Monetary System 1

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Outline: Unit III, Section MP1

I. Functions of Money
II. Balance Sheet: Individual Accounting
III. Balance Sheet: Bank Accounting
IV. Intro to Fractional Reserve Banking

I. Functions of Money

- Money = The set of assets that people regularly use to buy goods and services from other people

- Fiat Money vs Commodity Money
  - Gov Decree vs Intrinsic Value
  - US$, pesos, loonie vs gold, silver

Functions of Money

- Medium of Exchange
  - Eliminates “double coincidence of wants” in bartering
  - E.g. Remote parts of Alaska
- Unit of Account
  - Common yardstick => Calculate relative prices
- Store of Value
  - Transfer wealth into future
    - Bitcoin?

Bitcoin Price Chart

1 BTC = 247.5700 USD +0.58000 (0.235%)

Oct 7, 3:05AM GMT

Money Stock or Money Supply

M0	M1	M2
Monetary Base or "high-powered" money		
Currency + Reserves	Currency	Currency
	Demand Deposits	Demand Deposits
	Traveler's Checks	Traveler's Checks
	Other Checkable Deposits	Other Checkable Deposits
		Savings Deposits
E.g. PayPal? credit cards?		MMMF (money market mutual funds)

Liquidity

- Liquidity (of an asset)= Ease and speed with which an asset can be traded for other goods
- Rank in order of highest to lowest liquidity
  - cash
  - real estate
  - stocks
- $3600 per person in cash
  - Foreign countries using US currency
  - Underground Economy

II. Individual Accounting

- Balance Sheet = A financial summary of a person's assets, liabilities, and net worth at a point in time
  - Distinct from an income statement
- A = Assets = Items of value a person owns
- L = Liabilities = Something owed

- NW = A – L => A = L + NW

Individual Balance Sheet

Assets		Liabilities	
Cash	50	1,500	Loans
Checking Account	400	300	Credit Card Debt
Laptop	1,500		
Bicycle	50		
			NW

Hotdog Vendor Balance Sheet

Assets		Liabilities	
Cash	100	50	Loan from friends
Hotdog Cart	100		
			NW

Balance Sheet Exercises

- Consider each one separately:

1. You put $50 cash into checking account

2. You borrow $300 more from the same friend

Hotdog Vendor Balance Sheet

Assets		Liabilities	
Cash	100	50	Loan from friends
Hotdog Cart	100		
			NW

You put $50 cash into checking account

Hotdog Vendor Balance Sheet

Assets		Liabilities	
Cash	100	50	Loan from friends
Hotdog Cart	100		
			NW

You borrow $300 more from the same friend

III. Bank Accounting

- Mr. Cuban wants to start his own bank.

Steps:

1. Mr. Cuban puts up $500 in his own cash
2. Other individuals put $2,000 in cash as deposits
3. The bank loans out $500 to local businesses

Cuban Bank Balance Sheet

Assets	Liabilities
Reserves	Deposits
	NW

Mr. Cuban puts up $500 in his own cash

Other individuals put $2,000 in cash as deposits

Cuban Bank Balance Sheet

Assets		Liabilities	
Reserves	2,500	2,000	Deposits
Loans			
		500	NW

Mr. Cuban puts up $500 in his own cash

Other individuals put $2,000 in cash as deposits

The bank loans out $500 to local businesses

Additional Balance Sheet Practice

- Starting from the previous balance sheet, consider each of the following separately:

1. An individual deposits $5
2. The bank loans out $15 in dollar bills
3. The bank buys $20 of bonds (munis) from the city

Cuban Bank Balance Sheet

Assets		Liabilities	
Reserves	2,000	2,000	Deposits
Loans	500		
		500	NW

An individual deposits $5

Cuban Bank Balance Sheet

Assets		Liabilities	
Reserves	2,000	2,000	Deposits
Loans	500		
		500	NW

The bank loans out $15 in dollar bills

Cuban Bank Balance Sheet

Assets		Liabilities	
Reserves	2,000	2,000	Deposits
Loans	500		
		500	NW

The bank buys $20 of bonds from the city

IV. Fractional Reserve Banking

- Required Reserves (by law)
  - R = Req Res Ratio = $\frac{Req\ Res}{Deposits}$
  - E.g. R = 20%:

  If Dep = 100 => Req Res = R*Dep = 20

- Excess Reserves = Actual Reserves - Required Reserves
  - E = Exc Res Ratio = $\frac{Exc\ Res}{Deposits}$
  - Ben: Satisfy unexpected depositor withdrawals
  - Cost: Reserves earn low interest rates

- Actual Reserves
  - R_A = Act Res Ratio = $\frac{Act\ Res}{Deposits}$
  - R_A = R + E

Cuban Bank Balance Sheet

Assets		Liabilities	
Reserves	2,000	2,000	Deposits
Loans	500		
		500	NW

The bank makes $1,600 worth of new loans.

Cuban Bank Balance Sheet

Assets		Liabilities	
Reserves	400	2,000	Deposits
Loans	500 + 1,600		
		500	NW

The bank makes $1,600 worth of new loans.

Assume that R = 15%, How much are excess reserves?