3. Money and the State, the US Case

Last time I painted a picture of private money and private credit, a picture in which the central bank appears as a **banker's bank**. Today I want to bring the state back in, and with it the conception of the central bank as a **government bank**. And I'm going to do it taking American monetary history as my subject, and using the balance sheet apparatus we have been starting to build up, so that we understand the government as just another balance sheet. American monetary history is a fairly wild story; I will largely leave aside for today the whole issue of the money standard—gold, silver, or fiat—but we will come back to it after the midterm.

I want to begin with the picture Young provides of the structure of the national banking system in the years before the establishment of the Fed (p. 302).[1] We are going to ask where this system came from and why and how it got replaced by the Federal Reserve system. As we shall see, it is a story of war finance in the Civil War, when the North fought the South, as well as lots of political constraints given American antipathy for central banking. Note that before the Fed there was no official central bank, but there was a collection of New York banks that operate informally as such for their members. Behind the scenes are Big Finance and Big Government, the two big bogeymen of American monetary experience, and the populist agitation for easy money for themselves, not Wall Street and not Washington.

It is a story in three acts:

Act 1:	**Civil War Finance**	**Greenback Era**
Act 2:	**National Banking System**	**currency principle, scarce money**
Act 3:	**Federal Reserve System**	**banking principle, elastic credit**

During wartime, the problem of any government is to raise as much money as it can, first through taxation and then by borrowing in anticipation of future tax receipts. Borrowing means selling new government bonds to the private sector. The way this happens is as follows:

Government		Private Sector		Banking Sector	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
+deposits, G	+bonds	-deposits, PS +bonds			-deposits, PS +deposits, G

Here I am showing the private sector buying bonds from the government by writing a check on their bank accounts. The effect of that check is to transfer the deposit account from the private sector to the government, so that at the end of the day the government has more money to spend for the war. Note how every entry in the table appears twice. The new bonds enter as a new

[1] For details see Wesley C. Mitchell, The Greenbacks; and Allyn Young, Chaps. 31-34 in "Commerce: The Marketplace of the World", 1924. Reprinted as pp. 265-321 in Mehrling and Sandilands, ed. Money and Growth, Routledge 1999.

liability of the government and a new asset of the private sector. Deposits are similarly an asset of the government or private sector and a liability of the banking sector, so payment for the bonds enters as a reduction in both private sector assets and banking sector liabilities, and as an increase in both government assets and banking sector liabilities. In the banking sector, total deposit liabilities remain unchanged; all that has happened is the bank now owes the government what it used to owe the private sector.

That is how things work when the government is able to issue bonds and sell them to the private sector. But in war time, that might not be enough. The private sector may simply refuse to lend, or lend only at an unacceptably high rate. In that case, the temptation is always to sell the bonds directly to the bank, bypassing the private sector entirely. After all, what the government needs is a bank deposit, so why not simply swap IOUs with the banking system as follows:

Government		Private Sector		Banking Sector	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
+deposits, G	+bonds			+bonds	+deposits, G

In this case the banking sector is directly funding the government, not just transferring funds it is holding for the private sector. And it is funding the government by expanding the supply of money. How so? When the banking system swaps IOUs with the government, it expands both sides of its balance sheet, so total deposit liabilities increase.

The story of Civil War finance begins with just such an operation. The overriding theme of Young's discussion is the maximal use of existing money and credit institutions in order to finance pressing war needs, so testing the limits of those institutions. The resulting stress proved too much, with the result that the entire banking system broke free of gold and only returned 17 years later in 1878. One way to understand the economics involved is to follow closely the moves made by Salmon P. Chase, Secretary of the Treasury.

Act 1: War and Aftermath. First, in August 1861, he took out a big bank loan and then withdrew the proceeds, hence gaining control of the banking system's gold for his own war purposes (see p. 281). This allowed the North to buy needed material from abroad, while the South was forced to rely on barter for cotton exports. But it also forced suspension of specie payments domestically. Let's see how that worked.

The Loan

Banking System			Treasury	
Assets	Liabilities		Assets	Liabilities
Gold +Loan, $150	+Deposit, $150		+Deposit, $150	+Loan, $150

Note here how the government loan is made initially by expanding the bank balance sheet on both sides, and the government balance sheet as well. I like to call this "swapping IOUs", and

consider such a swap to be the essence of banking, at the heart of the apparently alchemical ability of banking to create money from thin air.

What Salmon P. Chase did next was not to spend the deposit, which would merely have transferred it to someone else, but rather to withdraw it in gold.

The Withdrawal

Banking System			Treasury	
Assets	Liabilities		Assets	Liabilities
Loan -Gold	 -Deposit		+Gold -Deposit	Loan

Note that when the government withdraws the deposit, the banking system loses its accumulated gold. Once the banking system has no more gold, its promises to pay gold (its deposits) lose their credibility, and banks accordingly "suspend convertibility". Deposits are no longer promises to pay gold, so what are they?

The answer comes in Salmon Chase's next move; bank deposits become promises to pay government issued legal tender. In 1862, because of the weak market for government bonds (on account of risk, possibly overestimated, but then the banks had been burned once already), the government decided not to try to issue marketable bonds but rather to rely on legal tender note issues.[2]

Government		Business		Banking System	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
+war goods	+legal tenders, $400 MM	-war goods +legal tenders -legal tenders, $100 +deposits, $100		 +legal tenders, $100 MM	 +deposits, $100

Essentially what the government did was to insert legal tenders between gold and bank deposits in the hierarchy of money. At the same time it broke the connection between the dollar and gold, since the legal tenders were not a promise to pay any specific quantity of gold. Over

[2] I am deliberately using the term "legal tender" rather than "fiat money" in order to emphasize that the notes were liabilities that were expected to be redeemable at some future date in gold. The economics of the Greenback Era was analyzed by Wesley Clair Mitchell in his famous book A History of the Greenbacks (1903). Mitchell was a student of Laughlin, friend of Young, prof at Columbia where he taught a famous course "Types of Economic Theory".

the course of the war, the legal tenders depreciated against gold.[3] That means it took more and more dollars to buy the same quantity of gold, and hence also more and more dollars to buy gold-priced imports. At the same time, inside the US, it took more and more dollars to buy the same quantity of domestic goods (inflation). Legal tender money lost value not only against the better gold money, but also against non-money commodities.

Even after the war was over, it was many years before resumption of the gold standard. Eventually the North possessed the creditworthiness required to float bonds. Once it did, bonds could be issued to buy gold, and that gold was used to retire legal tenders. The retirement of legal tenders brought the dollar back to its prewar gold parity, and also deflated domestic prices to prewar levels.

Young makes a big point of how expensive it was to finance the war in this way. The legal tenders bought only 50 cents worth of gold during the war but were redeemed at par afterward. It would have been much cheaper if we could have financed the war by issuing bonds. (We also could have avoided the politically and economically damaging effects of shifts of wealth between creditors and debtors caused by inflation and then deflation.) In this respect, civil war finance compares unfavorably to the finance of WWI and WWII. In each case, the government once again used the money and credit system maximally to finance its operations, but in each succeeding case the system was more developed than in the last. Thus in each succeeding case the system not only provided more finance but also did so without so much inflation.

Act 2: National Banking. Here the theme is the stress caused by seasonal expansion and contraction of private credit on a fixed note basis.

The National Banking System was established in 1863 during the Civil War as another of Chase's attempts to secure wartime finance. The overriding idea was to strengthen the market for government bonds. But the lasting effect was to fix the money supply.[4]

Chase's idea was to issue a special class of bonds that could be used to back the bank note issue, while at the same time putting in place measures (taxes) that eliminated other potentially competitive note issues. Let's see how that worked in detail. The initial bond issue can be thought of simply as a swap of IOUs with the banking system. This time however it would do no good to withdraw deposits because the banking system has no gold reserves left. Instead the banks were given the right to issue bank notes. Here is the initial swap.

Before

Banking System			Government	
Assets	Liabilities		Assets	Liabilities
+2% Bond	+Deposit		+Deposit	+2% Bond

You might wonder why the banking system would willingly engage in this swap, since it is getting only 2% interest, well below the market rate. The answer is that it has the right to issue bank note liabilities that pay 0% interest, so the difference is profit. Now, when government

[3] Mitchell explains this depreciation as a matter of market expectations about the probability of future return to convertibility, expectations that shifted whenever the North won or lost a battle.

[4] Historians have found that note issue never reached the level of outstanding bonds, so in principle it would have been possible for banks to issue more notes as needed. The point is that they didn't, so inelasticity was the problem.

pays out the deposits, the bank has the right to pay using bank notes that are its own liability. The bank would of course prefer to back its notes with even higher yielding bonds, but the government took care of that by imposing a tax on all note issues that were backed by anything other than these special 2% bonds.

After

Banking System		Private Sector		Government	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
2% Bond	-Deposits +Bank Notes	-war goods +bank notes		-Deposits +war goods	2% Bond

The balance sheets show the end result. This third strategy for government purchase of war goods is financed by an expansion of private money (the bank notes), which are promises to pay the new standard money (legal tenders) not gold.

I want to now focus on the unintended consequence of this operation, once the war was over and legal tenders were retired, which was a *very inelastic money issue* because the collection of bonds that could be used to back notes was not increased except by special measure. There was also very inelastic reserves, indeed perversely elastic because of the reserve requirements, 25% for central city all in cash, 25% for middling cities partly in central city reserves, and 15% for country partly in central city reserves. Already in 1873 the country experienced the first of a series of financial crises, all of which followed a similar pattern.[5]

In slack times the farm banks would find themselves with excess funds for which they could find no local outlet. They might use them to buy a security (bond) but they had always to keep in mind that they would need the funds come fall. So they tended to deposit the funds in New York where they could earn interest. New York banks would therefore find themselves with excess funds, which they also knew were only seasonal, so they wanted a short term investment. They would buy liquid securities or make short term loans. Of particular interest is the phenomenon of the call loan made to stock market speculators. Thus in slack periods (late winter) we might find something like what Young shows (p. 302), where country banks have excess reserves. He mentions the number 50 million as the withdrawal at harvest time, which note is pretty close to the excess 2% reserves. At harvest time there is a cash drain from the system, and that means a cash drain from New York, which New York seeks to remedy by calling in loans and raising reserves from abroad.

Thus the cash drain spread into the stock market, causing selling by those who were using call loans to finance their speculative positions. And it spread to the international money market, pulling in gold from London. The consequence was a very definite seasonal pattern in interest rates, as the harvest expansion of credit took place on a fixed reserve basis. The result was not only a seasonal interest rate but also periodic financial crises, caused whenever banks had to make cash payments but lacked the cash to do so. Young makes the correct point that the problem was the inelasticity of reserves. If somehow reserves could be reduced in slack times

[5] The classic reference is OMW Sprague History of Crises under the National Banking System (1910).

and expanded in tight times, the problem could be solved. How to make reserves elastic? The answer was to make reserves a form of credit.

Act 3: Federal Reserve System. What the banking system needed in times of tight money was a temporary increase in reserves (for the farm banks) and a temporary increase in cash (for circulation purposes). Under the National Banking System, typically some kind of stopgap measure would be worked out, involving an expansion of quasi-cash in the form of clearinghouse certificates issued by a consortium of New York banks. If banks agree to accept these certificates among themselves, then for practical purposes these certificates are reserves. The effect was therefore to free up cash for general circulation. After the crisis of 1907, the Aldrich Vreeland Act of 1908 created the legal basis for these ad hoc measures, but more was needed.

The Federal Reserve system routinized the private solution to both problems. Under the national banking system, the quantity of cash was fixed. Under the Federal Reserve System it became elastic. The way it was supposed to work was that banks could take certain kinds of loans (so-called real bills) to their local Federal Reserve bank and "discount" them for Federal Reserve bank notes that could be used in circulation. The various reserve banks could also discount at the Fed itself to get Federal Reserve notes which were legal as well as economic reserve. Shifts in demand as between deposits and cash could thus raise no problems; also cash drains into circulation would raise no problems; and total reserves could also fluctuate elastically.

Member Bank		Federal Reserve Bank		Federal Reserve	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
+loan	+deposit	2% bonds	FR bank notes	gold	
+FR deposit	+discount	+discount	+FR deposit		
		+FR notes	+rediscount	+rediscount	+FR notes

The key to all this was supposed to be the discount mechanism, and hence also the discount rate. The idea was that member banks could always get whatever reserves they needed simply by presenting one of their eligible loans to the local FRB for discount. In turn the FRB could itself always rediscount for Federal Reserve notes. If the amount of new discounts exceeded the repayment of existing discounts, then total reserves would expand. If repayment exceeded new discounts, then reserves could shrink. No longer would the system spend half the time with too much reserve (fuelling speculation) and half the time with too little (risking financial crisis). Reserves would always be just right.

But WWI intervened. Instead of real bills, the central bank got stuffed with government paper. In fact, the Fed served as prime dealer for distributing government bonds, taking onto its own balance sheet whatever the private banking system and private bondholders would not absorb. After the war, instead of the planned elasticity driven by demand for discount of private credit,

the Fed used "open market operations", outright purchase and sale of government securities, to adjust money supply to money demand.

Conclusion. The monetary system is a hybrid system, comprised of both private money (bank deposits) and public money (currency). The central bank is also a hybrid entity, both bankers' bank and government bank. It is possible in principle to build a monetary theory around either one of these dimensions, focusing on either the private dimension or the state dimension, and treating the other as subsidiary. But any such theory is only partial since it misses the true hybrid character of the system.

The story of American monetary history is a story of getting the public/private balance right. It took a while, and indeed is still ongoing. The story of the development of monetary thought is similarly a story of getting the balance between these two dimensions right in order to capture the true dynamics of the system at any point in time. Sometimes the state dimension is dominant (war time) and sometimes the private dimension is dominant, but all the time both dimensions are present.