

## Working with t-accounts (Money Creation)

Econ 202/Haworth

This handout intends to prepare you to work with t-accounts when you're in the Money creation section. Note that banks can use money that is deposited in them. Quite obviously, a bank clearly needs to make sure you can get that money whenever you want it though, or else people would not deposit their money with you (and the bank would go out of business). Let's now define a few of the terms you'll be working with in this section.

- **Demand Deposits:** this is money you deposit in a checking account. This money is a liability for the bank in that they have to give this money back to you whenever you "demand" it from them (hence the name demand deposits). Banks can also use some of this money to make loans or buy assets – under the assumption that lots of people won't suddenly demand all of their money back.
- **Required Reserve Ratio:** this is the % of demand deposits (DD) that must be held as something called required reserves.
- **Required Reserves:** determined by the Required Reserve ratio, this includes money held by the bank which cannot be loaned out or used in the purchase of some other asset (i.e. money that the bank is required to hold). Because this is represented as "money in the vault", it is considered an asset for the bank, even though it cannot be used.
- **Excess Reserves:** this is money held by the bank which can be loaned out or used to buy some other asset. any reserves that are in excess of the required reserves are considered excess reserves. This is the money banks use to make loans, invest in other assets, etc., or they can also just let it sit in the vault. This money is considered an asset by the bank.
- **Total Reserves:** this is simply the sum of all required reserves (RR) and excess reserves (ER). I.e.,  $\text{Total Reserves} = \text{RR} + \text{ER}$ .
- **Loans:** self-explanatory, but this is money that banks have loaned out. Although any loan to a customer of the bank is considered a liability for that individual, loans are an asset for the bank.
- **Bonds:** we'll restrict bonds to be the same government securities we discussed in the fiscal policy section (e.g. savings bonds). When banks purchase bonds from the bond market (note that they are purchasing bonds from the market, not issuing bonds as we discussed before), they are buying an asset. If banks sell bonds, then banks are selling those bonds in the bond market and they are selling an asset (obviously in exchange for cash, which would become reserves once that cash arrives at the bank).

Next, we apply all of this to work with what we would call t-accounts in an accounting class.

T-accounts illustrate a relationship between assets and liabilities, where we assume that the overall monetary value of our assets is the same as the overall monetary value of our liabilities. In other words,  $\text{Assets (A)} = \text{Liabilities (L)}$ .

Once again, from the perspective of the bank, any money held in a demand deposit (checking account) represents a liability to the bank. If a bank had \$5000 in demand deposits (DD), then we would place that entry on the right-hand side of our t-account (see below).

Assets	Liabilities
\$500 RR	DD \$5000
\$4500 ER	

We know that banks are required to hold a certain percentage of their DD as required reserves, and that this is determined by the required reserve ratio. Let's assume that this ratio is 10%. That means this bank will have \$500 in required reserves (RR). RR are an asset to the bank, and so we include the \$500 RR entry on the left-hand side of the t-account (above). Knowing that  $A = L$ , we know that the right-hand side of this t-account must sum to the same amount as the left-hand side of the t-account. As we have \$5000 in liabilities, there must be \$5000 in overall assets, so we know that if the only remaining asset is excess reserves (ER), we must have  $ER = 4500$ .

What if this bank decides to use some of those reserves to purchase other assets, like bonds. E.g., assume that this bank decides to purchase \$2000 in bonds. In that case, we would see ER decrease by \$2000 and bonds (B) increase by \$2000. The result of these changes is illustrated in the t-account below.

Assets	Liabilities
\$500 RR	DD \$5000
\$2500 ER	
\$2000 B	

What if the bank decides to make a \$2000 loan? Loans (L) are an asset, just as ER is an asset, so we would see an increase in L of \$2000, and another decrease in ER by \$2000. The end result of those changes are portrayed in the t-account below.

Assets	Liabilities
\$500 RR	DD \$5000
\$500 ER	
\$2000 B	
\$2000 L	

Notice that in each of these cases, our t-account always reflected that  $A = L$ .