Understanding the Modern Monetary System

Cullen O. Roche

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ABSTRACT

This paper provides a general understanding of the workings of the modern fiat monetary system in the United States within the context of the global economy. The work is primarily descriptive in nature and takes an operational perspective of the monetary system using the understandings of Monetary Realism.

1. Introduction

The principal aim of this paper is to objectively describe the operational realities of the modern fiat monetary system in the United States using the understandings of Monetary Realism. The paper seeks to provide the reader with a better overall understanding of money, the macroeconomy and how the monetary system as a whole can be used to achieve prosperity. Although this work will focus primarily on the USA this subject can be applied to many other nations throughout the world.

Overview - Monetary Realism

Monetary Realism (MR) is a description of the fiat monetary system applicable to nations who are issuers of their own currency, but have outsourced the broader money supply to the private banking system. Monetary Realism describes the complex institutional relationship between the government (public sector) and the non-government (private & foreign sectors) and how the monetary "machine" works to contribute to economic prosperity.

Monetary Realism is based on the following principles:

- The primary role of "money" is to serve as a means of payment. Money can take many forms, but in the modern money system the final means of payment comes primarily from *within* the private banking system in the form of bank deposits. In other words, the dominant form of money in the modern monetary system is issued almost entirely by the private banking system.

- The monetary system exists primarily for private purpose in order to create a system for efficient exchange of goods and services. The private sector plays the lead role in helping to advance the well-being of the society in which money is used.

- In many market based systems such as the USA, the money supply is essentially privatized and controlled by private banks that compete to create loans which create deposits (money). Contrary to popular opinion, governments in such a system do not directly control the money supply nor do they create most of the money.

- The public sector (the government) plays a facilitating role in helping to regulate and manage the infrastructure within which the money system operates. If properly utilized the government can be an extremely powerful tool in helping to stabilize and create efficiencies within the money system.

- The Federal Reserve (the central bank in the USA) and the government have a symbiotic relationship and together are issuers of the currency to the monetary system. Currency, or what MR refers to as "outside money" (because it comes from *outside* the private sector), accounts for bank reserves, cash notes and coins. In addition to the Fed, who issues bank reserves, the US Treasury is the other issuer of outside money in the form of cash and coins. Households, businesses and state governments are *users* of public sector supplied currency and also private bank issued monies (i.e. bank deposits or inside money because it comes from *inside* the private sector).

- The private banking sector issues bank deposits ("inside money") and the public sector issues coins, paper cash and bank reserves ("outside money"). Nowadays most means of payment 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 currency, the government need not have a solvency constraint as there might be for a household 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 Central Bank to serve as agent of the government to create money for its own spending needs). Households, on the other hand, have a very real solvency constraint as they can quite literally "run out of money" since they cannot always obtain funding from the private banking system.

- The federal government's true constraint is never solvency, but inflation and foreign currency risk. The government must manage its policies so as to avoid imposing undue harm on the populace via mismanagement of the money supply or via inefficient use of government taxing/spending. Although insolvency via inflation or foreign exchange is quite different from a true solvency constraint it should not be confused as necessarily being less harmful.

The Dismal Science & Getting Back to a Da Vinci Methodology

The primary purpose behind the formation of Monetary Realism was to formulate a better understanding of the monetary system at its operational level without emphasizing the role of policy. Therefore, one of the key elements 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 utilized and optimized.

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 he provided the world with a better understanding of how that machine functioned (e.g. how its pieces worked together, how it was built, etc). To Da Vinci, it was all about finding out what *is* and 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 fully understand 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 works at an operational level, that we can provide a primarily positive (descriptive) approach to money, economics & finance.

2. Understanding Modern Money

Money, as it exists in a modern monetary system, is a social construct that serves primarily as a medium of exchange (means of payment). Money also serves other purposes, but we will focus primarily on its most basic and common function. As a social species we exchange goods and services via the use of this tool. Throughout history many things have served as money and still do serve as money. But certain forms of money can be thought of as having a higher "moneyness" than other forms of money within a particular society. In general, that which is most readily accepted as a means of final payment can be thought of as having the highest level of moneyness.

- ***Fiat money****: A form of money that is widely accepted due to government law.*
- ***Unit of account:*** *A standard monetary unit for measurement of value of goods, services and financial assets. In the USA the unit of account is the US Dollar.*
- ***Medium of exchange:*** *A widely accepted intermediary instrument that facilitates the sale, purchase or trade of goods/services.*

What is Money?

From an economic and financial perspective understanding precisely what money is and how it influences the economy is crucial. Why? Because money is the most important tool we use in modern life. Money is at the heart of every financial transaction, including our calculations of output, profits, and every measurement of our financial health. Understanding how this tool works is central not only to understanding how the monetary system and the economy works but to understanding modern human life.

Why Do We Use Money?

Before we can say what money is, it's helpful to understand first why money even exists. To answer that question, and really begin to understand money and the history of money, it might help to understand the most basic purpose that money serves. As highly socialized and intelligent animals, we humans have created various tools that improve our ability to trade and interact. A barter system is relatively primitive and insufficient because it forces you to be able to obtain something that someone else will want in exchange for the things you might need. Creating a universal medium of exchange is the bind that ties all goods and services together by making all goods and services exchangeable. At its core money is simply a social construct that allows for the exchange of goods and services.

Money, within a modern human society, is highly evolved, formal, and even institutionalized. The true history of money is lost in time, but it's likely that money started in the form of unspoken promises, evolved through a barter system of some type, and has expanded over time into formal promises and legal contracts. Today most money is defined and protected by laws. Modern money has evolved primarily into the electronic records of account.

We live in a highly advanced and sophisticated economic system that is predicated on the social interaction of trading goods and services for money. Said differently, money is the medium by which we gain access to the things we desire. You can't always trade a back scratch for a back scratch, but humans have resolved that issue by creating something that facilitates the exchange of most goods and services. For instance, if I want a back scratch, but I don't want to scratch your back, it's not a problem. Instead you scratch my back in exchange for $10, thereby voiding my need to provide you with an equivalent back scratch, and you can go buy whatever you want.

At its most basic level money is just a tool that is created to facilitate exchanges among highly socialized animals—a social tool that acts as an intermediary in transactions. So now we can arrive at our first understanding of money:

1. *Money is a social construct.*

But this still doesn't tell us why money exists. Why do you work such long hours to acquire pieces of paper or electronic credits in a bank account? Why do we stress and worry about money? It might help a bit to think of money as a theater ticket.[1] If the economy (and our access to goods and services) is the theater, then we can think of money as the ticket that gains us entry

to the show. In a modern monetary system a specifically designated form of money is little more than something that gains you entry to be able to transact within that economy. And we work because of and stress about our ability to obtain money because our access to the goods and services that we need ultimately relies on obtaining this tool.

At times in human history money has been many things, including unspoken bonds, sticks, rocks, precious metals, pieces of paper, or records on the Internet.[2] Technically, many things can and do meet the various properties of money. These things generally represent something of a certain value that can be easily measured. In other words we have developed a system of using items of particular value that represent the right to claim a certain amount of goods and services. It is, in essence, a way of recording a deferred promise. But we should be careful not to always think of money as a physical thing or something that has intrinsic value. Money represents a certain value, but the money thing itself (like a cash note) does not necessarily have intrinsic value.

Money in a modern society is largely made up of electronic records and numbers in computer systems. Your bank account exists primarily in a computer system as a record of account and not as a bar of gold in a vault. The electronic money system has come to dominate the way we transact and use this social tool. This brings us to our second crucial understanding about money:

2. *Modern money is not necessarily a physical item or something with intrinsic value but is merely a medium of exchange and a record of account.*

But what is the primary purpose of money? As I mentioned briefly earlier, the primary purpose of money is to provide us with a convenient medium of exchange for access to goods and services. That is, instead of toting around bars of gold to buy groceries at Walmart or relying on a barter system, we have created convenient ways to record our payments in order to obtain goods and services that we might desire. This gives us access to the ability to feed our families, send our children to school, maintain our health, enjoy ourselves, and so on.

Money, while important, should never be confused with true wealth. Remember, money is merely the medium of exchange. It is a tool like many other tools humans create, and it provides us with a means to an end. While the ticket gets you into the theater, what you want is not necessarily the ticket. The ticket simply gives you access to the show, which is the true end. Money is merely the means to that end. Although money is a necessary component of modern life, it is not necessarily the equivalent of true wealth.

Now, true wealth has different meanings to different people, but in most cases it involves the addition of companionship, good friends, good family, good health, access to food, access to water, security, et cetera. More money might make it more convenient to achieve certain things, but money and true wealth should not always be thought of as the same thing. Confusing money with true wealth is like confusing the theater ticket with the performance. Although we need some amount of tickets to enter the theater, the quality of that show is not necessarily dependent on the number of tickets we obtain throughout our lives. While money can certainly make it easier to obtain material goods, and perhaps even some level of happiness, it is always a means to some other end and should not be confused with the end.

This brings us to what might be the most important lesson we can learn about money:

3. *Money is not necessarily true wealth.*

Almost anything can serve as money. You could take toilet paper to the local pawnshop and trade it for something of equal value, assuming the pawn shop will find it valuable. More commonly we tend to see people view precious metals like gold as money. This is not incorrect. Anything can serve as a medium of exchange. It's just that gold is a rather inconvenient form of money. It's heavy, hard to value in real time, and not widely accepted as a medium of exchange. So it's a fairly inconvenient means of purchasing goods and services.

Most of the money in a modern monetary system is what's called fiat money. Fiat money is money that has no intrinsic value but is used as a medium of exchange because a specific government deems it so. In Latin fiat means "let it be." Today's monetary systems are designed as social systems that institutionalize and organize money under specific laws within specific societies. Governments regulate these monetary systems and identify the entities that may issue specific types of money. The US government regulates the US monetary system, which is designed around the private banking system.

If we use a soccer analogy we can think of the private banking system as the playing field upon which the US payments system works. The government is the referee (regulator), and we are the players trying to obtain balls (money) to score goals (consume and produce). But if you want to play on the field designated and regulated by the US government, then you must use the ball that it deems to be acceptable, and that means engaging the playing field that is the US banking system.

In the United States the dollar is the unit of account in which all money is denominated. Unit of account is the measuring stick we use for money. Much like the metric scale, money is measured according to its unit of account. So one dollar can buy you X number of whatever goods or services you desire. The unit of account is different in different countries, but the concept is always the same—a government has designated a specifically denominated money as the unit of account (for instance, the yen in Japan, euros in Europe, or pesos in Mexico), and the government regulates the playing field upon which that unit of account is used. If you want to participate in the US economy, you must generally obtain money that is denominated in US dollars, which is the standard form of payment accepted for goods and services. In most cases that means participation in the US banking system using bank deposits denominated in dollars.

This brings us to the next important understanding about money:

4. *Modern money is a specifically defined unit of account.*

For the purposes of this paper I will focus primarily on the economic purpose of money. At its most basic purpose, money is simply a medium of exchange, the tool that gains us access to goods and services. Today's primary tool of exchange is bank deposits. The modern monetary playing field exists primarily within the banking system, which processes trillions of dollars in

payments every single day. When you buy a sandwich with your debit card, your bank is processing a payment on your behalf. You are transferring bank deposits from your bank account to that of the seller. When you take money out of the ATM to make a purchase, you are drawing down a bank account in order to transact with physical money more conveniently. All these transactions are centered around the banking system and the deposit system.

Today's monetary system exists primarily on spreadsheets as numbers in computers recorded by banks as bank deposits. Bank deposits are created when banks make loans; then these deposits are used as the primary means of transacting business at the point of sale. Modern money is both someone's asset and someone else's liability, existing primarily in computer systems as records of this basic accounting. For instance, when a bank creates a loan, the loan generates four specific accounting entries. The loan is an asset for the bank; when the recipient of the loan deposits the money, the deposit creates a liability for the bank. For the borrower the loan is a liability and the deposit is an asset. You will find that some basic accounting is helpful in understanding modern money since money within a modern financial system always represents an accounting construct.

Understanding that most modern money is based on the electronic deposit system controlled by the banking system, and that this money is created as credit through the loan creation process, is crucial. This sophisticated banking system allows us to conveniently and efficiently exchange goods and services by establishing a money supply that is elastic. This means the money supply can expand and contract according to the needs of its users. This brings us to an essential understanding of modern money:

5. *Most modern money is credit.*

In today's electronic money system most money exists as a record of account on spreadsheets as a result of the accounting relationship that created the money through the loan creation process.

Understanding Inside Money & Outside Money

In most modern monetary systems money is primarily distributed through the private competitive banking process. Banks compete for the demand of loans in a market based payment system. This mechanism to distribute money is essentially a privatization of the money supply to the private banking system. That is, the primary form of money we all utilize on a daily basis is controlled almost entirely by private banks (though its growth is largely contingent upon demand).

Bank money is what MR calls "inside money". Inside money is created *inside* the private sector. Inside money includes bank deposits that exist as a result of the loan creation process (loans create deposits). It is the dominant form of money in the modern economy and as the economy has become increasingly electronic it has taken on a more prominent role in the means of transacting business. Money is no longer just a physical thing, a cash note or a gold bar. Its most common form is now numbers in a computer system.

It is helpful to think of the US monetary system as mainly existing within the US payments system. The US payments system is a primarily electronic system regulated by the government and maintained primarily by the private banking system. That is, the government helps oversee

the use of this system, but private banks maintain the daily processing of transactions that occur within this system.

In today's modern electronic monetary system just 14% of the value of all transactions occur with cash notes while electronic payments dominate the means of payment.[3] In addition, over 90% of the money supply is created by private banks. As we will see below, the idea that cash is a more dominant form of modern money, is false since cash serves primarily as a facilitating feature to inside money. Like all forms of outside money in the modern system, cash is a facilitating money to the central form of money in the system (inside money).

Inside money (money created by banks inside the private sector) can be inherently unstable as the entities that issue this money are inherently unstable. The 1800′s and early 1900′s, for instance, experienced substantial volatility in banking as an inherent conflict of interest developed. Banks, as private profit seeking entities are inclined to maximize profits at all times. As Hyman Minsky once noted, stability creates instability.[4] This is particularly true in banking as economic stability tends to result in banks relaxing their lending standards to maximize loan creation and profit potential. But this stability is often a mirage that results in future instability and often banking crisis. Those who understand the credit crisis of 2008 know this all too well. Therefore, government money can serve an important facilitating feature to help stabilize the inside money system.

This brings us to the other dominant form of money in our monetary system – outside money. Outside money is money created *outside* of the private sector. This includes cash notes, coins and bank reserves. Cash and coins are created by the US Treasury while bank reserves are created by the Federal Reserve (reserves can be thought of as deposits held on reserve at the Fed). Although cash & coins are becoming obsolete in some money systems, they remain prevalent forms of money in most economies. This form of money primarily serves for convenience purpose that allows one to draw down a bank account of inside money (via ATM for instance) to make transactions in physical currency. In other words, cash and coins are primarily used by those who have an account in inside money for the means of conveniently transacting business in physical form.

The most important form of outside money is bank reserves or deposits held on reserve at Federal Reserve banks. These deposits are held for two purposes: 1) to settle payments in the interbank market; 2) to meet reserve requirements. Bank reserves are ONLY used by banks and the central bank in the interbank market and do not reside in the non-bank private sector. It is best to think of reserves as deposits held in accounts at the various Fed banks to settle payments within the banking system. For example, if you have a bank account at JP Morgan and you use your bank deposits to purchase a sandwich from someone who banks at Bank of America (who subsequently deposits the funds at B of A) the banks will settle this payment by transferring reserves in the interbank market. This interbank system creates a market where the Federal Reserve can help streamline settlement of payments and ensure stability and liquidity within the payments system.

Central Bank "reserves" sometimes confuse people because they are not a familiar instrument in the non-bank private sector economy. To better understand reserves it can be useful to think of the banking system as having its own banking system. That is, the non-bank private sector uses the payment & deposit system via private banks. But the banks use their own deposit system which we call the reserve system. These reserves help the banks settle payments and process interbank payments across their own payment network.

What's crucial to understand here is the way that outside money serves primarily to facilitate the existence of inside money. That is, the creation of outside money is almost entirely a facilitating feature to influence or stabilize inside money, the primary form of money in the economy. Through its vast powers the government can serve as an important stabilizing force in a system that is designed primarily around inherently unstable private competitive banking.

In understanding inside money and outside money, one must also understand that it is the banks who "rule the monetary roost" so to say. That is, banks issue almost all of the money in circulation today in the form of loans and the government is designed primarily to support this privatized money creation source. Contrary to popular belief, the government does not issue or "print money" (except in the most literal sense, ie, the US Treasury prints notes to meet demand for use at private banks by bank customers who have accounts in inside money). The government is only the issuer of outside money which is designed to facilitate and support the use of inside money.

Understanding "Moneyness"

Modern forms of money are largely endogenous (created within the private banking system), but are organized under the realm of government law. The specific unit of account in any nation deems how money will be denominated. The government therefore decides the unit of account and can restrict/allow certain media of exchange. The unit of account in the USA is the US Dollar. Organizing money under the realm of law increases a particular form of money's credibility in the process of transaction as laws create protection for its users.

We learned earlier that money is credit. The word credit comes from the Latin word credere meaning "to trust". Being a trust based creation, money is likely to be unstable without proper oversight by its users. The government also helps oversee the viability of the payments system and can decide what can be used within that payment system as a means of settlement. In the USA the primary means of settlement are bank deposits and bank reserves. Therefore, these forms of money serve as the most widely accepted forms of payment within the money system.

There are different forms of money within any society and they have varying forms of importance and "moneyness". Moneyness can be thought of as a form of money's utility in meeting the primary purpose of money which is as a medium of exchange.

In the USA the money supply has been privatized and is dominated by private banks who issue money as debt (which creates bank deposits representing over 90% of the money supply in most modern fiat money systems). Banks are granted charters by the government in the USA to maintain the payments system in a market based system. Banking is essentially a business that revolves around helping customers settle payments. So it's helpful to think of banks as being the institutions that run the payments system and distribute the money within which that system operates.

In a capitalist economy like the USA inside money exists primarily to disperse the power of money creation away from the government towards a market based system where banks compete to create money. This paper will not opine on whether that system is optimal or not, but rather, will simply state what is.

It is helpful to think of money as existing on a scale of moneyness where particular financial instruments vary in degrees of utility (see figure 1). As Hyman Minsky once stated, anyone can create money, the trouble is in getting others to accept it.[5] Getting others to accept money as a

means of payment is the ultimate use of money. And while many things can serve as money they do not all serve as a final means of payment.

The primary forms of money within the monetary system include cash, coins, reserves, bank deposits, financial assets (such as stocks and bonds), SDRs, commodity money (such as gold), foreign currencies (such as the Yen and Euro) and other rare media of exchange (such as BitCoins or other alternative forms of money). Understanding the level of moneyness in each of these forms of money is crucial to understanding the modern monetary system.

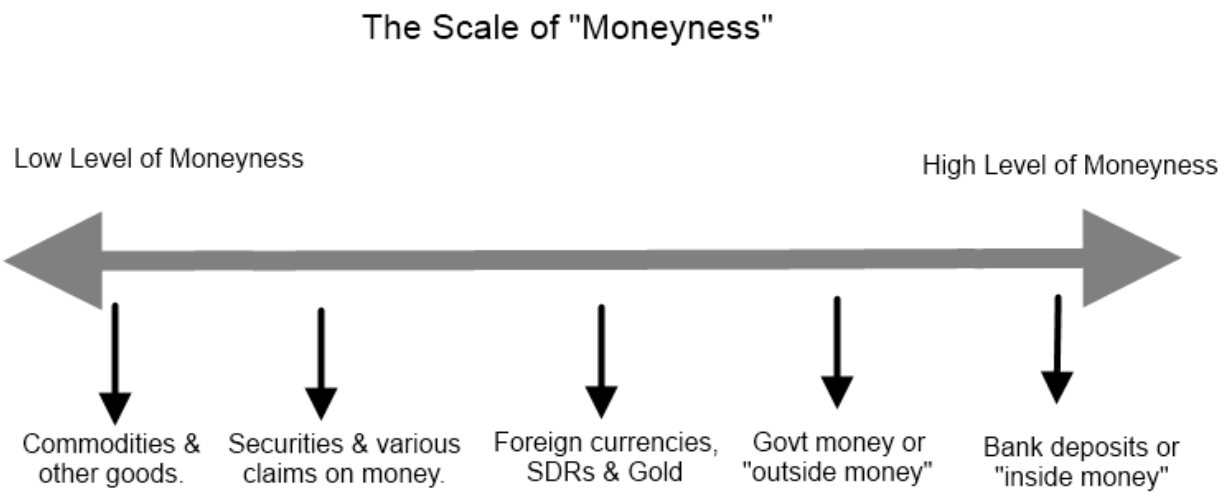
Bank deposits have the highest level of moneyness within the modern monetary system because they are the primary means of settling payments. As users of the modern electronic payment system we are all users of the US payments system which requires us to transact in bank issued deposits. The electronic payment system is, by a wide margin, the most widely utilized means of payment in the USA.

Cash, coins and bank reserves are also important forms of money in the modern monetary system, but serve primarily as facilitating forms of money to the inside money system. Cash is a convenient form of money, but because it serves to facilitate the use of an inside money account (by allowing one to draw down this account) it has a lower level of moneyness. Reserves are a crucial element of the interbank system of payment settlement, but again serve mainly to facilitate the system of inside money by helping banks settle deposit payments via the interbank market. While reserves play an important role in the settlement process their existence as a facilitating form of money for interbank settlement renders them a lower level of moneyness. This is particularly true since only banks can settle payments in bank reserves (households and businesses are not users of the Federal Reserve interbank system).

Since foreign currencies are fungible on a foreign exchange market most foreign currencies have a moderately high level of moneyness. For instance, a Euro is not good in most stores in the USA (because the unit of account in the USA is the dollar), but can be easily exchanged for US Dollars of various forms. SDRs and gold, which are broadly viewed as universal mediums of exchange, can be viewed similarly though they vary in degrees of convenience for obvious reasons. Gold for instance, is widely viewed as money and can be easily exchanged for money, but is not widely accepted as a means of final payment.

Most financial assets like stocks and bonds are “money like” instruments, but do not meet the demands of money users in terms of having high liquidity or acceptability as a medium of exchange. These financial assets are easily convertible into instruments with higher moneyness, but are not widely accepted as a final means of payment.

Lastly, most commodities and goods are low on the scale of money since they are unlikely to be accepted by most economic agents as a means of final payment.



(Figure 1 – The Scale of Moneyness)

What Gives Fiat Money Its "Value"?

Monetary Realism views money as being driven by many different factors. But what gives this money value if it has no intrinsic value? What backs the notes or electronic records of account that a society creates? What gives these pieces of paper, coins and inputs value? It's helpful to break the demand for fiat money down into two components.

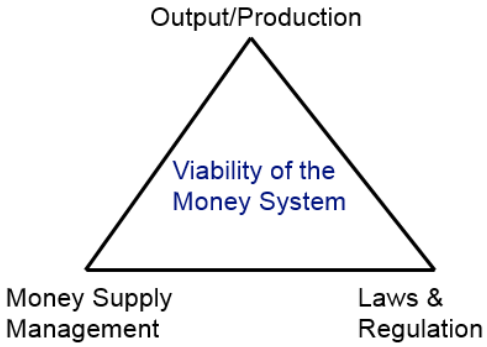
The first is acceptance value and the second is quantity value. ***Acceptance value*** represents the public's willingness to accept something as the nation's unit of account and medium of exchange. This is achieved mainly through the legal process. That is, the government and the people deem a specific thing (such as the US Dollar) as the accepted unit of account and medium of exchange. The government also regulates the monetary system within which that unit of account is utilized. But the government cannot force money acceptance upon its users merely by stating the thing that is usable as the nation's unit of account.

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 monetary collapse in a worst case scenario.

Ultimately, these pieces of paper or electronic records of account represent some amount of output and production that can be purchased. Notes or cash, for instance, 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, the banking system's distribution of money and the ability to regulate its usage. It's useful to think of this as an interconnected bond between these

various forces. If any link in the bond is broken the nation's monetary system is at risk of collapse.

Importantly, production sits at the top of this hierarchy. After all, if a nation has nothing to produce then the formation of a monetary system serves little purpose. A lack of productive output will make the other linkages inherently weak. 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 Money System's Linkages)

The value of any form of fiat money is ultimately derived from three key linkages:

1. Output/Production

2. Money Supply Management

3. Laws & Regulation

Production is vital in giving money 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 money viable. Therefore, government has an incentive to promote productive output and maintain sound stewardship of the money supply. A government that implements poor policy, disincentivizes productive output and abuses the money supply threatens the stability of the monetary system. A money system whose institutions and government are corrupted will likely become corrupted as a whole.

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 money involves the other linkages described above. As previously mentioned, JM 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".

This is an accurate portrayal of money in a modern fiat monetary system. 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 (the banking system prudently manages the money supply) and the tickets are sustained as the only form of entry into the show (the tax and legal system sustains itself) then this money remains a viable medium of exchange. But ultimately, the "value" of the tickets are primarily dependent on the quality of the show which is determined by the supply and demand for the nation's productive output. So we can see how the linkages shown above work in tandem to give a fiat money a particular value.

"Money" is Not "Wealth"

It's important to understand that "money" is not necessarily "wealth". Money is the tool that allows citizens to exchange and transact in the underlying goods and services. In other words, it gives us access to a form of wealth (goods and services), but does not necessarily represent wealth in and of itself. If a society 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 leading to a potential decline in real living standards.

It can help to think of money as being the thing with which we "chase" forms of real wealth. It gives us access to real wealth, but having a lot of money does not necessarily mean we are "wealthy" (though it could certainly make life easier). In fact, seeking to accumulate money can often lead one astray as they begin to view money as the end and not the means. After all, as a social construct, money is the thing that allows us entry into the show, but entry into the show does not necessarily equate to becoming wealthy. As participants in the economy we can derive prosperity by being productive within that economy and adding value to the lives of those around us. "Wealth", happiness or prosperity can mean different things to different people so it is unwise to generalize and confuse the accumulation of money or even real goods and services as being the ultimate end and not just a means to an end.

From the perspective of the money supply, the key for government or society as a whole 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. But we must be careful not to confuse the "performance" for the "ticket". In this regard, money can be thought of as access to real wealth, but not the wealth itself. Creating more access to wealth will not necessarily provide society with superior living standards and could in fact reduce living standards if this tool of exchange is circulated in excess of productive capacity. Ideally, money creation will result in productive output and increased living standards though it's entirely possible that the money supply can expand and result in inflation as a result of malinvestment.

Understanding Inflation, Deflation, and Disinflation

To understand the relationship of money, output, and living standards, it helps to understand the impact of inflation. Inflation is a continuous rise in the price level. This means the prices for a broad basket of consumer goods continue to rise, usually as measured on a year-over-year basis. For instance, if inflation is 3 percent, a $1 gallon of gasoline will cost $1.03 in one year. Your

dollar purchases less gasoline than it did a year ago. It's important to note that inflation is not merely the rise of a few prices. For instance, if only gasoline prices are rising, the economy may not be suffering from inflation unless the price of the broad basket of goods is also rising. You could have rising gasoline prices and stagnant inflation. Therefore it's important to look at the broad basket to understand whether there is inflation.

Causes of Inflation

There are two general types of inflation. The first is called demand-pull inflation. The second is cost-push inflation. Demand-pull inflation is when demand outstrips supply, resulting in a rise in prices. Cost-push inflation is when the cost of business increases, resulting in firms' passing along those costs to their consumers. A common cause of inflation is an increase in the money supply. This is generally a benign occurrence in a credit-based monetary system because the demand for credit will usually rise over time in a healthy credit-based system. In other words, when the economy is expanding, firms and households will generally be borrowing to consume and invest. This will result in an increase in the broad money supply as banks create more loans, resulting in more deposits, leading to more money chasing (more or less) goods and services, higher wages, etc. The key to understanding whether this is a positive or negative development requires knowledge of how credit is used within the economy and whether it is increasing our living standards.

Less common but important price changes include deflation and disinflation. Deflation and disinflation are forms of decreasing inflation. Deflation is when the price level of goods and services decreases. This is a rate of inflation below 0 percent. Deflation generally occurs during the credit contraction period of the business cycle when debts are being paid down and economic activity slows as a result of the credit cycle. Disinflation is a similar concept but entails a decreasing rate of positive inflation. For instance, a period where inflation declines from 3 percent to 2 percent would be described as a disinflation. Like deflation this generally occurs in a weak economic environment in which the credit cycle is slowing. Deflation and disinflation are rare but important phenomena that occur within any credit-based fiat monetary system.

How Does the Innovative Process Work to Create Real Wealth?

Ultimately, the real benefit of our labor and output 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."[6]

The value of money is the amount of labor time required to obtain that money. Said differently, the value of our output in terms of goods and services produced, is what gives us access to a certain amount of money. To understand this concept a bit better it might help to understand how output, innovation and the value of money are all inter-linked.

Alexander Graham Bell created a more efficient way to communicate via 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 creating 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 (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 ways that a simple innovation such as the telephone helps us to improve productivity, efficiency and ultimately our standard of living.

This is important when considering the quantity of money within a monetary system relative to the aggregate supply of output and its impact on living standards. For instance, it's not uncommon to hear someone in the mainstream press state that the US dollar has fallen 95%+ since the Federal Reserve was created in 1913. This is technically true because inflation has increased substantially (about 3.2% per year), 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 higher quality of life than an American in 1913. This is because we have been afforded (through productivity) the luxury to use more time as we please. In other words, it takes far less time to purchase 1 hour of output today than it might have in 1913. Therefore, we are far wealthier despite the rising inflation.

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 find fulfillment (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 30 minutes of work. At 8 PM my dinner arrived, my laundry was done, I ate dinner on a clean plate and I had done 30 minutes 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 despite the fact that it costs substantially more to do all of these things than it would have in 1913. 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.

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 money system).[7] 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 money. It is not merely a monetary phenomenon, but primarily a political phenomenon. Throughout history, hyperinflations have tended to occur not because the money supply expands, but because of unusual exogenous factors that result in an increase in the money supply. The primary causes have been decline in production, corruption, regime changes, ceding of monetary sovereignty and loss of a war. Although hyperinflation is widely viewed as a monetary phenomenon, the explosion in the money supply is generally the result of one of the aforementioned factors. Therefore, in order to understand hyperinflation one must understand how and why an increase in the money supply relates to these exogenous factors that drive the increase in the money supply.

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

The Basic Purpose of a Monetary System

Understanding the money system, its structure and its purpose is ultimately about understanding how this system is a system of flows. The money system exists so we can exchange goods and services. Someone spends, another person earns this income, this person invests, the recipient spends and the cycle goes on. Without the cycle of spending the monetary system essentially dies. That is, if there are no flows then incomes decline, profits dry up, output goes unsold, workers get fired, etc.

The money system is very similar to the way the human body works. The human body is largely based on a system of flows. As long as the blood flows the body receives the nutrients necessary for survival and every day operation. But the flow is not necessarily enough on its own to sustain the system. The system must be properly nourished and taken care of. A human being who sits on his/her couch every day eating unhealthy food is likely to experience an interruption in this flow at some point as the system deteriorates in health over time. And when the flow stops (for whatever reason) the system dies.

In the money system, the "health" of the system is based largely on how this flow results in an improvement in living standards over time. Are the economic agents using this flow to create

goods and services that improve the overall standards of living for the system as a whole? Are they, as we described above, creating goods and services that optimize our time? The "sitting on the couch eating unhealthy food" equivalent for the economic system is a system in which the economic agents are unable to find productive uses for this flow. In this scenario living standards stagnate, the flow stagnates and the system deteriorates.

The monetary system is designed in such a manner so as to enhance the efficiency of this flow of funds through the system and encourage and reward those who contribute positively to it. The later sections of this paper will focus largely on the institutional design of the US system, but it is important to understand that the institutional structure of the system is merely the infrastructure within which the system operates.

Understanding Some Essential Financial Accounting in this System of Flows

When we begin to understand the monetary system, we have to recognize something that should be obvious to us all but is not always clearly laid out: the financial world represents claims on other financial assets as well as claims on nonfinancial assets. Remember, the theater ticket is not thing you actually want. The theater ticket simply represents a means to experiencing the end (the show). Financial assets are similar. Therefore the monetary world is the accounting representation of the claims that give us access to the financial world as well as the real world.

To understand this thinking it's helpful to remember a general rule of thumb from Professor Marc Lavoie: "Everything comes from somewhere and everything goes somewhere."[8] Once you begin to think in this manner, you can start to think of the financial world in more realistic terms. And this leads to two basic understandings:

1. One entity's spending is another entity's income.
2. All financial assets have a corresponding liability.

In the real world we have nonfinancial assets like houses and cars. And in the financial world we have financial assets like stocks, bonds, bank deposits, and the like that give us access to the nonfinancial assets. Remember, the financial world represents claims on the real world. If we look at the aggregate balance sheet of the world, we can arrive at some more basic understandings:

$$\textit{Net Worth} = \textit{Assets} - \textit{Liabilities}$$

But every financial asset has a corresponding financial liability so the aggregate net worth of the world in face value financial terms must be zero. Said differently:

$$\textit{Net Worth} = \textit{Nonfinancial Assets}$$

Of course this only considers financial assets as trading at face value and not at market value. In the actual financial world many of our financial assets change in value over time, so our financial net worth can be substantially higher than the face value of these instruments. A medium of exchange or things that serve as money instruments also exists within financial assets. These instruments are unique in that they serve as the medium of exchange at the point of sale. Not all financial assets meet such a demanding requirement. For instance, you might get paid in stock options, but you cannot use your stock options at Walmart to purchase goods. The stock options must be converted into something with a higher level of moneyness. Most financial assets are a

claim on things with a higher level of moneyness. In the modern monetary system money is primarily made up of bank deposits, coins, cash, and bank reserves.

Modern money is constructed primarily around financial assets (deposits, reserves, etc) as opposed to non-financial assets (such as gold). At its most basic level we know that there are always two sides to all financial transactions. Your spending is always some else's income. In order for the economic system to grow at a healthy and sustainable rate we require some growth in incomes, balance sheets, etc. This fuels corporate revenues, drives saving and incentivizes growth.

Saving: Unspent Income.

Investment: Spending, not consumed, for future production.

When we understand the modern monetary system it's crucial to differentiate between saving and investing. Unfortunately, the term "investment" has taken on an erroneous meaning in modern finance due to its association with stock market "investing".[9] This reference is not correct, however. Real investment is spending, not consumed for future production. For example, when a firm spends to construct a new widget factory they are investing. This firm might issue stock to finance that new investment, but this does not mean that the purchasers of those shares of stock are the real "investors". Instead, these owners of stock are savers who have decided to allocate their savings from deposits to corporate stock and the value of their corporate stock will fluctuate with the success/failure of the issuing entity. The real "investment" occurs when the firm spends this capital for the purpose of increasing future production.

When we consider investment in the flow of funds inside the economic machine it's crucial to understand that investment not only drives innovation and output, but also adds to saving. We often hear that saving finances investment, but this is not necessarily accurate. For instance, let's assume the economic agents have an aggregate income of $100 and decide to spend $100 in year one. Then, in year two, someone decides to save $10 (rather than spend all of their income). This means that someone else has $10 less in earned income as a result of this saving. This means that aggregate saving actually reduces aggregate income. If everyone saves our economy has no income, no revenue, no growth. Investment, however, does not require that an economic agent dissave in order to spend. Instead, an economic agent who invests $100 in a factory will spend $100 which becomes someone's earned income and the investment will lead to the creation of $100 in real assets (the factory). The investor does not dissave in order to spend. Therefore, it is better to say that investment adds to aggregate saving.

3. The Basic Institutional Structure of Fiat Monetary Systems

To understand the structure of the US monetary system it helps to understand why we have the system we have today. The USA was founded on the idea of a market based economy with deep skepticism towards centralized government powers. Thus, the design of the system in the USA has always remained consistent with keeping the power of money creation from being controlled entirely by the government. To the surprise of many in the mainstream and even in the field of economics, the government has far less control over the money supply than most presume. Money creation in the USA is dominated by the private banking system that competes for business (loan creation). This system designed around private money issuance has proven terribly

unstable at times and in need of a stabilizing force. What has evolved over the course of hundreds of years is a complex private/public hybrid system. That system involves a complex set of public institutional structures that play a facilitating role to the private banking system.

In addition to the banking system, the monetary system of the USA includes the Treasury and the Federal Reserve. Together these two domestic monetary authorities form a facilitating currency issuer. In modern fiat money systems the government, as the legitimate representation of the people, writes the rules of the game. The term "facilitating currency issuer" is a shorthand way to denote the ability of policymakers to determine macro policies and development strategies in the process of public purpose.

Understanding the institutional design of the monetary system is crucial to understanding the roles of monetary and fiscal policy within the money system. The US Treasury, for instance, is the arm of government through which fiscal policy is enacted. The Treasury enacts policy by managing the tax system and engaging in the sale of bonds in order to procure funds for spending. The Federal Reserve is an independent hybrid public/private entity that engages in monetary policy via the banking system primarily by impacting the levels of inside bank money that exist.

Why Does the Federal Reserve System Exist?

The US Federal Reserve System was established by a legislative act of Congress in 1913 and can best be thought of as a public/private hybrid entity. The Fed system created what is known as the "interbank market" where banks can settle payments within one centrally regulated market. All member Fed banks are required to maintain reserves on deposit for the purpose of meeting reserve requirements and helping to settle payments.

This system was created after a series of banking crises in the late 1800's and early 1900's exposed the inherent fragility of private banking. Prior to the Fed's creation the payment clearing system was managed by the private banks, however, because these entities were prone to crisis within their private competitive business making, the payment system would often shutdown at the times when it was most needed (in crisis). The Federal Reserve System maintained the private competitive nature of banking and money issuance while bringing stability to the payments system by providing a federally regulated interbank system of payment settlement that could leverage the powers of government and maintain stability in the banking system even during times of crisis.

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 who enacts policy by serving private banks. It is created by act of Congress and remits 95% of its profits to the US Treasury.[10] So, contrary to popular opinion, the Fed is not merely an agent of the banks seeking to enrich private bankers, but also a public purpose entity. 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). Confusion on the Fed's role in the economy stems from the fact that its primary role in stabilizing the money system involves stabilizing and often bailing out private banks (because the Fed enacts policy through the banking system). The Fed serves as the role of "lender of last resort" to banks who cannot find sufficient liquidity so it is often seen as an enabler of bad banking behavior. You can see how this might cause some to conclude the Fed's existence to be a conflict of interest of sorts. It is indeed serving two masters, one private and one public.

Prior to the Federal Reserve System the USA had what was essentially rogue banking dominated by these private entities. And when one of these entities experienced a crisis the system was often thrown into turmoil as Bank A would refuse to settle the payment of Bank B due to solvency concerns. The Federal Reserve System reduced this risk by creating one cohesive and internal settlement system. The interbank market is the banking market controlled and regulated by the Federal Reserve. Banks are required to maintain accounts with Federal Reserve banks where they maintain deposit accounts. You can think of this market as the market exclusively for bank payment settlement as it is not accessible to the non-bank public. This market creates one clean market where banks can always settle payments and where the Fed can intervene and provide aid and oversight where necessary. As the Federal Reserve has explained:

> *"By creating the Federal Reserve System, Congress intended to eliminate the severe financial crises that had periodically swept the nation, especially the sort of financial panic that occurred in 1907. During that episode, payments were disrupted throughout the country because many banks and clearinghouses refused to clear checks drawn on certain other banks, a practice that contributed to the failure of otherwise solvent banks. To address these problems, Congress gave the Federal Reserve System the authority to establish a nationwide check-clearing system."*[11]

The Fed system was created to support the private for-profit banking system, but helps stabilize the entire economy by ensuring that the payments system (or the "flow") remains healthy. So, in a sense, the Fed is a servant to the banking system as its design is consistent with a mandate to always support the private banking system.

Understanding How the US Government is a Self-Determined User of Bank Money

The US Treasury is a user of bank money and reserve money since it settles all its transactions in reserve money in its bank account at the Federal Reserve that are initially funded via the procurement of inside money. The Treasury is also the issuer of notes and coins to the banking system. The US Mint and Bureau of Engraving issue notes and coins to the banking system on demand as needed to meet the demands of users of bank customers who have accounts in inside money. For instance, if demand for cash notes is higher than usual the regional Fed banks will request more notes from the US Treasury to meet the demands of bank customers.

In terms of taxation and spending the US Treasury must settle all transactions in its account at the Federal Reserve (which settles in outside money or bank reserves). In this regard, the Fed is the banker to the US government. But the US Treasury can only settle funds in its reserve account by first procuring funds from the private sector (taxing) in the form of inside money (the US Treasury cannot legally run an overdraft in its Fed account). It is best to think of this process whereby the government can only spend from its account at the Fed if it has already obtained credits via inside money transactions involving taxes or bond sales. This procurement of funds allows the government to then *redistribute* pre-existing inside money back into the banking system completing the flow of funds that starts with the banking system's creation of inside money (in the form of loans which create deposits) and ending in a private bank account user being credit with the government's spending.

Said differently, when the US government taxes Paul, Paul pays with bank deposits or inside money. This inside money provides a credit to the Treasury's Treasury Tax & Loan account at a commercial bank. The Treasury will settle this payment by having the Fed credit its account in

what is called the Treasury General Account (the Treasury's account at the Fed). This flow of funds from Paul allows the Treasury to then spend a bank deposit into Peter's account. From start to finish, this process results in inside money in (taxation) and inside money out (government spending).

It's important to note that the US Congress has *chosen* to make the Treasury a user of reserves and bank money in the modern era, however, that was not always the case in US history and could very well change. This is what makes the Treasury a contingent currency issuer. Remember, the Federal Reserve is the banker to the US government so while the current arrangement requires the Treasury to be a user of reserves and bank money, it could in theory simply harness the central bank to always provide a funding source. It is also theoretically possible that the US government could nationalize the entire banking system which would effectively eliminate the distinction between inside money and outside money since ALL money would automatically become government issued outside money.

In practice the US Treasury finances all of its spending by first collecting fiscal receipts. It does so by taxation or via the sale of government bonds. In doing so, the government is always a redistributor of existing inside money. The fact that the Treasury is a user of bank money 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. Although the US government chooses to be a user of private bank money this does not mean it can "run out of money". Like any bank, the Federal Reserve is an issuer of money and could always be counted upon to fund the spending of the US government, even in a worst case scenario.

It's also crucial to understand how the US government harnesses its banking system to help provide certain funding sources given the legal constraints imposed on the government. There are a number of legal obligations on the "primary dealers" (i.e. a select group of the largest private banks who provide various services for the US government) not least of which is to offer bids at Treasury bond auctions.[12] 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 with *ex nihilo* (from nothing) 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.

With this understanding it's important to note that the government does not operate without constraint. The true constraint for a currency issuer is always inflation, foreign exchange risk 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 later.

The Federal Reserve and How Monetary Policy Works

Monetary policy involves the use of central bank policy to influence the money supply via interest rates and other channels. The central bank enacts monetary policy primarily through influencing the amount of bank reserves in the banking system. The US Fed finances all of its activities by net/new money creation, that is, *ex nihilo* money creation, "out of thin air". But it is crucial to understand that the Fed primarily creates money in the interbank market. That is, the Fed can determine the amount of money within the interbank market by buying and selling securities for its own account, but does not usually inject or "print money" into the non-bank private sector as is commonly believed.

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 before all else.

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 an important 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 alters 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. As the monopoly supplier of reserves there is nothing stopping the Fed from pegging the long end of the US government bond yield just as it pegs the overnight Fed Funds Rate. 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 sense the term "don't fight the Fed" is most appropriate since the Federal Reserve can always set the price of the instruments it buys. This of course does not apply to the entire spectrum of financial system assets since the Fed is only permitted to purchase government guaranteed assets.

Importantly, the Central Bank does not control all interest rates. The Federal Funds Rate, the overnight rate, is merely one rate out of hundreds in the financial system. This can serve as an important benchmark rate, but it should not be thought of as some form of Archimedean Lever over the economy. When the Fed changes overnight interest rates this will influence the spread at which banks make loans, but it will not necessarily increase the demand for loans. Modern economists tend to assume that interest rate changes will necessarily lead to higher inflation and higher output, but this is only true if the interest rate changes lead to greater demand for loans. We now know how blunt this instrument can be following the Great Financial Crisis when many global Central Banks cut rates to 0% and growth remained sluggish.

Over the longer-term, and when the central bank wants to increase the size of its balance sheet and the volume of reserves, it typically engages in open market purchases of T-bonds. In the recent financial crisis, especially the period following September, 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. Banks will always try to reduce their holdings of excess reserves by lending them (banks only lend reserves to one another and not to the public) out to one another. This puts downward pressure on overnight interest rates and helps the Fed control what that rate is because the Fed determines the aggregate quantity of reserves in the banking system. Today, the Fed sets a floor on the overnight interest rate by eliminating the desire to lend reserves via the payment of interest on excess reserves.

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 reserves. 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".[13] 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. In other words, large amounts of excess reserves will not put

downward pressure on the overnight rate because the Fed has established a floor via the rate of interest paid on 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 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 excess reserves put downward pressure on the rate and the Fed is setting a floor under the overnight lending rate by paying IOER

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. But the Fed only sets the overnight rate and not the entire curve. So the Fed loosely influences the profit spread that banks earn on their lending, but the Fed does not necessarily control the demand for loans which is what allows banks to maximize that spread. In this regard, monetary policy and interest rate setting is a rather blunt and indirect tool. In general, interest rate hikes can be viewed as being much more powerful than interest rate cuts because the Federal Reserve can always choke off the supply of lending by making it unprofitable for banks to lend (by raising rates very high). On the other hand, cutting interest rates is more dependent on the demand for loans and is therefore not necessarily a direct form of stimulus.

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; (3) maintaining a healthy payments system; (4) the asset price channel and impacting financial markets directly or indirectly; (5) the expectations channel or "open mouth policy"; (6) the credit channel or influencing the supply/demand for credit; and, (7) the exchange rate channel or influencing the foreign exchange rate.

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 the purchase of T-Bonds in fiscal policy and the purchase of T-Bonds on secondary markets such as the Fed's quantitative easing policy. 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 private sector even though these operations do create new 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). If the seller of a T-Bond is a non-bank then the amount of inside money can change, but the net

financial assets will remain the same. Whether this results in inflation is contingent upon many other variable factors, but we should not necessarily assume that such a swap in financial assets is inflationary even if it does increase the amount of inside money or outside 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. Policies such as QE are better thought of as "asset swapping" since they replace one type of privately held financial asset (bonds) with another (deposits/reserves).[14]

Treasury's Symbiotic Relationship with the Fed & Fiscal Policy

Fiscal policy involves the use of government taxation and bond issuance to spend money in the means of enacting public purpose. 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. It is best to think of all fiscal policy as a redistribution of inside money. Because banks issue almost all of the money in the money system, the government is a self-determined user of bank money (because it has outsourced the right to create money to a private market based system). Government taxation is a simple redistribution (taking from Paul to pay Peter) whereas bond issuance results in a government deficit (spending more than it takes in via taxes). Deficit spending is also a redistribution of private bank money, but involves the issuance of government bonds as well as the redistribution of bank money. That is, Paul buys a bond from the government and the government uses Paul's inside money to pay Peter. Unlike taxation, the private sector (Paul in this case) obtains a net financial asset because a bond is issued into the private sector without a corresponding private sector liability (such as when a corporation makes a loan which results in BOTH a private sector asset and liability).

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 user of bank money, must always obtain deposits before it can spend. But we should be careful about confusing the Treasury's reality as a bank money user with that of a household or business. Households and businesses are always constrained in their ability to obtain funds so they have a real solvency constraint. The US Treasury, however, is always able to procure funding by harnessing its banking system or even its central bank in a worst case scenario. Therefore, the commonly held beliefs about the USA going bankrupt are largely misunderstood.

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 as a whole can also in some respects be viewed as a money 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.

For emphasis, it's important to understand how deficit spending occurs in this regard. Remember, government bond sales do not create the final means of payment or result in "money printing". Bond sales procure funds in the form of existing inside money and redistribute it to other economic agents. For simplicity, let's take a simple example where Peter buys a bond via

Treasury Direct. Peter will send the government his inside money (which was created by a private sector loan) and the government will issue Peter a government bond in exchange. The government will then redistribute Peter's inside money to Paul who will then deposit it at a private bank. As you can see, the government simply redistributes money when it spends. Taxation is obviously even simpler as taxation is a pure redistribution of money without the bond sale. As previously mentioned, the Treasury technically settles funds in its reserve account at the Fed, but this should not confuse us on the actual flow of funds that occurs within the system.

The key distinction here is that deficit spending results in the creation of a net financial asset. That is, unlike private loan issuance, which creates both a private sector liability AND asset, government deficit spending results in no corresponding private sector liability and only a private sector asset (the government bond). In this sense, the government can be thought of as "printing" a financial asset (the bond).

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 funding 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 an issuer of currency can never be said to be "running out of money".

The constraint for a currency issuer in a fiat system like the USA is never solvency, but rather inflation, foreign exchange crisis or real constraints (such as real resources or the output of the economy). One role of the government is to help influence the money supply and supply of financial assets so that it does not impose hardship on the private sector. The goal is always to maximize living standards of the monetary system's 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 people can utilize government and its many tools to influence the composition and quantity of the currency and financial assets. 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.

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 (or its central bank) 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."[15]

The Government's True Constraint in Context

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 government, like any other entity, must find willing holders of its liabilities or it risks creating high inflation or currency crisis. The fact that it can tax the productive output of the private sector and borrow infinitely from the Central Bank does not mean that it cannot run out of viable funding sources.

Money creation is truly endogenous. We can all create money from nothing. If I go to a bank for a loan I am essentially creating a financial liability that the bank may or may not want to hold. If the bank considers me to be creditworthy they will accept my liabilities. When the loan is created the bank is holding an asset (the loan) and a liability (the deposit). Likewise, I am holding an asset (the deposit) and a liability (the loan). We tend to think of the bank as "creating" the money, but you could also think of the borrower as creating the loan. For all practical purposes, we are both willing to hold each other's liabilities. This is the essence of "money" creation. When someone is willing to hold your liabilities you have "credit". But you must have credit first. Credit does not merely come from legal authority or the power of the printing press. Creditworthiness is primarily a function of output in a fiat monetary system.

The unique thing about governments is that they have their own banks and they have massive revenue sources. So they tend to have very high creditworthiness since they can tap into the output of the economy. Also, when their liabilities are denominated in a currency they can create it's unlikely that they will encounter an environment where someone will deem them legally bankrupt. But this does not mean that their liabilities are always creditworthy or that everyone always "believes" in holding their liabilities. That is, the legal definition of being solvent does not necessarily mean their liabilities are considered valuable.

Very high inflation occurs when the users of a currency reject it and essentially trade it for other currencies or assets. We should keep this in the proper context though. Some level of inflation is perfectly normal in a credit based monetary system because we should expect that borrowing will expand as the economy grows and improves. So inflation is not always another form of default. It is generally a healthy part of economic expansion. In addition, default might not always manifest in the form of rising bond yields or "running out of money". This is because the sovereign currency issuer can always maintain the cost of its debt in nominal terms simply by reducing interest rates or reducing the maturity of its debts. It need not be "forced" into default by bond vigilantes. But this doesn't mean that the market will always want to hold their liabilities. And this will usually manifest itself in the form of a foreign exchange crisis or high inflation.

For example, if we look at Argentina since the year 2000 we can see that the Argentine Peso has actually lost an average of 18% in value relative to the US Dollar. But the rate of inflation was 11% over this period. This means that "the market" deemed the Argentine Peso to be substantially overvalued relative to potential alternatives. So, on a relative basis, the Argentinian citizens are substantially worse off in both nominal and real terms than they would be if they were using a different currency. The government might not default in legal terms, but the markets have decided that they do not want to hold Argentinian currency at its current values which results in a devaluation that substantially reduces the standard of living for its citizens on a relative basis. Interestingly, this sort of environment can actually force a sovereign currency issuer to do things that would render it to be no longer sovereign (such as pegging the currency). The negative impact of such an outcome should not be downplayed or misunderstood.

The concept of "default" is murky considering its legal ramifications. Given a sovereign currency issuer's unusual status in the economy, it's better to think of this in terms of the willingness of the financial markets to hold your liabilities relative to potential alternatives. And if the financial markets don't want to hold your liabilities then you've lost credibility even if you're not legally bankrupt. The ability to create money is sometimes implied as a sort of cure all for our economic woes that can help maintain full employment and prosperity. But reality is much more complex than simply being a sovereign currency issuer. Of course, we should be careful about implying

that “money printing” and inflation is always another form of default. These are both extreme views and the truth is more complex than these generalizations sometimes imply.

Similarly, 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 production. 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 financial assets and currency or due to the fact that the banking system issues bank deposits, but because the USA is an extremely productive and innovative nation. In other words, the USA is extremely productive with the money that is issued.

When we discuss the money supply, it is important that the government maintain a check on private credit. As we have explained, inside money is the dominant form of money. While government policy can influence the money supply the supply of money is primarily determined by private banks. The government should be a good steward over this extension of credit and attempt to enact policy that supports credit extension, but does not allow it to run wild thereby creating systemic instability or private sector malinvestment.

4. The Lead Role of the Private Sector & “Inside Money”

The economic system is similar to 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 by making it less enticing for banks to issue loans (create money). 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

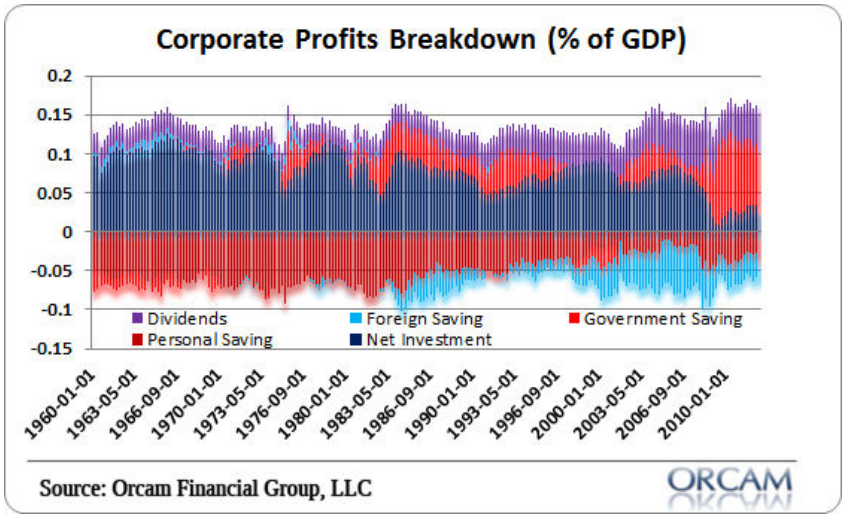
policymakers and instead determined by the endogenous performance of the economy. This is known as automatic stabilizers. Things like unemployment benefits and other "automatic" forms of spending can rise without any new government action during a downturn.

Increases in government spending increase the flow of funds in the economy and help to improve private balance sheets. This occurs through two primary functions. The first being the fact that the government can always procure funds and increase the flow of spending in the economy. That is, when the private sector stops spending and investing (for whatever reason) the government can always turn on the "flow" and increase incomes, revenues, etc. The second impact occurs in the form of increases in net financial assets which can help improve the stability of private balance sheets. Remember, when the government deficit spends it sells a bond to Peter and redistributes Peter's bank deposits to Paul. The bond sale to Peter results in a net financial asset for the private sector because there is no private sector liability attached to it. Of course, if government spending is poorly allocated or malinvested there can be negative long-term consequences through various channels. This should not be overlooked or underemphasized.

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.[16] 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. This can be better understood via Kalecki's profits equation:

Profits = Investment – Household Savings – Government Savings – Foreign Savings + Dividends

This equation can be seen in visual form below. This shows the breakdown of corporate profits as a percentage of GDP since 1960. As you can see, the primary driver of corporate profits is almost always net investment. So the private sector is the primary driver of profit growth most of the time. The crisis of 2008 was unusual in that the de-leveraging led to a sharp decline in net investment. The bright red bars, or the government's spending, led to a substantially larger role in driving corporate profits during this period as a result of this private investment collapse.



(Figure 3 – Corporate Profits as % of GDP)

Continuing on with the metaphor, government regulation can be a nuisance (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). In a similar fashion to the role of outside money as a facilitating feature of the money system, government regulation can facilitate stable growth when not overdone.

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 often 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 Minsky famously noted, "stability breeds instability" as economic agents become increasingly comfortable and complacent during the boom phase of the business cycle which can lead 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.

The Basics of Banking & the Myth of the Multiplier

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 and plays a mostly facilitating role.

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 (aside from the regulatory framework). As we will explain below, banks make loans independent of their reserve position with the government rendering the traditional money multiplier deeply flawed.

The monetary system in the USA is designed specifically around a competitive private banking system. The banking system 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 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.

It's important to understand that banks are unconstrained by the government (outside of the regulatory framework) in terms of how they create money. 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.[17] Reserves are used for only two purposes – to settle payments in the interbank 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 research 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."[18]

This point has been reinforced by Standard and Poors as well as the Bank of England in the last few years. Indeed, the mainstream does appear to be catching on to the errors of the Money Multiplier concept.[19, 20]

This is very important to understand because many have assumed that various Fed policies in recent years (such as Quantitative Easing) 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 (assuming the banking system is healthy and banks are engaging in the business they are designed to transact). 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 (this is part of monetary policy which only loosely impacts the direct issuance of inside money). 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).

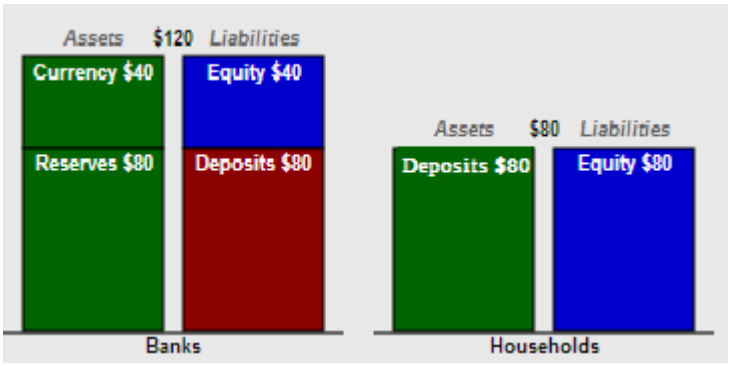
Understanding the business of banking is rather simple. It's best to think of banks as running a payments system that helps us all to transact within the economy. In addition to helping manage this payments system they issue money in the form of loans. Banks earn a profit in the means of transacting business when their assets are less expensive than their liabilities. In other words,

banks need to source their ability to run this payments system smoothly, but will seek to do so in a manner that doesn't reduce their profitability.

Banks don't use their deposits or reserves to create loans, however. Banks make loans and find reserves after the fact if needed. But since banking is a spread business (having assets that are less expensive than liabilities) the banks will always seek the cheapest source of funds for managing their payment system. That just so happens to generally be bank deposits. This gives the appearance that banks "fund" their loan book by obtaining deposits, but this is not necessarily the case. It is better to think of banking as a spread business where the bank simply acquires the cheapest liabilities to sustain its payment system and maximize profits.

To illustrate this point let's briefly review the change in balance sheet composition between banks and households before and after a loan is made. Since banks are not constrained by their reserves the banks do not need to have X amount of reserves on hand to create new loans. But banks must have ample capital in order to be able to operate and meet regulatory requirements. Reserves make up one component of the bank balance sheet so it's better to think of banks as being capital constrained and not reserve constrained.

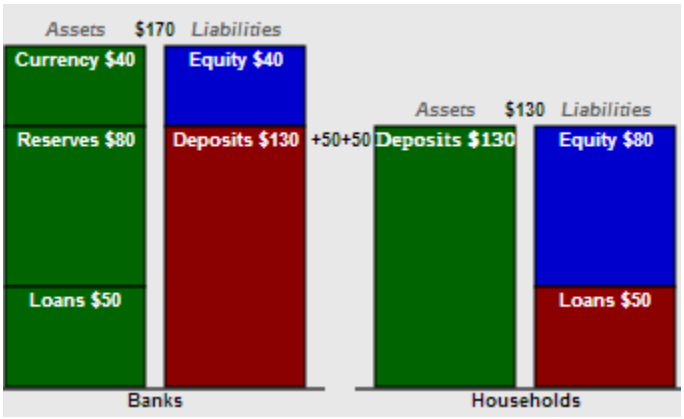
Let's start with a simple money system as displayed below. In this example banks begin with $120 in assets and liabilities comprised of currency, reserves, equity and deposits. Of this, households hold $80 in deposits which are assets for the households and liabilities for the banking system. That is, the bank owes you your deposit on demand.



(Figure 4 – Before Loan is Made)

Our banking system has reserves already, but this is not necessary for the bank to issue a loan. It must simply remain solvent within its regulatory requirements. If our households want to take out a new loan to purchase a new home for $50 the bank simply credits the household's account as seen in Figure 5. When the new loan is made household deposits increase to $130. Household loans increase by $50. Bank assets increase by $50 (the loan) and bank liabilities increase by $50 (the deposit).

If the bank needs reserves to help settle payments or meet reserve requirements it can always borrow from another bank in the interbank market or if it must, it can borrow from the Federal Reserve Discount Window.



(Figure 5 – After Loan is Made)

The key understanding here is that banks are not merely intermediaries in the financial system. They are the dominant issuer of money and do so by simply expanding their balance sheet. In this sense banks can be described as the primary "money printers".

Understanding Shadow Banking

Since the mid-1980s banking has evolved from a standard 3–6–3 loan model (that's, borrow at 3 percent, lend at 6 percent, and hit the golf course by 3 p.m.) to a much more sophisticated and opaque business. To understand the modern financial system it's necessary to go beyond traditional banking. In recent years the concept of shadow banking has become more prominent as banking has evolved. Shadow banks are generally not like traditional banks. They are generally financial intermediaries or nonbank financial institutions engaged in the financial markets by helping to create liquidity in a number of different ways. In its most basic form shadow banking is the use of money market funding for capital market lending. These institutions operate in the shadows because they are not regulated like banks are. According to the International Monetary Fund a shadow bank operates as a financial intermediary in a number of different ways, including:

> *Maturity transformation*: obtaining short-term funds to invest in longer-term assets.
>
> *Liquidity transformation*: a concept similar to maturity transformation that entails using cash-like liabilities to buy harder-to-sell assets such as loans.
>
> *Leverage*: using such techniques as borrowing money to buy fixed assets to magnify the potential gains (or losses) from an investment.
>
> *Credit risk transfer*: taking the risk of a borrower's default and transferring it from the originator of the loan to another party.

Shadow banks look like banks and operate in a similar fashion to banks but are not issuers of insured bank deposits and do not have access to the central bank's emergency backstop facilities. In essence shadow banks often transform less safe assets into safer assets by repackaging many different instruments into one securitized product, thereby creating an element of reduced risk through diversification and reselling the product. This allows a shadow bank to offer credit by issuing liquid short-term liabilities against less safe longer-term assets. Shadow banking is an

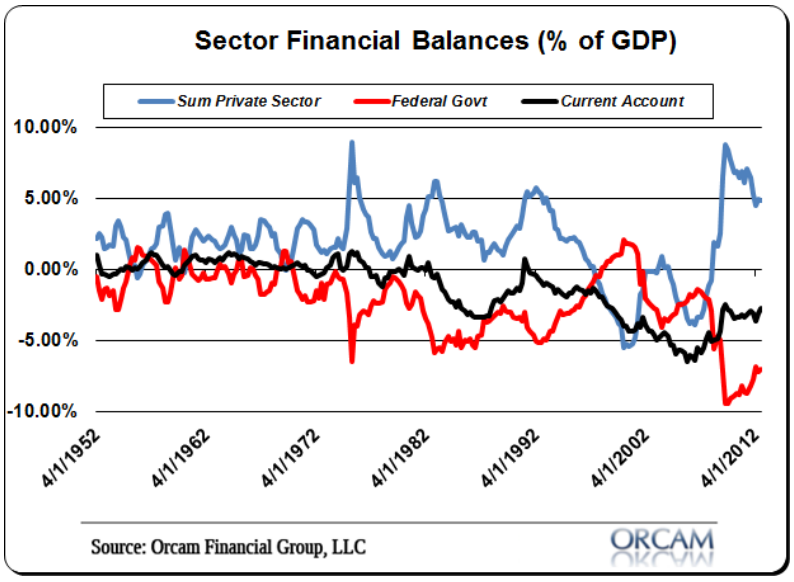
opaque and evolving subsystem in the banking system that will continue to play an important role in the global economy.

5. Stocks and Flows in the International Monetary System

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 budget 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 6 – Three Sector Financial 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 6 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).

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 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 interest bearing private sector financial asset. This does not mean the government can necessarily make the private sector better off by providing us with government bonds, but as 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 (as seen in our corporate profits chart earlier).

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 financial wealth creation is not just achieved through government deficit spending, but largely occurs independent of government. The SFB equation

using a closed economy shows that the size of the government's deficit is exactly equal to saving net of investment:

(S-I) = (G-T)

As mentioned previously, all financial assets net to zero at face value so one might conclude from this equation that the private sector's ability to "net save" is derived from the size of the government's deficit. But this ignores the reality that it is investment that drives economic growth. It is investment that leads to most of the goods and services in the economy that give value to our financial system. So it makes no sense to view the world through the lens of (S-I) where investment is netted out. Instead, we should view the world through **S = I + (S-I)** because this shows that saving is primarily driven by investment. After all, as we described earlier, the world's net worth is comprised of nonfinancial assets (which have value due largely to investment) as well as the market value of financial assets (the value of stocks, etc). These components of private sector saving are driven primarily by private sector investment. The domestic deficit, on the other hand, comprises a comparatively small portion of private sector net worth.

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 government deficit-spending can become more important. While it is important to emphasize the fact that the private sector plays the lead role in growing the economy the government's facilitating role in the monetary system cannot be overlooked.

Fiat Money in the Global Financial System

When we talk about fiat money within the global macroeconomic system it is important to note that the system is indeed a globally interconnected system. That Europe, the UK, China, or the United States each has its own currency does not mean these systems are entirely independent. In today's global world we have freely floating foreign exchange, which means that the unit of account in one country floats freely in value relative to the unit of account in another country so while US$1 is always worth one dollar in nominal terms within the borders of the United States, US$1 does not always equal €1 in Europe.

In order to begin thinking in a truly global macroeconomic sense you have to again understand that the international dimension of trade is not all that different from the domestic dimension of trade. In other words one person's income is still someone else's spending. The difference in international trade is the need to transact in the currency of the domestic business, and that generally requires a currency conversion. A country that sells goods and services abroad is said to have exports, while a country that purchases goods and services from abroad is said to have imports. The difference between the amount of exports and imports determines whether a country is running a foreign trade surplus or deficit. One thing you'll notice here again is that one country's surplus is another country's deficit. Everything goes from somewhere and comes from somewhere.

When analyzing the flow of funds, goods, and services between countries, we look at what's called the balance of payments. The balance of payments is further defined by three specific accounts—the current account, the financial account, and the capital account.

The most important of these is the current account, which shows the flows of goods, services, and income between residents and nonresidents. When considering the crossborder flow of funds, it's important to understand the way in which the exchange rates float against one another. In nominal terms the economies in different countries will generally be dynamic in different ways, meaning that what currency buys in one country will not necessarily be equivalent in another country. For instance, a loaf of bread might cost $1 in the United States and €2 in Europe for any number of different reasons (labor markets, resource access, inflation, interest rates, output, etc.). This means the exchange rate is €2 = $1 so goods are generally less expensive in the United States than they are in Europe. This exchange rate floats like the price of any financial asset in any market, based on the supply and demand for the various currencies. In general, less expensive goods in the United States should lead to improved exports because Europeans will import an increasing amount of less expensive goods from the United States.

A lower foreign exchange rate can improve competitiveness for the domestic economy by making it more attractive to foreign investment. This is often desirable for a nation that cannot compete at the same level with a more developed country, which might lead the domestic government of the less developed country to sometimes engage in policy that improves its domestic economy by making it more attractive to foreign business.

While the most basic elements of foreign trade are common across borders, not all foreign countries have a perfectly similar monetary design or similarly diverse economies. Indeed they are often quite different and limited in extremely different ways.

When I use the term autonomous contingent currency issuer in this paper, I am referring to the degree to which a country has the ability to remain an autonomous currency issuer. Several elements influence the degree to which a nation is an autonomous currency issuer. This includes reserve currency status, floating exchange rate, foreign debts, and the structure of the domestic monetary system. Figure 7 provides a brief overview of the degree to which a nation is an autonomous contingent currency issuer.

	Reserve Currency	Free Floating FX?	Foreign Debt?	Symbiotic Central Bank & Treasury ?
United States	Yes	Yes	No	Yes
European Monetary Union	Yes	Yes	No	Partial
Japan, UK, & Switzerland	Partial	Yes	No	Yes
Emerging Market Economies	No	Partial	Yes	Yes

(Figure 7 – Degrees of Autonomous Currency Issuers

Ideally a nation will desire some degree of reserve currency status, floating exchange rates, no foreign debt, and a symbiotic central bank and treasury design. As I discussed earlier, the European Monetary Union (EMU) is an interesting monetary system in that it is a reserve currency with no foreign debt and floating foreign exchange rate, but the monetary design is incomplete in that the central bank is essentially a foreign entity and there is no central treasury. This renders the nations within the EMU users of the euro rather than issuers of the euro. The UK and Switzerland, by remaining outside the euro, have maintained their status as autonomous currency issuers. It's important to note that not all countries can remain autonomous for various reasons. There might not be high demand for their currency on foreign exchange markets due to output weakness, they might not have access to resources, they might not have a developed monetary system, or they might prefer to peg their currency to a stronger trade partner in order to remain more competitive. A certain level of exorbitant privilege is involved in having a diverse economy, access to foreign exchange markets, no foreign debts, a developed domestic monetary system, and resource accessibility.

As the global macroeconomic system grows and becomes increasingly intertwined, it will be more and more important to understand the elements of foreign trade. The relationships between different economies will play an enormous role in the growth and prosperity of the global economy in the decades ahead, so when we view the monetary system as a whole, we should always think of it not only in domestic terms but also in a global sense.

Conclusion

Monetary Realism is an operational approach to finance and economics that seeks to describe the operational realities of a modern fiat currency system. It is my hope that a greater understanding of our monetary system through operational realities will result in a less dogmatic, more pragmatic and more rational perspective of our monetary system so as to help us all in achieving the prosperity we desire.

Glossary

Acceptance 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. Acceptance value is only one facet of currency demand. See quantity value for more.

Currency: Currency in this paper refers to a specific form of money being "outside money" or money created outside the private sector by the government in the form of bank reserves, cash or coins.

Currency Issuer: A currency issuing nation that is politically and monetarily unified in a manner that affords it the ability to always procure funds. This is achieved in differing ways depending on the specific nation, but the general point is that the nation is not constrained by outside forces (such as foreign currency needs, foreign debt, etc) that threaten its ability to procure or produce the currency at will. These nations are generally developed economies. Not all nations have the ability to remain or sustain their status as an autonomous currency issuer and status as an autonomous currency issuer does not render the country immune to financial hardship.

Equity: Equity represents an ownership interest. When discussing equity we are generally referring to stocks.

Fiat Money: Fiat money is a widely accepted form of money organized under the rules and regulations of a government and sustained through the productive base of the private sector. Fiat money, in and of itself has no value, but affords its users a convenient and simple manner for exchange. When quantifying the value of fiat money it is best to study the living standards of the society as a whole rather than the more misleading and more commonly used rise in inflation over time. A rising inflation can be perfectly consistent with both the existence of fiat money and rising living standards as evidenced by the experience of the USA in the 1900s.

Fiscal Policy: Fiscal policy is government policy geared at changing the size of federal spending and taxation.

FFR: This is a commonly used abbreviation for Federal Funds Rate, the overnight lending rate in the interbank Fed Funds Market.

Hyperinflation: Hyperinflation is a very high level of inflation caused by unusual exogenous shocks to an economy. Contrary to popular opinion, hyperinflation is not caused by money printing, but generally occurs after an exogenous shock to an economy which results in money printing or a collapse in the tax system. The primary historical causes of hyperinflation are: lack of monetary sovereignty, war, regime change, production collapse and government corruption.

Inflation: Inflation is a consistent rise in the general level of prices of goods and services in an economy. A low inflation is usually consistent with healthy economic growth in a fiat monetary system.

Medium of exchange: A widely accepted intermediary instrument that facilitates the sale, purchase or trade of goods/services.

MR: A common abbreviation for Monetary Realism. See below for more.

Monetary Policy: Monetary policy is policy conducted by the central bank of a country in an attempt to influence the money supply. Specifically, monetary policy is conducted by interacting in various ways with the private banking system in an attempt to influence the cost and use of inside money.

Money: Money is a social tool with which we primarily exchange goods and services. Technically, anything can serve as "money", but in modern societies money is most commonly organized under the rules and regulations of government and can be considered to have the highest level of "moneyness" when it is widely accepted as a means of final payment.

Monetary Realism: Monetary Realism is a set of understandings that seek to describe the operational realities of the monetary system through understanding the specific institutional design and relationships that exist in a particular monetary system.

Moneyness: Refers to how pure a particular type of financial asset or real asset is in meeting the definition of "money" as a final means of payment. MR views money as existing on a scale of moneyness that measures how pure particular instruments are in meeting the needs of money as a final means of payment.

Outside Money: Outside money is government created money. This includes notes, coins and bank reserves. It is called outside money because it is created outside the private sector. Outside money exists to facilitate the use of inside money.

Primary Dealers: Primary Dealers are banks or broker-dealers who make markets for US government securities and help the Federal Reserve and Treasury enact policy.

Private Purpose: Actions taken by individuals or groups within the private sector with the express intent of benefitting a specific individual or group.

Private Sector: The part of the economy run by private citizens for profit or non-profit not for the benefit of the state or the populace as a whole.

Public Purpose: Government policy or action intended to benefit the majority of the populace or the populace as a whole.

Public Sector: The government sector or the part of the state that deals in enacting public purpose on behalf of the citizenry.

Quantity Value: 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.

Quantitative Easing: Quantitative easing is a form of monetary policy, implemented via open market operations, in which the central bank tries to influence the cost and use of inside money by altering bank reserves. Specifically, this is achieved by swapping reserves for treasury bonds (in most cases). It results in no change in private sector net financial assets and is often confused for "money printing" or "debt monetization". It's really just an unusual form of standard Fed policy or open market operations and its effectiveness is highly debatable.

Reserves: Bank reserves are a form of outside money used in the means of settling payments and meeting reserve requirements. The existence of reserves (and the Federal Reserve System) is to help streamline the banking system into one cohesive unit while maintaining the private competitive banking system.

S = I + (S-I): This is an important equation used by Monetary Realism to help emphasize the fact that an economy is based on private production. The equation emphasizes the role of private Investment in the economy and the idea that living standards are best maximized when a nation is highly productive and creating goods and services that increase overall living standards.

Sectoral Balances Approach: The sectoral balances approach was created by Wynne Godley to show the flows through an economy. It is a useful way of understanding the way that GDP is generated by the various economic agents. $(I-S) + (G-T) + (X-M) = \Delta NGDP$.

Social Construct: Social construct is another term for "money". See above.

Unit of account: A standard monetary unit for measurement of value of goods, services and financial assets. In the USA the unit of account is the US Dollar.

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