Excerpt from "Modern Money Theory: A Primer on Macroeconomics For Sovereign Monetary Systems" 2nd Edition, by L. Randall Wray

Begins below...

3.6 The technical details of central bank and treasury coordination: the case of the Fed[2]

Previously we discussed the general case of government spending, taxing, and bond sales. To briefly summarize, we saw that when a government

spends, there is a simultaneous credit to someone's bank deposit and to the bank's reserve deposit at the central bank; taxes are simply the reverse of that operation: a debit to a bank account and to bank reserves. Bond sales are accomplished by debiting a bank's reserves.

For the purposes of the simplest explication, it is convenient to consolidate the treasury and central bank accounts into a "government account". To be sure, the real world is more complicated: there is a central bank and a treasury, and there are specific operational procedures adopted. In addition there are constraints imposed on those operations. Two common and important constraints are (a) the treasury keeps a deposit account at the central bank and must draw upon that in order to spend and (b) the central bank is prohibited from buying bonds directly from the treasury and from lending to the treasury (which would directly increase the treasury's deposit at the central bank).

The United States is an example of a country that has both of these constraints. In this section we will go through the complex operating procedures used by the Fed and US Treasury. Scott Fullwiler is perhaps the most knowledgeable economist on these matters, and this discussion draws very heavily on his exposition cited below. Readers who want even more detail should go to his paper, which uses a stock-flow consistent approach to explicitly show results.

First, however, let us do the simple case, beginning with a consolidated government (central bank plus treasury) and look at the consequences of its spending. Then we will look at the real-world example of the United States today. We are using some simple T accounts here. It might take some readers a bit of patience to work through this, but it will help to study previous examples using balance sheets. (Note: these are partial balance sheets; we are only entering the minimum number of entries to show what is going on.)

Let us assume government first imposes a tax liability and buys a jet. This is shown as Case 1a:

Government	
Asset	Liability
+Jet	+Reserve
+Tax Liability	+Net Worth

Private Bank	
Asset	Liability
+Reserve	+DD

Private Nonbank Entity	
Asset	Liability
+DD	+Tax Liability
–Jet	–Net Worth

Figure 3.1 Case 1a: government imposes a tax liability and buys a jet by crediting an account at a private bank

The government gets the jet, the private seller gets a demand deposit. Note that the tax liability reduces the seller's net worth and increases the government's (after all, that is the purpose of taxes – to move resources to the government). The private bank gets a reserve deposit at the government.

Now the tax is paid by debiting the taxpayer's deposit and the bank's reserves:

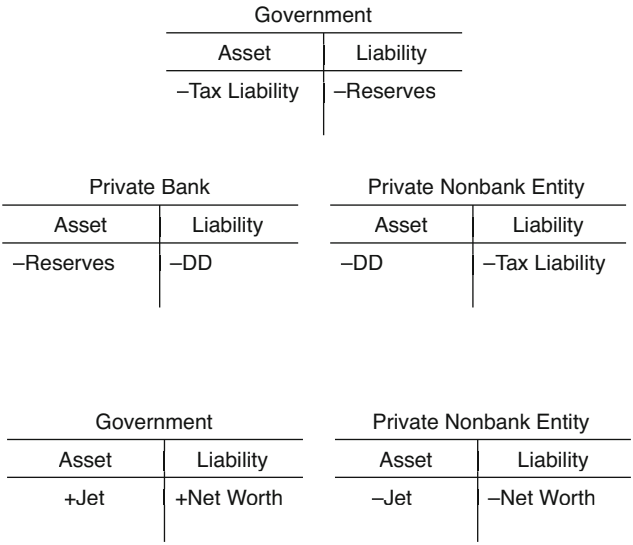

Figure 3.2 Final position, Case 1a

The implication of "balanced budget" spending and taxing by the government is to move the jet to the government sector, reducing the private sector's net worth. Government uses the monetary system to accomplish the "public purpose": to get resources such as jets.

Now let us see what happens when government deficit spends. (Don't get confused – we are not arguing that taxes are not needed; remember "taxes drive money", so there is a tax system in place, but government decides that this week it will buy a jet without imposing an additional tax.)

Here the jet is moved to the government, but the deficit spending allows net financial assets (reserves) to be created in the private sector (the seller has a demand deposit equal to the government's financial

Government	
Asset	Liability
+Jet	+Reserves

Private Bank	
Asset	Liability
+Reserves	+DD

Private Nonbank Entity	
Asset	Liability
–Jet +DD	

Figure 3.3 Case 1b: government deficit spends, which creates private net wealth

liability – reserves). However, the bank is holding more reserves than desired. It would like to earn more interest, so government responds by selling a bond (bonds are sold as part of monetary policy, to allow the government to hit its overnight interest rate target):

Government	
Asset	Liability
	–Reserves +Bond

Private Bank	
Asset	Liability
–Reserves +Bond	

Government	
Asset	Liability
+Jet	+Bond

Private Bank	
Asset	Liability
+Bond	+DD

Private Nonbank Entity	
Asset	Liability
–Jet +DD	

Figure 3.4 Final position, Case 1b

The net financial asset remains, but in the form of a treasury rather than reserves. Compared with Case 1a, the private sector is much happier! Its total wealth is not changed, but the wealth was converted from a real asset (jet) to a financial asset (claim on government).

Ah, but that was too easy. Government decides to tie its hands behind its back by requiring it sell the bond before it deficit spends. Here's the first balance sheet, with the bank buying the bond and crediting the government's deposit account:

Government	
Asset	Liability
+DD	+Bond

Private Bank	
Asset	Liability
+Bond	+DD Gov.

Figure 3.5 Case 2: government must sell bond before it can deficit spend

Government	
Asset	Liability
–DD +Jet	

Private Bank	
Asset	Liability
	–DD Gov. +DD Private

Private Nonbank Entity	
Asset	Liability
–Jet +DD	

Figure 3.6 Government buys jet, writing check on private bank

The bank debits the government's deposit and credits the seller's. The final position is as follows:

Government	
Asset	Liability
+Jet	+Bond

Private Bank	
Asset	Liability
+Bond	+DD

Private Nonbank Entity	
Asset	Liability
–Jet +DD	

Figure 3.7 Final position, Case 2

Note it is exactly the same result as Case 1b: selling the bond before deficit spending has no impact on the result, so long as the private bank is able to buy the bond and the government can write a check on its deposit account.

That, too, is too simple. Let's tie the government's shoes together: it can only write checks on its account at the central bank. So in the first step it sells a bond to get a deposit at a private bank.

Treasury	
Asset	Liability
+DD Private Bank	+Bond

Private Bank	
Asset	Liability
+Bond	+DD Treasury

Figure 3.8 Case 3: treasury can write checks only on its central bank account

Now the treasury must shift its deposit to the central bank *before* it can buy a jet.

Treasury	
Asset	Liability
–DD Private Bank +DD Central Bank	

Central Bank	
Asset	Liability
+Loaned Reserves	+DD Treasury

Private Bank	
Asset	Liability
	–DD Treasury +Borrowed Res.

Figure 3.9 Treasury moves deposit to central bank account

We have assumed the bank had no extra reserves to be debited when the treasury moved its deposit, hence the central bank had to lend reserves to the private bank (temporarily, as we will see). Now the treasury has its deposit at the central bank, on which it can write a check to buy the jet.

Government	
Asset	Liability
–DD +Jet	

Central Bank	
Asset	Liability
–Loaned Reserves	–DD Treasury

Private Bank	
Asset	Liability
	+DD –Borrowed Res.

Private Nonbank Entity	
Asset	Liability
–Jet +DD	

Figure 3.10 Treasury buys jet

When the treasury spends, the private bank receives a credit of reserves, allowing it to retire its short-term borrowing from the central bank (looking to the private bank's balance sheet, we could show a credit of reserves to its asset side, and then that is debited simultaneously with its borrowed reserves; I left out the intermediate step to keep the balance sheet simpler). The private bank credits the jet seller's account. The final position is as follows:

Government	
Asset	Liability
+Jet	+Bond

Private Bank	
Asset	Liability
+Bond	+DD

Private Nonbank Entity	
Asset	Liability
–Jet +DD	

Figure 3.11 Final position, Case 3

What do you know, it is exactly the same as Case 2 and Case 1b! Even if the government ties its hands behind its back and its shoes together, it makes no difference.

OK, admittedly these are still overly simple thought experiments. Let's see how it is really done in the United States – where the Treasury really does hold accounts in both private banks and the Fed but can write checks only on its account at the Fed. Further, the Fed is prohibited

from buying Treasuries directly from the Treasury (and is not supposed to allow overdrafts on the Treasury's account). The Treasury's deposits in private banks come (mostly) from tax receipts, but the Treasury cannot write checks on those deposits. So the Treasury needs to move those deposits from private banks before spending, and it must sell bonds to obtain deposits when tax receipts are too low. So let us go through the actual steps taken. Warning: it gets wonky.

Box Frequently asked questions

Q: You MMTers always want to consolidate the Fed and Treasury, but really the Fed is a private institution that is not a part of government, and in reality the Treasury cannot spend unless the Fed will allow it to spend, otherwise it must get tax revenue before it can spend. So isn't it true that hence really government spending is constrained by its revenue, just like a household or firm?

A: What MMT has shown – from the very beginning of the creation of the approach – is that you can consolidate or deconsolidate and the balance sheets end up in exactly the same place. The MMT logic holds no matter how you do it: government creates a money of account, imposes a tax in that unit, spends currency denominated in the unit, and collects taxes paid in its own currency.

The Fed is not a private institution, but rather is a creature of Congress and no more independent of government than is the Treasury, the Department of Defense, the Department of Transportation, or the Internal Revenue Service. The Fed is normally allowed to set the overnight interest rate target free from the everyday kind of politics – but all of these other branches of government also have some independence from party politics.

Choose to consolidate or to deconsolidate and then do your T-accounts and you will reach exactly the same endpoint as long as you stick to one or the other. Not surprising, since Treasury "deposits" at the Fed are an internal government record. The Fed is a bank. It lends its IOUs into existence. The Treasury is the branch of government that is responsible for levying and collecting taxes that Congress has mandated in its legislation. Those taxes drive the Treasury's currency. The Treasury gives value to the Fed's IOUs (reserves and FRnotes) because it is willing to accept those in tax payment. If the Treasury refused to do so, the Fed's liabilities would be no better than those of the Bank of Podunk. Without the Treasury standing behind the Fed, we'd be back in the nineteenth century where bank notes did not clear at par.

Our deconsolidators love to believe that it is the Fed that is all-powerful and the poor little Treasury (and by extension Uncle Sam) is subject to the whims of our unelected "private" Fed. Actually, the Fed is legally a creature of Congress. In times of war or crisis, the Fed is explicitly subjugated to the Treasury. In other times, the Fed serves at the pleasure of Congress and the Treasury albeit with little oversight. While I think that is a mistake, it doesn't make the Fed either independent or dominant.

3.7 Treasury debt operations

The Federal Reserve Act now specifies that the Fed can only purchase Treasury debt in "the open market," though this has not always been the case. This necessitates that the Treasury have a positive balance in its account at the Fed (which, as set in the Federal Reserve Act, is the fiscal agent for the Treasury and holds the Treasury's balances as a liability on its balance sheet). Therefore, prior to spending, the Treasury must replenish its own account at the Fed either via balances collected from tax (and other) revenues or debt issuance to "the open market".

Given that the Treasury's deposit account is a liability for the Fed, flows to/from this account affect the quantity of reserve balances. For example, Treasury spending will increase bank reserve balances while tax receipts will lower reserve balances. Normally, increases or decreases to banking system reserves impact overnight interest rates. Consequently, the Treasury's operations are inseparable from the Fed's monetary policy operations related to setting and maintaining its target rate. Flows to/from the Treasury's account must be offset by other changes to the Fed's balance sheet if they are not consistent with the quantity of reserve balances required for the Fed to achieve its target rate on a given day. As such, the Treasury uses transfers to and from thousands of private bank deposit (both demand and time) accounts – usually called tax and loan accounts – for this purpose.

Prior to fall 2008, the Treasury would attempt to maintain its end-of-day account balance at the Fed at $5 billion on most days, achieving this through "calls" from tax and loan accounts to its account at the Fed (if the latter's balance were below $5 billion) or "adds" to the tax and loan accounts from the account at the Fed (if the latter were above $5 billion). (The Global Financial Crisis and the Fed's response, especially "Quantitative Easing" has led to some rather abnormal situations that we will mostly ignore here.)

In other words, *timeliness* in the Treasury's debt operations requires consistency with both the Treasury's management of its own spending/revenue time sequences and the time sequences related to the Fed's management of its interest rate target. As such, under normal, "pre-global financial crisis" conditions for the Fed's operations in which its target rate was set above the rate paid on banks' reserve balances (which had been set at zero prior to October 2008, but is now set above zero as the Fed pays interest on reserves), there were six financial transactions required for the Treasury to engage in deficit spending.

Unless the Treasury already has sufficient deposits in its account at the Fed it will engage in the following six operations to facilitate its spending. Since it doesn't have sufficient deposits, it will need to initate an "auction" of a new issue of bonds.

A. The Fed undertakes repurchase agreement operations with primary dealers (in which the Fed purchases Treasury securities from primary dealers with a promise to sell them back to dealers on a specific date) to ensure sufficient reserve balances are circulating for settlement of the Treasury's auction (which will debit reserve balances in bank accounts as the Treasury's account is credited) while also achieving the Fed's target rate. (It is well known that settlement of Treasury auctions are "high payment flow days" that necessitate a larger quantity of reserve balances circulating than other days, and the Fed accommodates the demand.)
B. The Treasury's auction settles as Treasury securities are exchanged for reserve balances, so bank reserve accounts are debited to credit the Treasury's account, and dealer accounts at banks are debited.
C. The Treasury adds balances credited to its account from the auction settlement to tax and loan accounts. This credits the reserve accounts of the banks holding the credited tax and loan accounts.
D. (Transactions D and E are interchangeable, that is, in practice, transaction E might occur before transaction D.) The Fed's repurchase agreement is reversed as the second leg of the repurchase agreement occurs in which a primary dealer purchases Treasury securities back from the Fed. Transactions in A above are reversed.
E. Prior to spending, the Treasury calls in balances from its tax and loan accounts at banks. This reverses the transactions in C.
F. The Treasury deficit spends by debiting its account at the Fed, resulting in a credit to bank reserve accounts at the Fed and the bank accounts of spending recipients.

The analysis is much the same in the case of a deficit created by a tax cut instead of an increase in spending. That is, with a tax cut, the Treasury's spending is greater than revenues just as it is with proactive deficit spending.

Note also that the end result is exactly as stated above using the example of a consolidated government (treasury and central bank): government deficit spending leads to a credit to someone's bank account and a credit of reserves to a bank which are then exchanged for a treasury to extinguish the excess reserves. However, with the procedures actually adopted,

the transactions are more complex and the sequencing is different. But the final balance sheet position is the same: the government has the jet, and the private sector has a treasury.

The implications of this for understanding the "self-imposed constraints" described above are highly significant. Recognize that only reserve balances can settle Treasury auctions via Fedwire. Note, though, that the only sources of reserve balances over time (that is, aside from various short-term effects from autonomous changes to the Fed's balance sheet) are loans from the Fed or the Fed's purchases of financial assets either outright or in repurchase agreements. Further, the Fed normally purchases Treasury securities or requires Treasury securities as collateral for repurchase agreements. (In the aftermath of the global crisis, the Fed has engaged in highly unusual purchases of a wider variety of assets and has lent against various kinds of assets.) Since existing Treasury securities were issued as a result of a previous government budget deficit, it is the case that the reserve balances required to purchase Treasury securities are the result of a previous government deficit or a loan from the Fed to the nongovernment sector. This is true even though the Treasury must have a positive balance in its account before it can spend, and even though the Fed is legally prohibited from providing the Treasury with overdrafts in its account.

Finally, note that

1. If interest is paid on reserve balances at the Fed's target rate and substantial excess reserve balances are left circulating – as was the case after the crisis when the Fed engaged in several phases of "Quantitative Easing" – the analysis is unchanged. While the Fed would not have to actively engage in operations specifically related to Treasury auctions for the purpose of achieving and maintaining its target rate, the reserve balances already circulating were created via Fed lending to the private sector (or purchases of private sector securities) or previous deficits.
2. Overall, adding the rule that the Treasury must finance its operations in the open market to the need to achieve timeliness in the Fed's operations results in the six transactions described above for the Treasury's debt operations. The added complexity in the Treasury's operations that results is unnecessary since it does not change the facts that (1) reserve balances must be provided via previous deficits or Fed loans to the private sector in order for Treasury auctions to settle, and (2) deficits accompanied by new issues of Treasury securities do not result in fewer deposits circulating than without such security issuance. Further, the rule itself and the added complexity can be counterproductive if they influence policymakers' decisions regarding options available in times of macroeconomic difficulty.

In sum: even after adding the self-imposed constraints and going through the minute details of Fed–Treasury operations, we find that the basic claims made in the much simplified model hold. Government deficit spending adds to the bank deposits of the recipient. Initially, bank reserves are created, but excess reserves are (normally) exchanged for Treasuries. Net financial assets held in the private sector are increased by the amount of the deficit (bank deposits held are equal to bank deposits owed by banks, so the net financial assets are equal to the Treasuries held by banks, plus any additional reserves or cash retained). (See also section 5 of Chapter 7 for discussion of the debt limit debate – another self-imposed constraint.)

Box Frequently asked questions

Q: My understanding of domestic government budget surpluses is that they merely destroy the dollars that earlier government spending created. Isn't it meaningless to suggest that a sovereign government "saves" its own fiat currency?

A: In practical terms, yes. In the United States during the Clinton boom there was a projection that all outstanding US Treasury debt would be retired. This led to a mad rush at the Fed to figure out how the federal government could continue to run surpluses if there were no government IOUs out there to "destroy". If we ever did get to that point, the only way the private sector could continue to run deficits against the government would be to surrender assets (rather than government IOUs) in payment. You'd have to turn over your car, house, bank account, and children to the government to pay taxes! That is the logical result of a government surplus carried to infinity: government would accumulate infinite claims on the private sector. And, yes, you are correct that sovereign government does not – cannot – "save" its own currency.

3.8 Conclusions on the central bank and treasury roles

As discussed above, our critics seize on the simplifying assumption we often begin with, in which we consolidate the central bank and treasury. We then drop the assumption to address the roles played by each. That complicates but does not change the logic that sovereign government needs to spend before taxes are paid.

There is a symmetry between the way government spends and the way banks lend. Government needs to spend (or lend) currency before taxpayers can use currency to pay taxes. Banks need to lend deposits before debtors to banks can repay loans using deposits. In the past, the government's treasury alone handled the operations associated with

fiscal policy. It literally spent currency and then collected it in taxes. Modern governments have divided responsibilities between the treasury and the government's bank, the central bank. The government's bank makes and receives payments for government. Treasury still issues some of the currency, but most of it comes from the central bank (Federal Reserve notes).

Most Treasury payments are made by checks or by credits to bank accounts – just like firms and households make most payments by check (or direct deductions).

Central banks have a second function that has come to dominate the thinking of most observers: they are the bank for banks – running the payments system and maintaining par clearing.

These two functions are linked on the balance sheet of the central bank. We could separate out the fiscal policy operations and have the treasury do all of them. The complication is that then private banks would need to have accounts at the treasury – so that treasury could make payments directly to their accounts and deduct those accounts when taxes are paid. Banks would still need accounts at the central bank for clearing with each other.

So if we really did "deconsolidate" the Fed and Treasury, banks would have to have accounts at both. It would "work", but why bother? Why not continue with the Fed acting as the Treasury's bank and also as the bankers' bank? Oh, but it is just so confusing! You mean the Fed serves two functions? It is the bankers' bank and the government's bank? If economists could get their minds around this, they'd stop worrying about the internal record keeping between the Fed and Treasury.

The Fed and Treasury know what they're doing. How do we know? Checks are not bouncing and the Fed is hitting its rate target. If the Treasury's checks start bouncing, we'll know it is time for Congress to step in and give the Fed's Chair a good talking-to. Until then, I guess the deconsolidators will just need to hold their breath.

Also note that there are approximately 40 primary dealers that are required to bid competitively for Treasury securities, which keeps rates as low as possible. The dealers do this mainly because their clients will deal only with primary dealers. This means that Treasury can always sell securities and can always get deposits at the Fed in order to spend. The self-imposed "constraints" are not a constraint. There are no "bond vigilantes" who might prevent Uncle Sam from spending by refusing to lend to him.