

Money and Banking Lecture Notes

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What is Money?

Three Principle Functions:

- ▶ Medium of Exchange
 - ▶ Solves “Double Coincidence of Wants” problem
- ▶ Store of Value
- ▶ Unit of Account

What Makes Good Money?

A “good” medium of exchange should have the following characteristics:

- ▶ Easily recognizable and readily acceptable
- ▶ High value relative to weight
- ▶ Divisible
- ▶ Durable
- ▶ Difficult to counterfeit

Some examples from the past: precious metals, shells, beads, etc.

Modern Money

- ▶ Modern money has no intrinsic value
- ▶ Instead, its value is derived from people's willingness to accept it as a medium of exchange
- ▶ Called *Fiat Money*

The Canadian Banking System

Central bank; "Bank of Canada"

Financial Intermediaries: distributing loans and fundings

Two main players:

- ▶ Central Bank
- ▶ Financial Intermediaries - e.g. commercial banks, credit unions, etc.

Bank of Canada

It's not a branch of the government; the governor runs the bank
to collectively manage the financial aspect

- ▶ Owned by the government
- ▶ Operated by an appointed Governor (Mark Carney)
- ▶ Semi-independent from gov't: day-to-day autonomy

Bank of Canada and government relationship
-They only get to appoint the governor of the Bank of Canada

Canada raised interest rates after the financial crisis and an election
- Concern with the price level
- The governor has autonomy

There is complete independence between the government and the central

Functions of BoC

1. Banker to Commercial Banks

- ▶ accepts deposits from commercial banks
- ▶ “lender of last resort”

2. Banker to the Federal Government

- ▶ buys gov't securities, i.e. bonds

Gov collects money and deposits in the Bank of Canada. When the gov needs \$, they write IOUs (bonds) and they give it to the bank and the bank gives them \$ in return. Are you going to say no? Likely not

3. Regulator of the Money Supply

- ▶ Ch. 29

4. Regulator and Supporter of Financial Markets

- ▶ to prevent potentially catastrophic banking system failure

What institutions can avoid economic meltdowns
Financial crisis: failure of regulations

Strict regulations lead to economic stability

Balance Sheet - BoC

TABLE 27-1 Assets and Liabilities of the Bank of Canada, December 2008
(millions of dollars)

Assets		Liabilities	
Government of Canada securities	40 984.8	Notes in circulation	53 731.3
Advances to commercial banks	1 902.3	Government of Canada deposits	23 604.0
Net foreign-currency assets	119.5	Deposits of commercial banks (reserves)	25.9
Other assets	35 576.9	Other liabilities and capital	1 222.3
Total	<u>78 583.5</u>	Total	<u>78 583.5</u>

Commercial Banks

- ▶ privately owned, profit-seeking institution
- ▶ main function: accepts deposits and makes loans
- ▶ solves major information friction in savings/investment markets
 - ▶ acts as an intermediary between those who have funds and those who need funds
 - ▶ credit is required for:
 - ▶ large household purchases - e.g. homes
 - ▶ investment by firms

Reserves

- ▶ Banks must have money on hand in case depositors want to make a withdrawal
- ▶ How much do they need?
 - ▶ Only a fraction
- ▶ What if they don't have enough?
 - ▶ lender of last resort
 - ▶ CDIC

Fractional Reserve System

Target & Excess Reserves

- ▶ reserve ratio - fraction of its deposits that a commercial bank holds as reserves
 - ▶ reserves are held in the form of **cash** or **deposits with the central bank**
- ▶ target reserve ratio - fraction of its deposits that a bank wants to hold as reserves
- ▶ excess reserves - deposits in excess of the target reserve ratio

Balance Sheet - Commercial Banks

TABLE 27-2 Consolidated Balance Sheet of the Canadian Chartered Banks, December 2008 (millions of dollars)

Assets		Liabilities	
Reserves (including deposits with Bank of Canada)	5 980	Chequable deposits	257 436
Government of Canada securities	242 942	Savings deposits	509 000
Mortgage and non-mortgage loans	1 105 410	Time deposits	350 086
Canadian securities (corporate and provincial and municipal governments)	181 094	Government of Canada deposits	4 676
Foreign-currency assets	1 341 636	Foreign-currency liabilities	1 334 998
Other assets	305 165	Shareholders' equity	141 721
Total	3 182 227	Other liabilities	584 310
		Total	3 182 227

Money Creation

Commercial banks “create” money by lending out deposits

Assumptions:

1. Fixed target reserve ratio
2. No “cash drain”

Immediately deposit all of the money rather than a ratio of it

New Deposits

Money from outside the system into the system (the money is new since it has been circulated)

A new deposit occurs for one of three reasons:

1. An individual may immigrate and deposit their cash in a Canadian bank
2. An individual may have cash “hidden under their bed”
3. The BoC purchases gov't bonds from a firm or individual.

Money is then deposited in a commercial bank Important in monetary policy
The money that the Bank of Canada holds is not circulating

Money Creation

Initial Balance Sheet - Target Reserve Ratio = 20%

Other reserves refer to the currency and the deposits of the Bank of Canada

Assets		Liabilities	
Cash and other reserves	200	Deposits	1000
Loans	900	Capital	100
	<u>1100</u>		<u>1100</u>

Money Creation

Deposit of \$100 increases deposits and reserves - reserve ratio now 27%

Assets		Liabilities	
Cash and other reserves	300	Deposits	1100
Loans	900	Capital	100
	<u>1200</u>		<u>1200</u>

Money Creation

Bank loans out excess reserves - restores reserve ratio to target

Assets		Liabilities	
Cash and other reserves	220	Deposits	1100
Loans	980	Capital	100
	<u>1200</u>		<u>1200</u>

Money Creation

New loan is deposited at another bank - process starts anew

Assets		Liabilities	
Cash and other reserves	+16	Deposits	+80
Loans	+64	Capital	+0
	<u>+80</u>		<u>80</u>

Money Creation

Deposit and Loan Cycle goes on indefinitely

TABLE 27-7 The Sequence of Loans and Deposits After a Single New Deposit of \$100

Bank	New Deposits	New Loans	Addition to Reserves
TD	100.00	80.00	20.00
2nd-round bank	80.00	64.00	16.00
3rd-round bank	64.00	51.20	12.80
4th-round bank	51.20	40.96	10.24
5th-round bank	40.96	32.77	8.19
6th-round bank	32.77	26.22	6.55
7th-round bank	26.22	20.98	5.24
8th-round bank	20.98	16.78	4.20
9th-round bank	16.78	13.42	3.36
10th-round bank	13.42	10.74	2.68
Total for first 10 rounds	446.33	357.07	89.26
All remaining rounds	53.67	42.93	10.74
Total for banking system	500.00	400.00	100.00

Money Multiplier

- ▶ The initial deposit of \$100 results in a total increase in deposits of \$500
- ▶ It is as if money was created out of thin air
- ▶ Define the reserve ratio

$$v = \frac{\text{Reserves}}{\text{Deposits}}$$

- ▶ We have a simple formula: If v or cash drain is higher, reserve of the bank is higher and the money multiplier will be smaller

$$\Delta \text{Deposits} = \frac{1}{v} \times \text{Initial Deposit}$$

- ▶ Note: the money creation process is partially determined by the behaviour of banks and so is not under the complete control of the BoC

Cash Drain

- ▶ *Cash drain* refers to the situation where households choose to deposit only a fraction of their money and hold the rest in the form of cash
- ▶ Cash drain dampens the money creation process since less money is circulated through the banks
- ▶ Define the currency-deposit ratio: Text

$$c = \frac{\text{Currency}}{\text{Deposits}}$$

- ▶ New formula

$$\Delta \text{Deposits} = \frac{1}{c + v} \times \text{Initial Deposit}$$

Money Supply

- ▶ There are many definitions of the money supply
- ▶ For this course we will use the following:

$$\text{Money Supply} = \text{Currency in Circulation} + \text{Deposits}$$

Currency in circulation that is in the hands of the public