Chapter 7: Money and Banking

7.6 Creation of Money by the Banks

- To understand how banks create money, we must first understand how to read its balance sheet.
  - **Assets**, the part of a company’s balance sheet that represents what it owns or what is owed to it, are recorded in the right column.
    - Assets are listed in order of liquidity (closeness to cash).
  - **Liabilities**, the part of a company’s balance sheet that represents what it owes, are recorded in the left column.
  - **Net worth**, also called equity, is calculated by subtracting the total liabilities from the total assets of a company.

- In order to understand how bank deposit money is created in a banking system, we will look at the operations of a fake bank serving an isolated community.

### Balance Sheet of Goliath National Bank Ltd.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities and Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserves $10 000</td>
<td>Demand deposits $100 000</td>
</tr>
<tr>
<td>Loans to customers $60 000</td>
<td>Shareholders’ equity 20 000</td>
</tr>
<tr>
<td>Securities $30 000</td>
<td></td>
</tr>
<tr>
<td>Fixed assets $20 000</td>
<td></td>
</tr>
<tr>
<td><strong>$120 000</strong></td>
<td><strong>$120 000</strong></td>
</tr>
</tbody>
</table>

**Sample Bookkeeping Operations**

- Every transaction involves two entries (sometimes one each column, sometimes two in the same).
- Ted, a customer of the bank, deposits $200 cash in the bank. Reserves (A) increase by $200. Ted’s own bank balance also increases by $200. Since the bank now owes Ted $200, this becomes a liability for the bank, so demand deposits (L) also increase by $200.
- Patrice withdraws $500 from her account. Reserves (A) decrease by $500. The bank no longer owes Patrice this $500, so demand deposits (L) also decrease by $500.
- The bank buys securities for $200. Reserves (A) decrease by $200 and securities (A) increase by $200. Note that both transactions occur in the assets column, but since one increases as another decreases, the net effect on total assets is zero.
- You are granted a loan from a bank. In exchange for your signing of a promissory note, the bank gives you a credit (not generally cash) in your chequing account. The bank has created money, even though you will determine how much of the loan you actually use. On the balance sheet, loans to customers (A) increases and demand deposits (L) increases. Reserves are unaffected.
  - You decided to withdraw some or all of the loan in cash. The bank’s reserves (A) decrease by the amount of the withdrawal and demand deposits (L) decrease by the same amount.
  - You decide to write a cheque to purchase an airline ticket, and the airline company does business with the same bank. Your demand deposit balance (an asset to you) decreases by the amount of the cheque and the demand deposit balance of the airline (an asset to them) increases by the same amount. The total amount of demand deposits and the bank’s reserves remain unchanged.
  - You write a cheque to The Yellow Umbrella Company, who uses a different bank. Their bank will come to your bank for payment of the cheque. The cheque is cleared against your bank, whose reserves (A) decrease along with their demand deposits (L). The other bank’s reserves (A) and demand deposits (L) will increase.
The Money Multiplier

- Target reserves = target reserve ratio X demand deposits
- Assume Goliath National Bank wants to hold a minimum of 10% of its demand deposits in the form of cash reserves and it currently is not operating in excess of this amount. (Demand deposits = $100 000, so reserves = $10 000)
- You find $1000 in your room and deposit it in the bank. Your account increases by $1000 (the bank credits you this amount). The bank reserves now equal $11 000 and demand deposits are $101 000. It’s target reserve is: 0.1 X $101 000 = $10 100, which means it now has excess reserves.
  - Excess reserves = actual reserves – target reserves
    \$900 = $11 000 – $10 100
  - Alternatively: Of the $1000 you deposited, the bank wants to keep on 10% ($100) in its cash reserves, so it has $900 on hand more than it finds necessary.
  - The bank will lend out this money in order to make a return.
- Lily comes to Goliath National Bank for a $900 loan, which increases her chequing account. She buys a car from Mosby Motors, who banks with the Ericson Bank. After clearing the cheque against Goliath, Ericson’s reserves will increase by $900 and it’s demand deposits will increase by $900.
  - The Ericson Bank wishes to keep only 10%, or $90, of this $900 in its reserves, so it has excess reserves of $810 that it can now lend out.
- Robin takes out an $810 loan from the Ericson Bank, which increases her chequing account. She writes a cheque for the full amount to pay off a loan to Barney, who deposits it in his bank, the Bro Bank. The Bro Bank’s balance sheet shows an increase in reserves of $810 and an increase in demand deposits of $810.
  - The Bro Bank wishes to keep 10%, or $81, in its reserves, so it has $729 in excess reserves. The cycle continues.
- Note that while the cash moves between banks, it remains in the banking system.
- Tracking the impact of the initial $1000:

<table>
<thead>
<tr>
<th>Reserves</th>
<th>Loans</th>
<th>Deposits</th>
</tr>
</thead>
</table>
| +1000    | +900  (to Lily)  
          | +810  (to Robin)  
          | +729...       | +1000 (You)  
          | +900 (Mosby Motors) 
          | +810 (Barney)   
          | +729...       |

- As the definition of M1 is currency plus demand deposits, the third column is of most interest to us.
- Imagine the bank system has reserves of $100 000, demand deposits of $1 000 000 (10X of reserves), and loans of $900 000.
  - When you deposit $1000 into the bank, reserves increase to $101 000, demand deposits can potentially increase to $1 010 000 (still 10X), and loans increase to $909 000 (absorbing what would otherwise be excess reserves). This is money creation.
  - The target reserve ratio is still 10% of demand deposits, and demand deposits thus grow to 10X reserves.
- This is the **money multiplier**, which is the increase in total deposits that would occur in the whole banking system as a result of a new deposit in a single bank.
  - Money Multiplier = \( \Delta \text{deposits} \), or Money Multiplier = \( 1 \frac{\Delta \text{reserves}}{\text{target reserve ratio}} \)
  - So, if the target reserve ratio is 10%, the money multiplier = \( 1/0.10 = 10 \). If the target reserve ratio is 5%, the money multiplier = \( 1/0.05 = 20 \).
- The money multiplier does not necessarily work the same for a single bank within the system.
  - Goliath has reserves of $100 and demand deposits of $1000. Tracey deposits cash of $50, so excess reserves are $45 (90% of 50). The money multiplier suggests that Goliath could loan out 10 X 45 = $450, but it simply does not have the reserves if the borrower were to demand the demand deposit in cash.
  - A single bank must limit its loans to the amount of its excess reserves.