Banking and Money Creation

AP Macroeconomics | Unit 4 | T-accounts, reserves, the money multiplier

1. A bank's balance sheet

Assets (what the bank owns)	**Liabilities** (what it owes)
reserves, loans, bonds	demand deposits, owner's equity

A \$1,000 cash deposit: reserves +1,000 (asset), demand deposits +1,000 (liability). With a 10% reserve requirement, **required reserves** are \$100 and **excess reserves** \$900; the bank can lend the excess (fractional reserve banking).

2. Loans create deposits

The \$900 loan is spent and redeposited; the next bank keeps 10% and lends \$810, then \$729, ...: $900 + 810 + 729 + \cdots = \frac{900}{0.10} = \$9{,}000$ of new money.

3. The money multiplier

Money multiplier

$$\text{money multiplier} = \frac{1}{\text{reserve requirement}}, \qquad \max \Delta M = \text{initial excess reserves} \times \text{multiplier}.$$

- **Cash deposit** (\$1,000, rr 10%): the cash was already in M1, so only the \$900 of excess reserves creates money: max $\Delta M = 900 \times 10 = \$9{,}000$.
- **Fed buys a \$1,000 bond from a bank**: \$1,000 of new excess reserves: max $\Delta M = \$10{,}000$.

It is a maximum: banks holding extra reserves and the public holding cash make the actual multiplier smaller.

Example. rr 20%, \$5,000 cash deposit: excess reserves \$4,000, multiplier 5, max $\Delta M = \$20{,}000$.

Where students lose points

1. Multiplying the whole deposit instead of the excess reserves.
2. Counting a cash deposit as new money.
3. Putting deposits on the assets side of the T-account.
4. Using $1/MPS$ (the spending multiplier) instead of $1/rr$.
5. Forgetting that the multiplier gives only a maximum.

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