Understanding The Modern Monetary System

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ABSTRACT

This paper provides a very broad understanding of the workings of a modern fiat monetary system that is applicable to countries with sovereignty and monopoly supply of currency in a floating exchange rate system.

Introduction

In this paper I will explain why Functional Finance and Modern Monetary Theory best describe most modern fiat monetary systems. The systems that are applicable to this discussion include nations that are monetarily autonomous, are monopoly suppliers of their own currency and exist within a freely floating exchange rate system. For this discussion, I will focus primarily on the USA although this subject can be applied to many other nations throughout the world.

Overview

Modern Monetary Theory

Modern Monetary Theory (MMT) is based on the following principles:

1.The government is the monopoly supplier of currency.

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

3.The currency unit created by the state via deficit spending can only be extinguished by payment of taxes. Therefore, a modern monetary system can best be thought of as a system of debits and credits where government deficit spending credits the private sector and payment of taxes debits the private sector.

4. The government of the currency issuer must remain monetarily autonomous.

Functional Finance

Functional Finance is an economic theory based on the following principles:

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

2. Governments should be actively involved in regulating and helping build the infrastructure within which the private sector can generate economic growth. The economy is a complex dynamical system with irrational participants. It cannot be expected to regulate itself or behave rationally at all times. Therefore, some level of government intervention and involvement is not only beneficial, but necessary. Ultimately, it must be the private sector that is the driver of economic growth. While government can aid in this process it cannot be expected to be the primary driver of innovation, productivity and growth.

3. Money is always created by the state and must therefore be regulated by the state; however, ultimately the private sector must accept this legal tender as the currency unit. Therefore, the private and public sectors should best be thought of as being in partnership with one another and not opposing forces. Government by the people and for the people is not the antagonist in this story, but rather an entity that should be best utilized to maximize private sector prosperity.

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

What is MMT?

MMT is a description of the monetary system within a nation operating a fiat currency that involves an autonomous monetary system, monopoly supply of currency and floating exchange rates. MMT describes how a government creates, destroys and utilizes its monetary unit and also how the private sector utilizes the state's monetary unit for its own benefit.

Brief Historical Background

MMT is based on the state theory of money that says that modern fiat money is always a "creature of the state". The theory was first introduced by GF Knapp as "Chartalism". This is derived from the Latin word "charta" which means token. This is used to describe the reality of modern fiat currencies as nothing more than a state issued token with no linkage to commodity based money. We do not reside in a system in which currencies have any linkage to metals therefore, such thinking is not applicable to a modern fiat monetary system, although this thinking has persisted and still clouds much economic thinking to this day.

Significant contributions to Chartalism were made by Alfred Mitchell-Innes and Abba Lerner. The gold standard, however, rendered much of their work incomplete as governments were still constrained in their ability to issue currency. This changed in 1971 when Nixon closed the gold window. Since then, Chartalism has undergone a significant revival although much of the economic thinking based on the gold standard continues to this day. The work of Hyman Minsky, Wynne Godley, Warren Mosler[1] and Randall Wray have been particularly central to this revival that has come to be known as "Neo-Chartalism" or Modern Monetary Theory (MMT).

Is It Just A "Theory"?

The name MMT is a bit of a misnomer as it is really just a way of *describing* how modern monetary systems work and is not necessarily a theory. The theory is all in its application. Some believe government should be highly involved in managing its currency while others believe it should be involved to a lesser extent. It's important to note that the core component of MMT is merely descriptive. The theoretical portion is more prescriptive.

MMT's Political Agnosticism

One important element of MMT is its political agnosticism. There are components of MMT that tend to be left leaning, however, there are also components of MMT that are right leaning. For instance, MMT is agreeable to many right leaning economists because it favors lower taxes, reducing (or ending) the Fed's role in the monetary system and focusing on efficiency of government (reducing wasteful spending and malinvestment). MMT is also agreeable to left leaning economists because it favors government deficits, tighter bank regulations and a focus on full employment. Importantly, it is neither an offshoot of Keynesianism, Monetarism nor Austrian economics, though there are components of each involved to some extent. Rather, MMT is an offshoot of many different theoretical frameworks with GF Knapp, Abba Lerner, Hyman Minsky and Wynne Godley playing central roles in helping to craft it.

MMT As A Heterodox Economic Theory

Learning MMT can take some significant time as it turns most of modern economics on its head, but understanding MMT is vital in comprehending how the modern monetary system works and is particularly important at this juncture as many of its most controversial elements have been proven correct during the economic crisis of 2008. MMTers have experienced remarkable success predicting much of the economic outcomes over the last 20 years. This is not surprising as MMTers tend to view other economists as seeing the world through a largely defunct prism - a prism based on a gold standard world that became inapplicable in 1971, but whose thinking continues to poison the economic thinking to this day.

How Vertical And Horizontal Money Functions

MMT is based on a horizontal and vertical view of money. This is important in differentiating between the public and private sector and how each impacts the money supply. The vertical component describes how the consolidated government (Fed and Treasury) transacts with the banking system in an exogenous form. The horizontal component describes how the banking system utilizes state issued money to transact *within* the banking system. It's very important to make this distinction because only the consolidated government can create net new financial assets. All horizontal banking transactions net to zero. As Randall Wray says:

> "Credit money (say, a bank demand deposit) is an IOU of the issuer (the bank), offset by a loan that is held as an asset. The loan, in turn, represents an IOU of the borrower, while the credit money is held as an asset by a depositor."[2]

Banks merely leverage the currency introduced into the system via vertical transactions. The following description of this horizontal and vertical relationship comes courtesy of Warren Mosler:

> "When the government "spends," the Treasury disburses the funds by crediting bank accounts. Settlement involves transferring reserves from the Treasury's account at the Fed to the recipient's bank. The resulting increase in the recipient's deposit account has no corresponding liability in the banking system. This creation is called "vertical," or exogenous to the banking system. Since there is no corresponding liability in the banking system, this results in an increase of non-government net financial assets.
>
> When banks create money by extending credit (loans create deposits), this occurs completely within the banking system and results in a liability for the bank (the deposit) and a corresponding asset (the loan). The customer has an asset (the deposit) and a corresponding liability (the loan). This nets to zero.
>
> Thus vertical money created by the government affects net financial assets and horizontal money created by banks does not, although its use in the economy as productive capital can increase real assets.
>
> The mistake that is usually made is comparing what happens in the horizontal system with what happens at the level of government accounting. At the horizontal level, debt is the basis for horizontal money creation. Therefore, it is often assumed that debt must be the basis for the creation of money by government currency issuance. This is not the case.
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> Reserve accounting uses the standard accounting identities, but the meaning of "liability" is not "debt." The husband-wife analogy for Central Bank-Treasury accounting relationships is apt. Since a husband and wife are responsible for each others debts, neither can be indebted to the other. That is to say, reserve accounting is a fiction that

> does not represent real relationships, such as exist between a creditor and debtor in the horizontal system.
>
> Moreover, government debt is not true debt either. At the macro level, the reserves that are transferred to banks through government disbursement are used to buy Treasury's. That is, when a Treasury is bought, this involves a transfer of reserves from the buyer's bank's reserve account at the Fed to the government's account (consolidating Central Bank and Treasury as "government").
>
> When the Treasury's are sold or redeemed, the reserves that were "stored" at interest are simply switched back, creating a deposit again. It's pretty much the same as buying and redeeming a CD. It's just a switch from demand to time back to demand in a bank account, and a switch between reserves and securities at the government level. That is to say, the government doesn't have to draw on revenue, borrow, or sell assets to cover its "debt," as households and firms do. It's just a matter of crediting and debiting accounts on the (consolidated) government books, even though it may appear that there is a financial relationship occurring between the CB and Treasury due to the accounting. However, it's just a fiction.
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> Therefore, the key to understanding Modern Monetary Theory is this vertical-horizontal relationship. When one understands this, then Abba Lerner's principles of functional finance become obvious. (1) Currency issuance through government disbursement is used to increase non-government net financial assets, and taxation withdraws net financial assets from non-government. (2) Debt issuance by the Treasury is a monetary operation for draining reserves to permit the Central Bank to hit its target rate.
>
> These principles are then applied to Y+C+I+G+NX to balance nominal aggregate demand with real output capacity in order to achieve full capacity utilization, hence, full employment, along with price stability. This is based not on theory requiring assumptions but on operational reality that can be represented using data, standard accounting identities, and stock-flow consistent macro models."[3]

The key takeaway here is that there is an important distinction between the currency users within the monetary system and the currency issuer. The government balance sheet is not like that of a household or a state. It does not finance spending via revenues or debt issuance. The US government, as a monopoly supplier of currency in a floating exchange rate system never really has nor doesn't have money.

It might help to think of the US government as an alchemist. The alchemist can create as much gold as she pleases (from nothing) in order to buy up productivity and satisfy the growing monetary demands of the people she supplies currency to, but she has to be very careful not to debase her gold (you'll notice that our trusty alchemist is female in this example as males have proven throughout history that they are not trustworthy overseers of government money). Most importantly, there is no solvency risk for the alchemist - only a pseudo form of default via currency collapse (hyperinflation). The alchemist only debases her gold when she issues an amount of gold that is in excess of productive capacity (inflation). But most importantly, she can never "run out" of gold. Therefore, she is never constrained in her ability to spend as a household, business or US state is. And more importantly, there is no solvency constraint on the state in the traditional manner that we think of for a household or business. That is, there is no such thing as the state becoming insolvent or not being able to meet its obligations - all of which are denominated in a currency that it alone can create.

In addition, we must understand that banks merely leverage government 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 based on their "reserve" position. There's just one problem here. **Banks are never reserve constrained!** Banks are always *capital* constrained. Reserves are used for only two purposes – to settle payments in the overnight market and to meet the Fed's reserve ratios. Aside from this, reserves have very little impact on the day to day lending operations of banks in the USA. The money multiplier is a mere myth. This was recently confirmed in a Fed paper:

> "Changes in reserves are unrelated to changes in lending, and open market operations do not have a direct impact on lending. We conclude that the textbook treatment of money in the transmission mechanism can be rejected."[4]

This is very important to understand because many have assumed that various Fed policies in recent years would be inflationary or even hyperinflationary. But all the Fed has been doing is adding reserves to the banking system. As we learned above, this doesn't lead to more lending and will not result in the private sector being able to access more financial assets. Because banks are not reserve constrained it can only mean one thing - banks lend when creditworthy customers have demand for loans.

Lastly, this also shows that banks create money entirely *within* the banking system. As was said above:

> "When banks create money by extending credit (loans create deposits), this occurs completely within the banking system and results in a liability for the bank (the deposit) and a corresponding asset (the loan). The customer has an asset (the deposit) and a corresponding liability (the loan). This nets to zero.
>
> Thus vertical money created by the government affects net financial assets and horizontal money created by banks does not, although its use in the economy as productive capital can increase real assets."

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

A Fiat System Where Everyone Still Thinks We Have A Gold Standard Constraint

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

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

This misconception exists even at the highest levels of government and has been propagated by many of the world's most prominent economists. I believe most people in power do not understand exactly how our monetary system works due to this fundamental flaw in our educational system - in fact, I believe 99% of the lawyers in Congress know far less than anyone thinks in terms of economics. The same can be said for many of the officials in Fed and Treasury.

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

> **"REP. HENRY WAXMAN:** Do you feel that your ideology pushed you to make decisions that you wish you had not made?
>
> **ALAN GREENSPAN:** Well, remember that what an ideology is, is a conceptual framework with the way people deal with reality. Everyone has one. You have to -- to exist, you need an ideology. The question is whether it is accurate or not.
>
> And what I'm saying to you is, yes, I found a flaw. I don't know how significant or permanent it is, but I've been very distressed by that fact.
>
> **REP. HENRY WAXMAN:** You found a flaw in the reality...
>
> **ALAN GREENSPAN:** Flaw in the model that I perceived is the critical functioning structure that defines how the world works, so to speak.
>
> **REP. HENRY WAXMAN:** In other words, you found that your view of the world, your ideology, was not right, it was not working?
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> **ALAN GREENSPAN:** That is -- precisely. No, that's precisely the reason I was shocked, because I had been going for 40 years or more with very considerable evidence that it was working exceptionally well."[5]

So you can see that the man running monetary policy in the USA for 18 years was working under a "flawed" framework. If the Fed chief, one formerly deemed "The Maestro", has a flawed understanding of our economic system then who can we really expect to understand all of this? It's clear to me that no one really does understand it completely and that explains, in large part, why the USA is in the position it is in today.

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

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

I believe these misconceptions persist due to three primary reasons:

First of all, this is all **highly** complex. Understanding the functions of a monetary system is high finance. We cannot expect everyone to understand it and we should expect most theories and outlines of the modern monetary system to be somewhat incomplete due to the dynamic existence of modern economies.

Second, this system in its current format is not very old and most of the people in power currently were educated by a generation in which this system was not largely applicable. Despite the fact that the world changed dramatically in 1971 when Nixon closed the gold window, we continue to work under theories and textbooks that don't fully account for this change. Therefore, the theories of old run rampant in modern economic circles.

Thirdly, politicians and ideologues have a vested interest in keeping the American public from understanding that the government is fundamentally different from a household, state or business. If the American public understood Modern Monetary Theory they might be more inclined to demand greater change - particularly in the ways that our banking system is designed.

Back To Basics

Getting back on track though - let's understand a few things first:

> **1.** We tax in order to create demand for the currency. In addition, it controls aggregate demand or effectively, the money supply.
>
> **2.** The bond market is a monetary tool. NOT a fiscal financing tool.
>
> **3.** Foreigners do not fund our spending.
>
> **4.** Money must be created *before* government bond auctions can occur and *before* taxes can be enforced. Otherwise, there is no currency in the system to tax and no money to raise via bond auctions. This is just basic logic in terms of the way the current system works. It can be no other way.
>
> **5.** Households, states, Europe and the gold standard are not remotely similar to the modern monetary system in which the Federal government of the USA functions.

A Simple Example Of A Modern Monetary System

The following example should help clarify some of the concepts mentioned above. Please excuse the simplicity, but this can be a mind-bending concept if you are textbook taught (trust me, I know the feeling) so I will keep it simple:

On a journey around the world with members of the US Navy we become shipwrecked and find ourselves on a beautiful island. There is a wonderfully productive citizenry there and they are accepting and generous of us. They are impressed by our combat training, weaponry, etc and hold us in high regard. We form a pact and what will later be known as a "government" whereby my men offer protection and safety in exchange for acceptance into their society. We agree to a government by the people and for the people and I am elected as their President. Economic

activity is the heart of this country and the people are innovative, enjoy hard work and reap the benefits of their labor.

The people of this island once transacted with seashells, but luckily, these innovative folks were wise enough to create a computer system just recently. I propose that we modernize our economy and begin transacting in a fiat currency so as to make trade more convenient and efficient. Lugging around seashells grew tiresome and while they were quite pretty, they are largely useless. I issue "reserve" notes and initiate an electronic system that tracks each citizen's transactions. These notes, on their own, are not worth more than the paper they're printed on. However, they serve as a convenient medium of exchange.

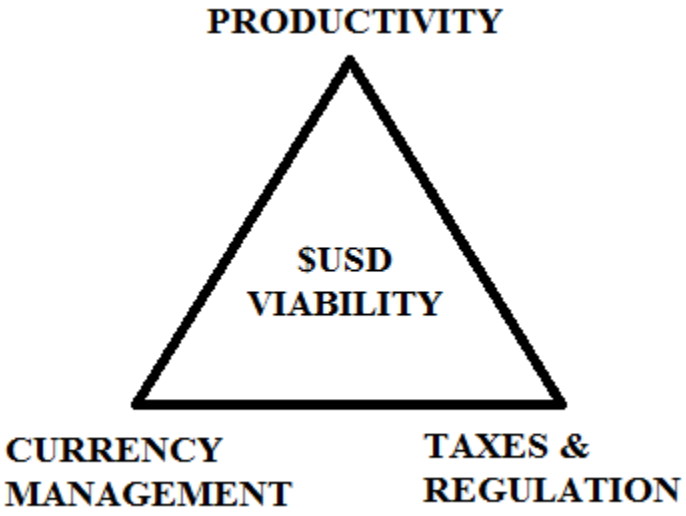
It's not free to live on the island, however, with all of these new resources and organized services. So, we create a tax. This acts as the glue that binds our monetary system together. This makes the citizens beholden to government via the "reserve" notes. They MUST have them in their account on April 15th of every year. I've created demand while also fulfilling their desire to transact conveniently and reliably. Why would they agree to this? Because I am offering them protection among various other services in exchange for this small tax burden. Because this island has a long standing feud with a neighboring island they are happy to pay this tax and sleep well at night. Our currency union is bonded by this pact that was created by the people for the people's benefit.

This is exactly what the US government does. In return, they spend money on public works, create jobs, spend money on furthering our nation's prosperity (in theory at least) and protection of the nation (a military). It is essentially an acknowledgment that we are stronger as a united state. As highly social animals, humans must recognize that there is a certain level of common sense behind the formation of these nations that are ruled by "governments". We form groups because we are more likely to ensure our survival through cooperation. We don't live in solitude. The formation of governments is nothing more than a manifestation of this fact. The evolution of the fiat monetary system is a step in this natural progression as the global economy has become increasingly complex and dynamic.

As the services offered by the state increase and grow it's possible that this tax burden could increase. It's important, however, that the role of the government not infringe on the prosperity of the private sector to an undue extent. Remember, government is a tool that is to be utilized by the citizens to further the private sector's prosperity. If the citizens on my island are productive and innovative we can expect our overall quality of life to increase. If, however, I am corrupt, mismanage my currency or produce currency in excess of my island's productive capacity I risk currency collapse in the form of the public's rejection of my currency system.

What Gives Fiat Money Its "Value"?

What backs these notes we created? What gives them value? Ultimately, these notes represent some amount of output and productivity that can be purchased. The notes in and of themselves have no intrinsic value, but serve as a medium of exchange that allows the citizenry to exchange various goods and services. The willingness of the consumers in the economy to use these notes is largely dependent on the underlying value of the output and/or productivity, the government's ability to be a good steward of the currency and the ability to enforce its usage. I like to think of this as an interconnected bond between these various forces. If any link in the bond is broken the nation's currency is at risk of collapse.



(Figure 1 - The fiat currency linkages)

The government cannot force the "value" of its currency on its citizens. The value of these notes is ultimately determined by three key linkages:

1. Productivity
2. Currency management
3. Taxes & regulation

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

The autonomous nation's government, which is the organized body formed though representation of the private sector, deems what is acceptable as currency. In the USA our representatives have deemed that the currency of the state is the US dollar[6]. This means that taxes are payable only in the currency of the state. When you consume and produce in the USA you will incur a tax liability. As the state defines, this liability can only be extinguished in the currency that the government deems as legal tender. This is important because taxes act as a binding force in any fiat

monetary system. You will obtain attempt to obtain the currency of the state in order to relinquish your tax liability.

While money is a creature of the state (that is, it can only be created and destroyed by the state) this money is not necessarily valuable only because the state says it is valuable. The “value” of the currency involves other linkages. Keynes once compared money to a theatre ticket:

> “money is the measure of value, but to regard it as having value itself is a relic of the view that the value of money is regulated by the value of the substance of which it is made, and is like confusing a theatre ticket with the performance”.[7]

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

There is one important fact here that cannot be overlooked, however. In order for the citizenry to transact in my currency (and ultimately pay their taxes) I must spend some amount of currency into existence FIRST. This is important to understand because I must issue notes BEFORE I can tax. Therefore, you can see that I am not funding my spending by taxing. In fact, it is exactly the opposite. I am funding the private sector's ability to pay their taxes when I spend money into existence. When the citizens pay their taxes, the government doesn't "have more money". After all, they have a computer system that credits accounts and prints up bills. It is impossible for them to "run out" of money. So, from a very technical perspective, it is better to think of the government as never *having* money.

But importantly, when I tax I am reducing the amount of currency in circulation by exactly the amount of the tax. In this sense, taxes "unprint" money. A tax reduction is the accounting equivalent of spending more money (except the money doesn't necessarily get allocated via the government political process as directly as it would via spending). So, we can see that spending is like a tax cut (both tax cuts and spending add net financial assets to the private sector) and spending cuts are the accounting equivalents to tax hikes (as both reduce net financial assets to the private sector). Treasury Secretary Timothy Geithner directly stated this in a recent media appearance:

"Spending cuts are the same thing as a tax increase."

How do I enforce your use of these "reserve" notes? I create jobs via a military and a police force and pay them well (notice that when government spends money they are simply buying up private sector productivity). Don’t want to pay your taxes? Say hello to officer Joe. A group doesn’t want to pay their taxes? They can protest, but if you get out of control I will throw you in jail. In other words, don’t question the currency or else. This might sound harsh to some, however, any sound currency system must have rules and regulations that dictate proper use of the nation's currency. Without rules and regulations that help sustain the fabric of the monetary system the government that Americans have built long and hard to create would become increasingly fragile. The United States Secret Service was in fact created specifically for this purpose - to protect the US Dollar.[8]

There is arguably, nothing more important to government stability than maintaining the value and faith in the nation's currency.

If an economy is productive, the autonomous nation can enforce the use of said currency, and as long as we are sound stewards of the currency there should always be demand for it. In other words, trust in the national currency is safe as long as the rule of law is maintained, government is a good steward of the currency, citizens are productive and I maintain my ability to tax you. If my government becomes corrupt, spends well in excess of productive capacity or mismanages the economy then there is an increasing chance of currency collapse (hyperinflation). In essence, this occurs when the citizenry lose faith in the nation's currency and slowly refuse to transact and produce in that currency. This is also known as hyperinflation.

Hyperinflation is a very different phenomenon from inflation. Hyperinflation is a disorderly economic progression that leads to complete psychological rejection of the nation's currency. It is not merely a monetary phenomenon, but a political phenomenon as well. This full-blown rejection of state money is, in essence, a collapse in the state.[9]

On my island I do not borrow from governments or tax to spend as I would if my currency were backed by gold. Interestingly, I can't TAX you until I've credited your accounts with "reserve" notes. There is no money to be taxed otherwise. So, in effect, I have to SPEND in order to TAX (counter-intuitive to what you have been taught). Taxing debits your accounts (saps liquidity) and spending credits your account. On my island, I am never revenue constrained. If you don't pay your taxes I will throw you in jail and confiscate your money. But that doesn't mean I can spend more when I tax. What do I care if you send me your "reserve" notes? I can just press a button and credit my "spending" account right after I shred your tattered looking cash. This is what the US government actually does. Taxation is essentially a form of maintaining control of private sector spending. In this sense, taxes serve no funding purpose, but merely serve to regulate aggregate demand. In fact, if you pay your taxes in cold hard cash the IRS will most likely shred those dollars. They don't put them in a bag and mail them to the Treasury so they can go "spend" it. The only reason they might keep the dollars is if they are in good condition so they can go back out into circulation. When the US government wants to spend money they simply tell men and women to walk into a room and credit accounts in a computer system.

What's The Catch? This Sounds Like A Free Lunch

So what's the bogey here? What's the catch? Because surely you must be asking yourself why this sounds like a free lunch. We can just spend to our hearts content, right? Absolutely not. The bogey here is inflation which is constantly moving up and down with the amount of money in the system based on my tax rate, spending, borrowing, etc. **Thus, government cannot just spend and spend and spend or the extra dollars in the system will chase too few goods and drive up prices. It's important to understand that government cannot just spend recklessly. This is important so I'll say it again. This does not give the government the ability to spend and spend and spend. If they spend in excess of productive and tax too little they can create mal-investment and inflation.** Likewise, if the government taxes too much and spends too little they create a government surplus and private sector deficit (by accounting identity). This can result in deflation and/or excess private sector debt levels as the private sector literally suffers a dollar shortage.

Some people claim that Modern Monetary Theorists say deficits don't matter. That is a vast misrepresentation of MMT. No Modern Monetary Theorist would ever say such a thing. Deficits most certainly do matter. Maintaining the correct level of deficit spending is, in many ways, a balancing act performed by the government. It is best to think of the government's maintenance of the deficit like a thermostat for the economy. When the economy is running cold the deficit can afford to be higher. When it is hot the deficit should be lower. Because there is no solvency

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

It's also important to note that spending by the government must be focused on its efficiency. If spending is misdirected or misguided there is a very real possibility that this spending will simply result in higher inflation that is not offset by increased productivity. If you pay people to sit on their couches all day long there is no reason to believe why this sort of government policy will not result in long-term economic decline in the citizenry's standard of living. Therefore, government has an incentive to promote productive output and maintain sound stewardship of its currency.

What Role Does The Bond Market Play In All Of This?

In terms of the bond market, the issuance of bonds does not serve the same purpose it did under the gold standard. We actually issued bonds because we were revenue constrained (not enough gold reserves at all times to fund spending without creating inflation). In the modern monetary system bonds fund nothing. It's important to note that the bond market is largely a relic of the gold standard. The system did not undergo the overhaul that would have been possible in 1971 when we became a completely autonomous currency issuer. Therefore, the system of old remains largely intact and it remains widely believed that it serves the same function that it did under a revenue constrained monetary system.

Bond issuance is a relic of the gold standard that serves only to help the Fed hit its target interest rate (a pure monetary operation to control the Fed Funds Target Rate). It can also be thought of as another form of government spending because a treasury bond is basically a savings account. Disbursements in the form of interest on US government bonds add to the budget deficit and increase private sector net financial assets. People think this is government "debt" because Congress mandates the issuance of bonds (this is primarily due to misconception and the need for accountability), but it's not accurate to think of the government as having "debt" when that liability is essentially issued to itself in a currency that it can willingly create. As I've mentioned several times before, there is no such thing as the USA not being able to pay off the liabilities which are denominated in a currency which it can create out of thin air. 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."[10]

As a monopoly supplier of currency in a floating exchange rate system the USA simply spends money when it wants to. Like it or not, men and women walk into a room and type numbers into computers. There is no constraint in the government's ability to spend (except for the public's willingness to allow this spending). The amount of spending that is done by the U.S. government is intended to meet some public necessity or purpose (some of which is good and some of which is not) – population growth, economic growth, public services, etc.

The issuance of government bonds is merely a monetary tool that helps the Federal Reserve to control the overnight rate. It is not a fiscal financing tool. To understand this point we can review government bond auctions in the USA. These auctions are carefully orchestrated events that are designed not to fail – that's why they never do. But don't take it from me. Take it from the NY Fed:

> "Staff on the Desk start each workday by gathering information about the market's activities from a number of sources. The Fed's traders discuss with the primary dealers how the day might unfold in the securities market and how the dealers' task of financing their securities positions is progressing. Desk staff also talk with the large banks about

> their reserve needs and the banks' plans for meeting them and with fed funds brokers about activities in that market.
>
> Reserve forecasters at the New York Fed and at the Board of Governors in Washington, D.C., compile data on bank reserves for the previous day and make projections of factors that could affect reserves for future days. The staff also receives information from the Treasury about its balance at the Federal Reserve and assists the Treasury in managing this balance and Treasury accounts at commercial banks.
>
> Following the discussion with the Treasury, forecasts of reserves are completed. Then, after reviewing all of the information gathered from the various sources, Desk staff develop a plan of action for the day."[11]

So let's connect the dots here. Treasury auctions bills, notes and bonds to "finance" its spending. It announces these auctions periodically. In the case of bills it announces the auction each week on Monday and the bills are auctioned that Tuesday. This is due to a Congressional mandate because our politicians believe we must finance all of our spending via bond auctions – a myth that has persisted since moving off the gold standard.

What's important to note here, however, is that Treasury and the Fed are working in partnership to track deposits and maintain a record of reserves in the system (Fed and Treasury are essentially the same entity as far as operations are concerned). William McChesney Martin, the longest ever serving Chairman of the Fed has actually said as much:

> "There was a very real point . . .that the primary direction must come from the Treasury and **that anything done by the Federal Reserve must be coordinated with the Treasury.**"[12]

The whole myth of "Fed independence" generates a great deal of confusion. Make no mistake, the Fed is not an independent entity. They pass close to 100% of their profits on to the US Treasury and work in close coordination with the government in everything they do. The myth of independence is intended to create the perception of no political bias. But do not be fooled - the Fed is very much a part of the US government. They might maintain their political independence, but they are very much a part of the US government.

This coordination is important because their reserve tracking and auction operations are actually just a monetary tool and **NOT** a fiscal financing tool. In this regard, MMTers like to view the Treasury and Fed as a consolidated entity. When the Treasury auctions off bonds it does so only after discussing matters with the Fed's reserve forecasters. In essence, the government is soaking up reserves that had already been spent into existence in order to target the overnight rate. It can be no other way. Without Treasury having first spent the money into existence there is no money with which the Primary Dealers can "fund" the deficit.

This doesn't mean auctions can't fail. They can. But quite honestly, it wouldn't matter all that much as the reserve drain would simply take place at a later date. The auctions are designed to succeed because they are merely targeting reserves that they **KNOW** are in the system. There is no red phone at Treasury that Tim Geithner uses to call China before it spends money. No red phone to Japan. There is only a phone to the Fed where reserve forecasters communicate with the Treasury and the Primary Dealers to determine the size and scope of the necessary auctions. If the Fed were to find that there were not enough reserves in the system to settle the bond auctions, as the monopoly supplier of reserves, they would make them available. Thus, when auctions are completed the reserve drain is accomplished, Congress thinks we have "funded" our spending and we can all go along our merry way.

Most importantly though, these actions help the Fed to control its overnight target rate. Before the Fed began paying interest on reserves the lack of auctions would have resulted in excess reserves in the banking system and a loss of control of the overnight rate as banks bid down the rate in an effort to lend their excess reserves. This would drive the rate to 0%. Now, with the Fed paying interest on excess reserves, the Fed is able to maintain excess reserves in the banking system by establishing a floor at the rate of interest it pays.

So you can see that this is all well orchestrated monetary policy. It is not a fiscal financing operation. The Fed and Treasury are working in tandem with the Primary Dealers to track reserves. After all, part of the agreement in becoming a Primary Dealer is to make a market in treasuries:

> "The primary dealers serve, first and foremost, as trading counterparties of the Federal Reserve Bank of New York (The New York Fed) in its implementation of monetary policy. This role includes the obligations to: (i) participate consistently as counterparty to the New York Fed in its execution of open market operations to carry out U.S. monetary policy pursuant to the direction of the Federal Open Market Committee (FOMC); and (ii) provide the New York Fed's trading desk with market information and analysis helpful in the formulation and implementation of monetary policy. **Primary dealers are also required to participate in all auctions of U.S. government debt and to make reasonable markets for the New York Fed when it transacts on behalf of its foreign official account-holders**."[13]

Therefore it is misleading to imply that the auctions might fail due to a lack of demand or some sort of funding failure. The Primary Dealers are required to make a market in government bonds. If they wanted, they could hedge their exposure to government bonds, but part of the agreement in becoming a primary dealer is helping the government sell their bonds so demand is never really an issue.

It's also important to understand that foreigners do not fund the spending of the USA. As a current account deficit nation, the US government can appropriately be thought of as a net currency exporter. This means that we send pieces of paper over to foreign nations in exchange for goods and services. In doing so these nations get the benefit of employing millions of domestic workers via their business partnerships with US corporations. But this doesn't mean they "own" the USA.

When China receives dollars they can only do a handful of things with these dollars. China, for the most part, chooses to invest these dollars in US Treasuries. They have attempted to use their dollars to purchase other USD denominated assets, but the US government has squashed those efforts. So, instead of leaving these pieces of paper to collect dust in vaults, they open what is the equivalent of savings account with the US government. Most importantly though, if you study the bond auction data from the USA you'll find that indirect foreign bidders make up a very small portion of the auctions. This is due to the fact that the Primary Dealers are designed to be able to take down the entire auction. As I discussed above, this is their primary role in the agreement in being a PD. So, while China can choose to buy bonds, it is by no means necessary that they do so. China could literally leave the market for US government bonds and the show would go on.

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

PUBLIC DEBT NEWS

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For Immediate Release
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CONTACT: Office of Financing
202-504-3550

TREASURY AUCTION RESULTS

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

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

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

(Figure 2 - 10 Year Note Auction)

Why does any of this matter you ask? Because once you realize that foreigners and bonds in general do not fund our spending you begin to realize that much of what your textbook taught you about our monetary system is simply not true. A government with a monopoly supply of currency in a floating exchange rate system has no solvency risk unlike a nation such as Greece that exists in a single currency system with what is essentially a foreign central bank. A government with a monopoly supply of currency in a floating exchange rate system is never revenue constrained.

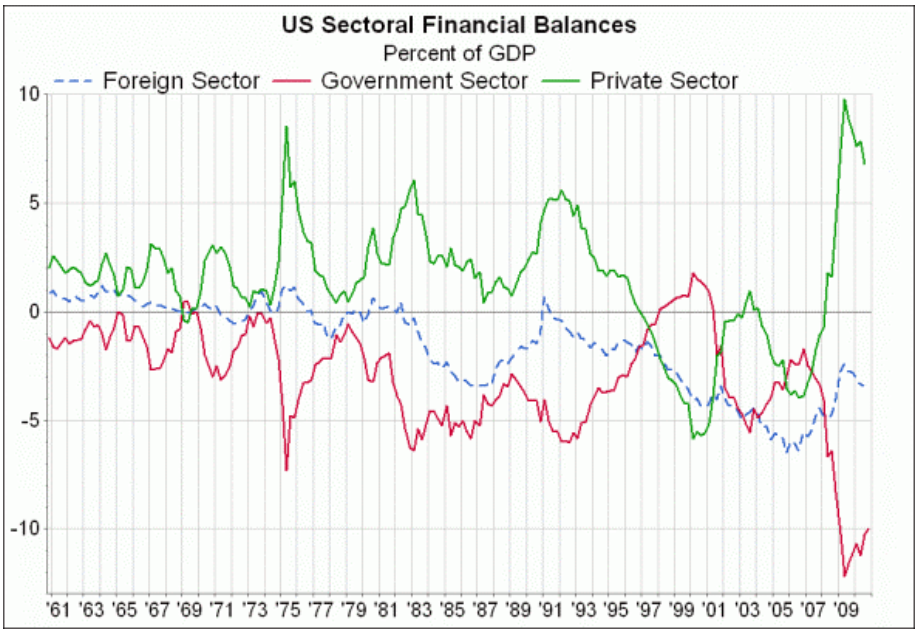
The policy implications in such a system are astronomically different – particularly for a nation suffering a balance sheet recession (as I believe we are now). So, when you hear politicians and pundits talking about the national debt and our imminent bankruptcy you can be certain that they have little to no idea what they are actually talking about and instead are using fear mongering tactics to promote a political perspective (one that usually involves separating the middle class from its savings).

The Importance Of Understanding Sectoral Balances

The US government is never revenue constrained. They are not like a household, business or state government. We don't need China to buy our bonds in order to spend. China gets pieces of paper with old dead white men on them in exchange for real goods and services. They can either hold that money in a checking account at the Fed OR they can do what they wisely do and invest those pieces of paper in what is actually a savings account at the Fed. We also don't need taxes to spend although taxes play a vital role in helping to regulate aggregate demand. It can be helpful to understand this concept by understanding some simple accounting identities behind government spending.

The deficit of the entire government (federal, state, and local) is always equal (by definition) to the current account deficit plus the private sector balance (excess of private saving over investment). To be more precise: net household financial income = current account surplus + government

deficit + Δbusiness non-financial assets. The private sector surplus represents the net saving of the private sector (households and businesses) from income after spending, while the public sector deficit is the government's deficit. This is the essence of the sectoral balances approach made famous by the late great Wynne Godley. It can be visualized with the following diagram:



(Figure 3 - Sectoral Balances)

The sectoral balances can be broken down according to GDP:

GDP = C + I + G + (X – M)

C = consumption

I = investment

G = government spending

X = exports

M = imports

Or stated differently;

GDP = C + S + T

C = consumption

S = savings

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:

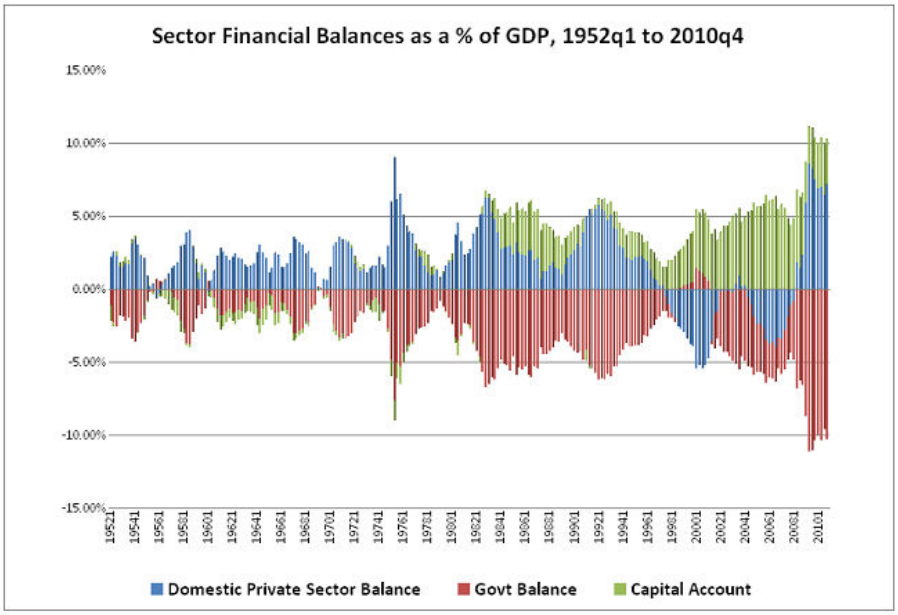
(I – S) + (G – T) + (X – M) = 0

(I – S) = private sector balance

(G - T) = public sector balance

(X – M) = foreign sector balance

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



(Figure 4 - Sectoral Balances part 2)

What you can essentially see here is that the USA has run budget deficits for the majority of the last 60 years (in fact well over 200 years). More importantly, however, the domestic private sector balance has remained in surplus until the late 90's. This was in large part due to the government's desire to run budget surpluses as we believed the government sector needed to "save" in order to spend. As voters cheered the "fiscal prudence" of Bill Clinton they had no idea that he was helping to contribute to the bankruptcy of the private sector and ultimately lead us towards one of the greatest economic calamities of the last 75 years. In essence, the surplus years of the

Clinton Presidency removed net financial assets from the private sector and forced the private sector to sustain their standard of living by acquiring money in the only other way possible - by going into debt. What would ensue over the course of the next 10 years would be the largest debt bubbles in the history of modern economies.

Another important conclusion from the above analysis is that you'll see that all three sectors cannot be in deficit or surplus at the same time. This is impossible as one sector's deficit is another's surplus. You will often hear politicians say "we all need to tighten our belts". When it comes to political rhetoric that sounds great, but when it comes to reality it is simply not rational. If the private sector desires to net save then the public sector must spend. Both cannot save without causing adverse effects to the economy. If, as we saw in 1999, the private sector and public sector both attempt to save then there is an increasing likelihood that the private sector will attempt to sustain its standard of living by taking on excessive levels of indebtedness. In a world with global trade we are certain to have trade deficit and trade surplus nations. This means that once you input the foreign sector into the above equation you are, by definition, going to have countries that MUST run government budget deficits or ultimately suffer shrinking economies.

"Money" Is Not "Wealth"

This accounting identity does not merely mean the government can spend money and make the population wealthy. Money is not wealth. Money is simply the medium of exchange that allows citizens to exchange and transact in the underlying goods and services. If a government spends money in excess of a nations underlying productivity it will devalue this "money" and generate inflation. This would result in too much money chasing too few goods. So, the key for government is to balance the amount of money in the system in order to keep the temperature just right - not too hot and not too cold.

So, MMT does not claim that the government can just recklessly spend. But it's imperative that the government spend SOME money otherwise they are simply debiting the system each year via taxation without ever crediting accounts. If Americans are to transact in the currency of the US government then the government must first issue the currency before it can be used to transact. For instance, just ask yourself what would happen if the government imposed a one time 100% asset tax? The private sector would instantaneously be without money. How would they spend? How would they invest? How would they pay taxes? The economy would collapse and the government would be "rich". The government balance sheet would be clean, but the private sector balance sheet would be destroyed. Not a plan for economic prosperity. After all, we do not run our government for the benefit of government, but for the benefit of the private sector. Government is merely a tool that can be utilized to further private sector prosperity.

Many financial theorists actually believe the Great Recession (and the Great Depression) was caused in part by account SURPLUS. You'll notice that both events were preceded by great periods of "fiscal competence", ie, budget surpluses. If you review the history of the United States you can garner a greater appreciation for this idea that government is not a household and that surpluses are not the ideal goal for the government balance sheet. Professor Randall Wray elaborates on this fact:

> "With one brief exception, the federal government *has been in debt every year since 1776.* In January 1835, for the first and only time in U.S. history, the public debt was retired, and a budget surplus was maintained for the next two years in order to accumulate what Treasury Secretary Levi Woodbury called "a fund to meet future deficits." In 1837 the economy collapsed into a deep depression that drove the budget into deficit, and the federal government has been in debt ever since. Since 1776 there have been exactly seven periods of substantial budget surpluses and significant reduction of the debt. From 1817 to 1821 the national debt fell by 29 percent; from 1823 to 1836 it was eliminated (Jackson's efforts); from 1852 to 1857 it fell by 59 percent, from

> 1867 to 1873 by 27 percent, from 1880 to 1893 by more than 50 percent, and from 1920 to 1930 by about a third. Of course, the last time we ran a budget surplus was during the Clinton years. I do not know any household that has been able to run budget deficits for approximately 190 out of the past 230-odd years, and to accumulate debt virtually nonstop since 1837.
>
> The United States has also experienced six periods of depression. The depressions began in 1819, 1837, 1857, 1873, 1893, and 1929. (Do you see any pattern? Take a look at the dates listed above.) With the exception of the Clinton surpluses, every significant reduction of the outstanding debt has been followed by a depression, and every depression has been preceded by significant debt reduction. The Clinton surplus was followed by the Bush recession, a speculative euphoria, and then the collapse in which we now find ourselves. The jury is still out on whether we might manage to work this up to yet another great depression. While we cannot rule out coincidences, seven surpluses followed by six and a half depressions (with some possibility for making it the perfect seven) should raise some eyebrows. And, by the way, our less serious downturns have almost always been preceded by reductions of federal budget deficits. I don't know of any case of a national depression caused by a household budget surplus."[14]

So you can see what occurs when the government runs a surplus or fails to sufficiently spend in the currency in which the private sector must transact. It effectively bankrupts the private sector. In 1929 and 1999, the government had debited too many accounts and forced the private sector into deficit. This results in the private sector borrowing what it can't actually get its hands on as citizens attempt to sustain their standard of living. The risk is full-blown debt deflation due to excessive debt levels (because you borrow to make up for the income shortfall). This phenomenon was even more pronounced during the 1800's when we suffered SIX depressions.

Conclusion

In sum, most of what we have been taught in school is based on a now defunct monetary system (the gold standard). MMT is not a theory, but merely a description of a modern fiat currency system. While its description of the modern monetary system is accurate, it is by no means a holy grail. And those who apply policy prescriptions are merely utilizing the realities of the system to apply what they *believe* are sound uses of the system. It does not mean the government can just credit accounts and create real wealth. No, real wealth is only created through real productivity. And while government can't create this wealth it can be used as a tool to help the private sector to achieve prosperity. I think it's important to understand that government is not always bad or that government spending is always evil. In fact, government serves a vital purpose within our society. How involved that government is in the day to day lives of its citizens is to be decided by the citizens themselves.

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

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

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