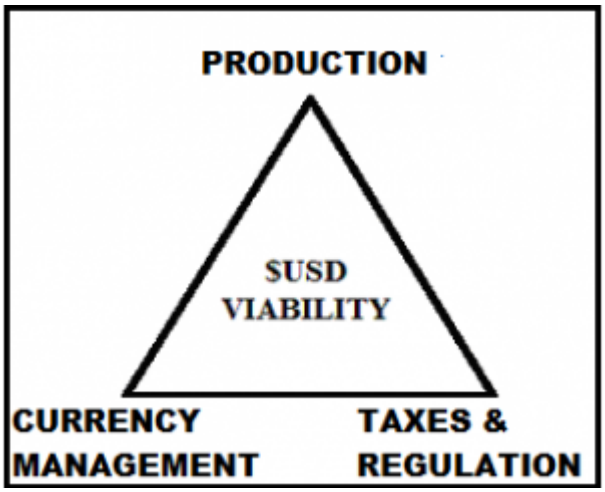
- A widely accepted medium of exchange
- A store of value
- A widely accepted unit of account

In the modern monetary system fiat "money" (or paper money) is the form of "money" we utilize on a daily basis. In a strict sense, this paper money is largely a creature of law. In the society of the USA this paper money takes the form of US Dollars. In the next few sections we will dive deeper into the value of "money" and the importance of "money" to our society.

What Gives Fiat Money Its "Value"?

Monetary Realism views money as being driven by many different factors. What backs the notes a government creates? What gives these pieces of paper value? It's helpful to break the demand for fiat money down into two components. The first is acceptance value and the second is quantity value. ***Acceptance value*** represents the public's willingness to accept something as the nation's unit of account and medium of exchange. This is achieved mainly through the legal process and democratic vote. That is, the government and the people deem a specific thing (such as the US Dollar) as the accepted unit of account and medium of exchange. But the government cannot force currency acceptance upon its users merely by stating the thing that is usable as the nation's medium of exchange. ***Quantity value*** describes the medium of exchange's value in terms of purchasing power, inflation, exchange rates, production value, etc. This is the utility of the "money" as a store of value. While acceptance value is generally stable and enforceable by law, quantity value can be quite unstable and result in currency collapse in a worst case scenario.

Ultimately, these pieces of paper represent some amount of output and production that can be purchased. The notes in and of themselves have no intrinsic value, but serve as a medium of exchange that allows the citizenry to exchange various goods and services. The willingness of the consumers in the economy to use these notes is largely dependent on the underlying value of the output and/or productivity, the government's ability to be a good steward of the currency and the ability to enforce its usage. I like to think of this as an interconnected bond between these various forces. If any link in the bond is broken the nation's currency is at risk of collapse. Importantly, production sits at the top of this bond. After all, if a nation has nothing to produce then the formation of a monetary system serves little purpose. Further, a system that does not evolve via production can expect to become increasingly unstable over time as living standards stagnate.



(Figure 2 - The fiat currency linkages)

The value of these notes is ultimately determined by three key linkages:

1. Production

2. Currency management

3. Taxes, laws & regulation

Production is vital in giving any currency its value. The goods and services that are produced by the citizens and the value that other citizens are willing to pay for these goods and services is what ultimately makes any fiat currency viable. Therefore, government has an incentive to promote productive output and maintain sound stewardship of its currency. Otherwise, they risk devaluing the currency and possibly threaten the stability of their currency system. Paying its citizens to sit at home doing nothing, buy cars they don't need or purchase homes they can't afford are unproductive forms of spending that are likely to turn a nation of producers AND consumers into a nation of consumers. If government is corrupt in its spending and becomes an institution that is mismanaged and detracts from the private sector's potential prosperity then it is only right that the citizens revolt, denounce the nation's currency and demand change.

The autonomous nation's government, which is the organized body formed through representation of the private sector, deems what is acceptable as currency. In the USA our representatives have deemed that the currency is the US dollar[14]. The government has deemed the dollar as the USA's unit of account and medium of exchange. In this regard, the dollar is a creature of law.

While the state plays an important role in setting the acceptance value of money, money is not necessarily valuable only because the state says it is valuable. The "value" of the currency involves other linkages. Keynes once compared money to a theatre ticket:

> "money is the measure of value, but to regard it as having value itself is a relic of the view that the value of money is regulated by the value of the substance of which it is made, and is like confusing a theatre ticket with the performance".[15]

This is an accurate portrayal of currency in a modern fiat monetary system. Government issued fiat money, in and of itself, has no intrinsic value. The theatre ticket has no value aside from the paper it is printed on, however, given the value of the performance citizens will be eager to attribute a certain value to these tickets because they are deemed by the theatre as being the tool of entry into the show. If the theatre mismanages the number of tickets in circulation they will devalue the tickets. In much the same way, the US government deems the US Dollar to be the ticket with which we can see (and interact in) the US economy. If the show is good (productivity is high), the number of outstanding tickets are not mismanaged (government doesn't spend in excess of productive capacity) and the tickets are sustained as the only form of entry into the show (the tax and legal system sustains itself) then the currency remains a viable medium of exchange. So we can see how the linkages shown above work in tandem to give a fiat currency a particular value.

It's important to note that the government does not maintain a coercive monopoly over the people. That is, currency viability is not merely based on the government's ability to enforce its usage. As mentioned above, there are other components that play an equal or greater role in currency viability. But that does not mean that taxation and the legal framework are not crucial in helping to sustain the viability of the system. Without rules and regulations that help sustain the fabric of the monetary system, the government that Americans have built long and hard to create would become increasingly fragile. The United States Secret Service was in fact created specifically for this purpose - to protect the US Dollar.[16] There is arguably, nothing more important to government and societal stability than maintaining the value and faith in the nation's currency.

"Money" Is Not "Wealth"

It's important to understand that "money" is not "wealth". Money is simply the tool that allows citizens to exchange and transact in the underlying goods and services. If a government spends "money" in excess of a nation's underlying productive capacity it will devalue this "money" and generate destructive inflation. This would result in too much money chasing too few goods and a potential decline in real living standards. So, the key for government is to balance the amount of money in the system in order to keep the temperature just right - not too hot and not too cold. So, Monetary Realism does not claim that the government can just recklessly spend.

Like excessive taxation, a lack of spending can be debilitating for the economy (at times). We know from the sectoral balances (discussed in detail below) that a tax cut has the same impact on the federal budget deficit as a spending increase (both add to the size of the Federal budget deficit). So it can be useful at times to use this understanding to help the private sector achieve higher living standards through the changes in budget deficits and the private sector's accumulation of net financial assets. For instance, if the government were to tax us all 100% of our incomes the economy would collapse and the government would be "rich". In essence, the currency issuer would be suffocating the currency users of the medium of exchange that is legally deemed the nation's "money thing". The government balance sheet would be "healthy", but the private sector balance sheet would be destroyed. Not a plan for economic prosperity. After all, we do not run our government for the benefit of government, but for the benefit of the private sector. Government is merely a tool that can be utilized to further private sector prosperity.

Another example that readers might find helpful is the idea of private sector saving being government dissaving. We often hear pundits and economists say that the US government should pay off the national debt. But paying off the national debt would involve eliminating all of the savings bonds in the US economy. This is why you never hear your grandmother say "I wish Uncle Sam would pay off the national debt so I could get rid of these savings bonds!". The entire concept of paying off the national debt is nonsensical. Government debt merely represents a private sector savings account. Moving money from a savings account to a checking account (the logical equivalent of paying off the national debt) only eliminates a form of savings account that the private sector relies upon heavily.

Is Time The Ultimate Form of Wealth?

The reason why any society forms in the first place is because we have a collective understanding that we can achieve a better **overall** living standard if we leverage one another's strengths and abilities. I have argued that human beings are the ultimate pack animals even though we like to think of ourselves as rugged individualists. This basic innate understanding is what drives us to need one another and understand that we are better off in groups than we are alone.

Our monetary system is simply an evolution of this understanding from spoken bonds (and even unspoken bonds) to written bonds. But the goal of a society has not changed despite the fact that the tools we use have changed. The end game has always been the same. **It is the desire to generate improving living standards through the efficient use of resources resulting in the optimization of time.** The element of time, in my opinion, is the key piece of this puzzle. The true holy grail of modern macro is not price stability or full employment. It is time. Time is the ultimate form of wealth in a modern society. It is through time that we are able to live fuller and more meaningful lives. What you do with your time is up to you. But the key is that having more time means being able to do more of what you want to do. In theory, we can consume and produce an infinite amount given the time. But time, as we all know, is not infinite for finite creatures. Here, I introduce the "MR Law":

"We generate improving living standards through the efficient use of resources resulting in the optimization of time"

This is a powerful concept and one that can change the way modern societies approach economics, public policy and every day life. When one understands that time is the ultimate form of wealth their perspective is dramatically altered and the playing field is changed. And while full employment and price stability are admirable goals, they become secondary to this understanding that sits above them in the hierarchy of societal goals.

How does the entrepreneurial process work to create real wealth?

To understand the relationship between innovation, consumption, production and living standards we will use an example. Alexander Graham Bell is one of the greatest innovators in American history. So what did Mr. Bell do exactly? He created a more efficient way to communicate by inventing the telephone. Clearly, communication is a vital part of human life. And in theory, there is infinite demand over the long-term to communicate.

At some point in his life, Mr. Bell sat down and probably said something to the extent of – "it would be far more efficient if I could talk to Mr. Smith immediately as opposed to sending him a telegram". Clearly, this desire was not unique to him. And all Mr. Bell did was fill a demand by inventing a product that helped consumers meet this demand. But the important role that Mr. Bell played in the job creation process is not that he necessarily created jobs independent of his consumers (as we showed above, they

are interdependent). After all, there were plenty of messengers already employed and working before the telephone came into being (Mr. Bell actually *destroyed* their jobs).

What Mr. Bell did is give his consumers more **time** to consume *other* goods and services. He reduced the toil and trouble of having to acquire things by providing them with a product that made their lives more efficient and productive. Just imagine all the ways that the telephone improves our quality of life and makes us more efficient. The businessman in NYC no longer had to wait for the telegram from his business partner in Chicago to discuss their new business decisions. Instead, he picked up a telephone and a decision was made in a matter of minutes. There are innumerable (better) examples of the way that a simple innovation such as Mr. Bell's helps us to improve productivity, efficiency and ultimately our standard of living.

The MR Law: "We generate improving living standards through the efficient use of resources resulting in the optimization of time"

As previously mentioned, it's not uncommon to hear that the US dollar has fallen 90%+ since the Federal Reserve was created. This is technically true, but despite its decline in purchasing power, our real standard of living has increased dramatically because we have become so much more productive. An American in 2011 lives a much fuller life than an American in 1913. This is because we have been afforded (through productivity) the luxury to use more time as we please.

The key point here is that improvements in our standards of living provide us with the ultimate form of wealth – they give us more time to do the things we think will help us achieve happiness (whatever that might be to any particular person). This is the ultimate form of wealth. The entrepreneur gives us more time to consume more goods and services and do the things we want in our lives. If we look at the modern economy we can see how streamlined this process has become. For instance, last night at 7 PM I put my laundry in the wash, I put the dishes in the dishwasher, ordered dinner from a local restaurant and went upstairs into my office where I did an hour of work. At 8 PM my dinner arrived, my laundry was done, I ate dinner on a fresh clean plate and I had done an hour of work in this period. Imagine trying to do all that 100 years ago? How long would it take you? Days? Perhaps even weeks? That is a remarkable increase in living standards. And why are we able to do all these things in such a condensed period of time? Why am I able to consume so much more than I could have 100 years ago? Because entrepreneurs created a machine that cleans my clothing for me, they created a machine that cleans my dishes for me, they created an oven that cooks my dinner, a car that allows the deliveryman to deliver my dinner, and invented a computer which allows me to efficiently and effectively accomplish work. We live in a remarkable world. If, as a people, we are not productive and our government is a poor steward of our currency then it's not unimaginable that our real living standards will stagnate or even decline.

Importantly, we must understand that consumption and production are two sides of the same coin. We often hear economists arguing about supply side policies and demand side policies. The reality is, BOTH are important. Mr. Bell needs customers to sell his phones just like Mr. Bell's customers needed Mr. Bell to communicate more efficiently. Too often the world of economics devolves into a black and white story when the truth generally lies somewhere in between.

Lastly, it's important to understand in these discussions of inflation and living standards that hyperinflation is a very different phenomenon from inflation (which is quite normal in a fiat currency system).[17] In recent years we have heard many hyperinflation predictions based on misunderstandings of banking and the monetary system. Hyperinflation is a disorderly economic progression that leads to complete rejection of the nation's currency. It is not merely a monetary phenomenon, but primarily a political phenomenon. Throughout history, hyperinflations have tended to occur not because the state prints money, but because of exogenous factors. The primary causes have been decline in production, corruption, regime changes, ceding of monetary sovereignty and loss of a war. These rare events have

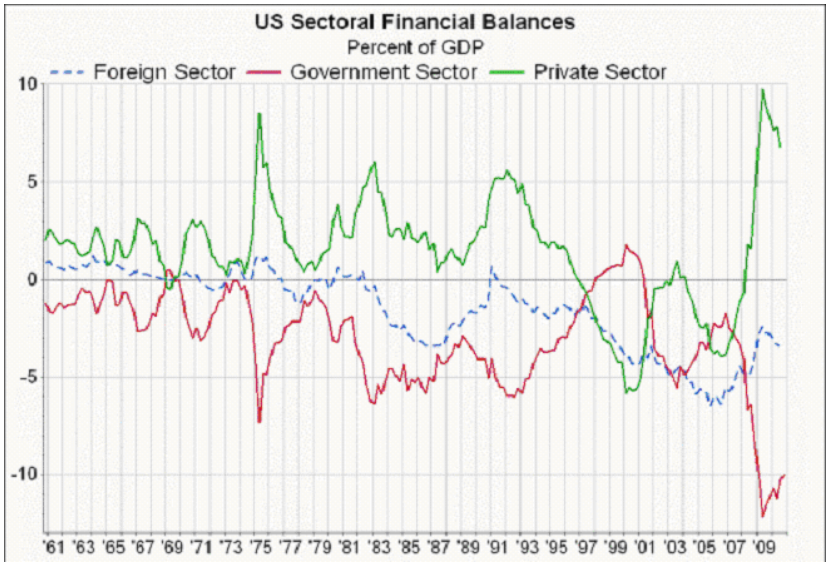
tended to lead to a decline in tax receipts or an increase in the money supply ultimately resulting in decline of the currency.

Part VI - Understanding Sectoral Balance Economics & S = I + (S-I)

It's very important to understand the sectoral relationship within an economy and the ways in which growth is produced by the various sectors and their interdependence. Contributors to Monetary Realism find much relevance in the Sectoral Financial Balance approach as developed by Wynne Godley. It is a useful lens to help conceptualize the macro economy and to understand how the government budget relates to the current account balance and private sector saving-investment decisions. The approach is an *ex-post* accounting identity derived by rearranging the components of aggregate demand and it is typically presented as a three-sector model comprising the private, public and foreign sectors. It is a fundamental identity that links aggregate demand (i.e. the total amount of final goods and services *purchased* by agents over a given time period) with changes in sectoral net financial asset positions.

The Sectoral Financial Balance approach measures the income of the three sectors net of spending over a given time period. When any sector spends more than its income it runs a deficit and, vice versa, when a sector spends less than its income it runs surplus. It is vital to recognize that amongst the three main sectors it is the public sector (and the federal government in particular) that is most able to run large deficits over a prolonged period. This is because the budget constraint of the US federal government is not similar to that of an individual, household, business or even a state or local government.

The deficit of the entire government (federal, state, and local) is always equal (by definition) to the current account deficit plus the private sector balance (excess of private saving over investment). To be more precise: net household financial income = current account surplus + government deficit + Δbusiness non-financial assets. The private sector surplus represents the net saving of the private sector (households and businesses) from income after spending, while the public sector deficit is the government's deficit. This is the essence of the sectoral balances approach made famous by the late great Wynne Godley. It can be visualized with the following diagram:



(Figure 3 - Sectoral Balances)

The sectoral balances can be broken down according to GDP:

GDP = C + I + G + (X – M)

Where **C** = consumption, **I** = investment, **G** = government spending, **X** = exports & **M** = imports

Or stated differently;

GDP = C + S + T

Where **C** = consumption, **S** = saving, **T** = taxes

From there we can conclude:

C + S + T = GDP = C+ I + G + (X – M)

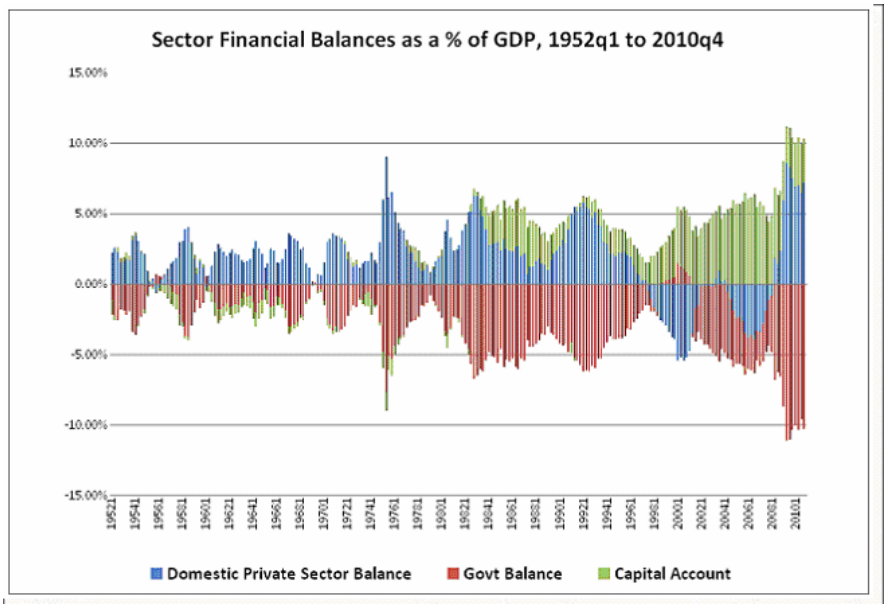
If rearranged we can see that these sectors must net to zero:

(I – S) + (G – T) + (X – M) = 0

Where **(I – S)** = private sector balance, **(G - T)** = public sector balance & **(X – M)** = foreign sector balance.

The three main sectoral balances *must* as an accounting identity add to zero. In Figure 4 what stands out is that the US government has run budget deficits for the majority of the last 60 years (in fact well over 200 years). Equally important is that the domestic private sector balance remained in surplus until 1997 where it remained in deficit on annual basis through to the end of 2007. So why was the private sector running a deficit from 1997-2007 an ominous development? It meant that the private sector was in aggregate getting less liquid and more fragile. Disaggregation of the private sector into its subcomponent sectors (e.g. households, nonfinancial business and financial business) is needed to understand precisely how these deficits impacted on the composition of balance sheets. It remains that the negative financial balance run by the US private sector during 1997-2007 was a pointer to growing financial fragility with the crisis that began in 2007 a testament to the merits of this conceptual framework.

You can see this different version of the above chart in visual form by viewing the sectoral balances in the USA going back to 1952:



(Figure 4 - Sectoral Balances part 2)

The SFB approach underlines that when the federal government spends more than it collects in revenues the deficit spending creates net financial assets for the private sector in the form of government bonds. Private agents benefit from these net financial assets in various ways. There are investors who get a 'safe' interest-bearing asset for their investment portfolios. There are also the thankful recipients of the Treasury's deficit spending who get paid for doing their business or receive a social security payment that enables them to meet their bills and survive. It's important to note that these saving bonds are an asset of the private sector and a liability of the government. So to "pay off the national debt" would, by accounting identity, involve the elimination of an important private sector financial asset. This does not mean the government can make the private sector wealthy by providing us with government bonds, but at mentioned previously, the public sector's constraint is different than the private sector's constraint (solvency versus inflation) so the notion of paying off the national debt must be placed in the proper context.

The Importance of Understanding S = I + (S-I)

It's important to take the private sector component in the sectoral balances one step further or the reader might confuse the true driver of economic growth as being the government and not the private sector. Although government can help to drive economic growth (if used properly) we should not forget that investment is the backbone of private sector equity. This simple rearrangement of the private sector component highlights this fact and helps to avoid thinking that I>S might be a negative for the economy when the reality is that a high level of Investment is generally good for the economy.

If we rearrange the above sectoral balances equation we can arrive at a very important identity:

(S – I) = (G – T) + (X – M)

S = I + (G – T) + (X – M)

Which rearranges to:

S = I + (S – I)

We can also think of this from the National Income Accounting equation:

C + I + G + (X – M) = C + S + T

Which rearranges to:

(S-I) + (T-G) + (M-X) = 0

Which rearranges to:

I = S + (T-G) + (M-X)

This helps to show the reader that wealth creation is not just achieved through government deficit spending, but largely occurs independent of government. On this point it's important to understand the difference between real wealth and financial wealth. A good way to think about all of this is to understand that the private sector can create real wealth entirely independent of the government. A farmer does not need the government to turn 2 cows into 10. The farmer has achieved real wealth creation regardless of the government's spending position. What the government must generally do over time is help to **facilitate** the wealth accumulation process by providing the net financial assets to help the private sector monetize this real wealth and sustain its demand for saving. It's important not to put the cart before the horse here. It's best to think of government as being a *facilitator* of wealth creation and not the driver. Hence, our focus on S=I+(S-I) with the emphasis on the idea that "the backbone of private sector equity is I, not Net Financial Assets." The idea is not novel, but simply clarifies the understanding of the private sector component.

Turning quickly to the data, the US general government deficit averaged around one-sixth of gross private domestic investment during the period 1960-2007, and fourth-fifths during 2008-2010. It should not be controversial at all that the main driver of private saving is usually private investment but that during economic downturns the role of general government deficit-spending becomes more important.

MR understands that consumption and production are two sides of the same coin, but it is through production that we grow the coin. We highlight this point by expanding on the sectoral balances equation and showing that S = I + (S-I) in order to emphasize that I>S does not mean the private sector financial position is necessarily deteriorating or experiencing a “net loss”. So while the sectoral balances equation is useful in understanding the dynamic of the system it should not be used to imply that the private sector’s financial position is necessarily deteriorating because I>S . When one takes this perspective you bring a more balanced understanding of the way our monetary system actually works. Private sector saving can be decomposed into the amount of saving created by investment “I” and the amount of net financial assets transferred from other sectors (S – I). That is the focus of the equation S = I + (S – I) as it highlights the fact that the private sector is the primary driver of economic prosperity while government is a powerful facilitator.

It's important not to overstate the idea of "net financial assets". "Net financial assets" (NFA) as a source of savings and vehicle for private agents to accumulate wealth is more at the margins than the center. There is no debate that T-bonds play a crucial role enabling deficit-spending and providing 'safe' collateral for private agents; however, the importance of financial claims issued by the public sector and held by private agents is drastically elevated when focusing on net positions instead of gross positions. Consider that at year-end 2011 the volume of US Treasury debt outstanding was $10.5tr while the value of financial assets summed across the private sectors was $130.4tr (yes there is some double-counting) and the value of household sector total assets was $72.3tr of which $49.1tr was financial assets. At year-end 2010 the market value of US private sector assets held abroad was $19.8tr. When taking into account that just under half of US T-bonds are held by foreign agents it is clear that the role of the Treasury supplied NFAs as a source of savings and vehicle for private agents to accumulate wealth is relatively modest.

When one connects the dots between production and the MR Law you can begin to understand why private sector production matters so enormously to the living standards of the society. In this regard, I is the core of improved living standards, because it is through I that we create things that make us more productive and therefore give us more time. But we must maintain a balance here and never forget that government can be an important facilitator of the wealth accumulation process who wields powerful tools that can aid us in driving demand, stabilizing economic growth and helping to improve overall living standards.

Conclusion

In sum, most of what we have been taught in school is based on a now defunct monetary system (the gold standard). Monetary Realism seeks to describe the operational realities of a modern fiat currency system. While its description of the modern monetary system is accurate, it is by no means a holy grail. And those who apply policy prescriptions are merely utilizing the realities of the system to apply what they *believe* are sound uses of the system. It does not mean the government can just credit accounts and create real wealth.

One of the key understandings here is that government can be used as a tool to help the private sector to achieve prosperity. I think it's important to understand that government is not always bad or that government spending is always evil. In fact, government serves a vital purpose within our society. How involved that government is in the day to day lives of its citizens is to be decided by the citizens themselves.

I believe Monetary Realism provides a more accurate portrayal of the monetary system in which we reside in the USA and in many other autonomous countries throughout the world. It is my hope that a greater understanding of our monetary system will result in a less dogmatic, more pragmatic and more rational perspective of our economy so as to help us all in achieving the prosperity we desire.

References:

1 – FRBNY – Administration of Relationships with Primary Dealers

2 - Lavoie, Marc, 'Changes in Central Bank Procedures during the Subprime Crisis and Their Repercussions on Monetary Theory', Working Paper No. 606, Levy Economics Institute, Annandale-on-Hudson, NY, August 2010.

3 – FRBNY, Open Market Operations

4 – Santoro, P. (2012), The Evolution of Treasury Cash Management during the Financial Crisis

5 – FRBNY – Administration of Relationships with Primary Dealers

6 - Kalecki, M. Theory of Economic Dynamics

7 – Roche, C., (2012) Where are Corporate Profits Headed?

8 – Clinton, K. (1997), Implementation of Monetary Policy in a Regime with Zero Reserve Requirements

9 – Carpenter & Demiralp (2010), Money, Reserves and the Transmission of Monetary Policy: Does the Money Multiplier Exist?

10 – Fullwiler, S. (2008), Modern Central Bank Operations – The General Princplies

11 – Roche, C. (2011), Buffett's Silly Talk About the US Debt

12 - Edesess, M. (2011), Beyond the Efficient Market Hypothesis

13 – Innes, A. (1913), The Banking Law Journal

14 – Wikipedia (2011), Legal Tender Cases

15 – Keynes, JM. (1914), The Royal Economic Journal, vol. XXIV

16 – United States Secret Service, Know Your Money

17 – Roche, C. (2011), Hyperinflation – It's More Than Just a Monetary Phenomenon

*** This paper will be updated and improved periodically, if not frequently.*

**** A Special thanks to Brett Fiebiger, Warren Mosler, Scott Fullwiler, V Ramanan, Michael Sankowski and Carlos Mucha who have helped me enormously with this work.*