# The Money Market and Monetary Policy

## An Introduction

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# Overview

Roles of Money

Banks, Money, and the Central Bank

References

**The Keynesian Cross was a nice intro to understand equilibrium output and how fiscal policy can work. But we are missing an integral part of the picture:**

***money*.**

# Roles of Money

# Credit, money, and banks are essential to capitalist development

Understanding interactions of households, firms, the government, and the central bank in the money market – through financial institutions – is a key part in understanding economic development and fluctuations.

- People can rearrange *the timing* of their spending by borrowing, lending, investing, and saving.
- While mutual gains exist, there are *conflicts of interests.*
- A principal–agent relationship! The lender (principle) cannot guarantee the behaviour of the borrower (agent).
- To solve this, the lenders usually demands either collateral or lender's own fund in the project.
- As a result, people with limited wealth are sometimes unable to secure loans, or can only do so at higher interest rates.


An example of the role of credit, **asymmetric information**, and trust.

- Chambar, Pakistan. Financial centres of 2,400 farmers growing *Kharif* crops.
- After sowing, they need to buy fertilisers and other inputs, but long time has passed since the last harvest.
- Choices: the JS bank on Hyderabad Road, or 60 informal lenders.
- Only a few gets the loan... at 78% per annum. (compared to 350-650% in .... – charged with criminal usury in 2014)
- Is this profitable for the 60 informal lenders?


Another fun story about credit and trust. On 4 May 1970, an announcement was made on an Irish newspaper:

*"As a result of industrial action by the Irish Bank Officials' Association … it is with regret that these banks must announce the closure of all their offices in the Republic of Ireland … from 1 May, until further notice."*

Banks were closed until six and a half months later.
Did Ireland fall off a financial cliff?

- No, it did not! Ireland continued to grow as before. How??
- **Irish pubs.**
- Everyone's lives revolved around the pubs, and pub owners know them.
- Cheques were accepted although they won't be cleared… soon it became the financial intermediary. **5 billions pound of cheques were written overall for the 6.5 month period.**
- Why would anyone trust the cheques?
- Ireland has 1 pub per 190 inhabitants. The pub owners were "creating money" without knowing it.

# Based on these two stories. What is money?

# From Barter to Money Economy

Before the existence of money, may theories pointed that we hadbarter system: goods and services are exchanged directly for other goods and services.

This offers little for rapid economic expansion that capitalism demands. *Why?*

- Excess or surplus of production
- **Coincidence** of wants

Our anthropologist from LSE – *David Graeber* – suggests that the theory that we replaced barter system by money economy is **not** supported by any evidence! Gift economies were more common (?, ?).

Debates amongst social scientists continue!

# From Barter to Money Economy: cows and cigarettes.

Soon, the money economy began. Money came into existence first as credit when “I owe you one”, became “I owe you one unit of something”. After domestication of farm animals around 9000-6000 BC, cattle and plants were used as money.

These are commodity money. Cigarettes played the same role in certain US prisons.

# Rihanna said “bitch better have my money”

China started the use of coins and, later on, banknotes. Gold and silver were the common mints: silver being popular in the East, and gold in the west. Banknotes happened for last transactions, first appearing as receipts for large deposits in banks.

Then bill of exchange began to spread as world trade intensified. You can deposit money in one town for a bill of exchange, and get the money from another town. Money began to be a medium for storage of value on top of medium of exchange and as a unit of account.

# “Don’t act like you forgot, I call the shots, shots, shots”

- Soon these banknotes are legal tender.
- Private banks were issue banknotes, and England was the first to replace all private-issued banknotes by those printed by the Bank of England in 1694.
- The US Federal Reserve was granted the same right in 1913.
- Soon, central banks are the only ones allowed to issue banknotes.
- These are called fiat money – money that are intrinsically worthless (unless you like to eat paper).

# Crypto-currencies

Have the digital age reinvented money? To an extent...

- By 2000s, most money are existed on bank databases around the world;
- By 2012, a large part of transactions were electronic;
- Bitcoin came into existent in 2008. Distributed through blockchains.
- Now we have thousands of cryptocurrencies.
- And we are still wrapping our heads around it.

# Nonetheless...

They all play the same roles!

1. Medium of exchange: what we use to get goods and services
2. Storage of value: imagine ice-cream as money
3. Unit of account: imagine paying rent the medieval way

# Banks, Money, and the Central Bank

# Back to Chambar, Pakistan!

The profit of the 60 moneylenders depends on three things:

1. The cost of their own borrowing
2. The default rate on the loans of farmers
3. The interest rates they set

This is very similar to the banking business. Commercial banks generally make money through the fact that:

1. The terms of their lending to households and firms are different from their own borrowing
2. The interest they pay on deposits is lower than the interest rate they charge on their loans.

But first, we need to understand the modern concepts of money.

# Money supply

The money market is a complicated world. We have cash, deposits, cheques, debit cards, credit cards, loans, mutual funds, …Economists generally have two categories

1. Base money
2. Broad money

# Base Money

Base money – or *high-powered money* – are all circulating legal tenders. They consist of

1. **Cash**: coins and notes
2. **Bank reserves**: accounts held by commercial banks at the central bank (e.g. BoT). Including the required reserves (1% for Thailand).

We consider the base money as **the money supply** for the rest of the course. Why?

# Base money – the money supply [cont.]

Not all money are legal tenders issued by the central bank. They are money created by the commercial banks through loans. Let us explicitly demonstrate through balance sheets:

Let's assume that Mr. Tyme has 500 dollars in cash and decided to put in Bank $A$. Bank $A$ will decide to put it in its vault, or deposit in their reserve at the Bank of Thailand.

| Bank $A$'s asset | | Bank $A$'s liabilities | |
|---|---|---|---|
| Base money | \$500 | Payable on demand to Tyme | \$500 |

# Base money – the money supply [cont.]

Now let's say Tyme wants to pay his grocer, AuAu, \$100. He told bank $A$ to transfer the money to AuAu's bank, Bank $B$, using a debit card.

| Bank $A$'s asset | | Bank $A$'s liabilities | |
|---|---|---|---|
| Base money | \$400 | Payable on demand to Tyme | \$400 |

| Bank $B$'s asset | | Bank $B$'s liabilities | |
|---|---|---|---|
| Base money | \$100 | Payable on demand to AuAu | \$100 |

The base money – hence the money supply – does **not** change!

# Base money – the money supply [cont.]

Now let's say that AuAu borrows \$500 from her bank $B$. Bank $B$ needs to give AuAu \$600, while she owes Bank $B$ \$500. Explicitly...

| Bank $B$'s asset | | Bank $B$'s liabilities | |
|---|---|---|---|
| Base money | \$100 | Payable on demand to AuAu | \$600 |
| Bank loan | \$500 | | |

Now we have \$500 more in circulation – called bank money, on top of \$100 in base money.

# Base money – the money supply [cont.]

Base money remains important for when (i) customers withdraw cash; and (ii) when Auau wants to spend her loan. Assume that she now hires Tyme as her assistant, and pays him $50.

| Bank *A*'s asset | | Bank *A*'s liabilities | |
|---|---|---|---|
| Base money | $450 | Payable on demand to Tyme | $450 |

| Bank *B*'s asset | | Bank *B*'s liabilities | |
|---|---|---|---|
| Base money | $50 | Payable on demand to AuAu | $550 |
| Bank loan | $500 | | |

# Base money – the money supply [cont.]

A few key points

1. Banks transact between each other, and settle up at the end of each day
2. So everyday, they transfer or receive the **net** amount they have made through transactions
3. They do not need to have legal tenders to cover all the transactions or demand for cash.
4. The need of having legal tenders at hand is even less if Tyme and AuAu are at the same bank.
5. This is why commercial banks fight for larger share of deposits!

# Money creation and broad money

This is how commercial banks and other types of financial institutions can create money out of thin air. Banks make profit through the interest rates charged on these loans to Auau.

If the interest rate agreed upon is 10%, then Bank $B$'s next year liabilities will fall by \$50 (a fall in Auau's deposit).

Base money (excluding legal tender held by banks) plus bank money is called broad money. Broad money is money in the hands of the non-bank public.

# Measuring base and broad money

Based on this rationale, we estimate the base and broad money as followed:

1. Base money: money that can be readily used to engage in transactions

$$\text{Base (narrow) money} = \text{Currency in circulation} + \text{demand deposits}$$

2. Broad money: Base money and other **near monies** (needed to be converted to base money before use).

$$\text{Broad money} = \text{Base money} + \text{savings and time deposits}$$

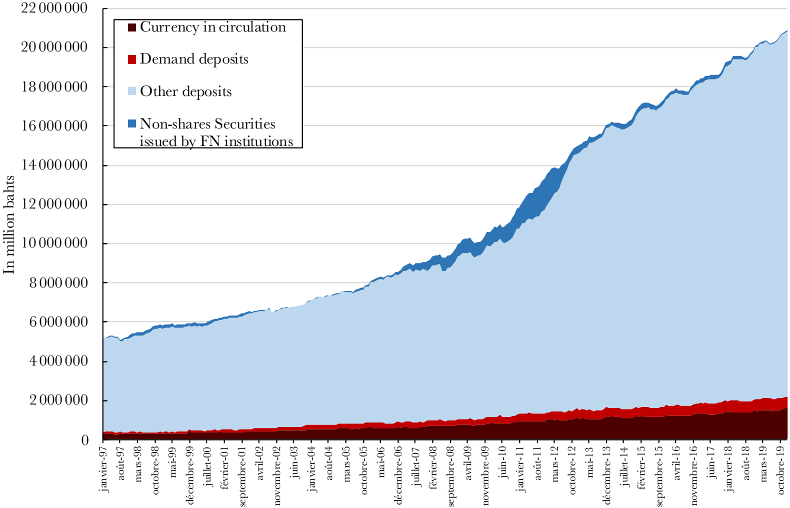
Multiplier is back at it again! Based on this, one unit increase in deposits will lead to an even larger increase in the money supply. Since commercial banks are only legally allowed to keep certain level of reserves (in Thailand it is 1%), banks can lend the rest!

The wheel turns like this:

1. Rin deposits \$100 to Bank $A$. Bank $A$ lends \$99 to Ford.
2. Ford then deposits \$99 to Bank $B$. Bank $B$ lends \$98 to Guy.
3. Guy then deposits \$98 to Bank $C$. Back $C$ lends .......

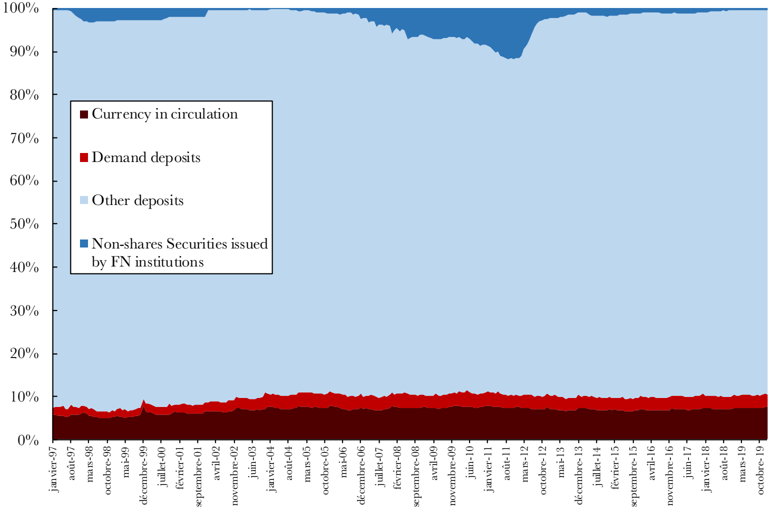
$$\text{Money multiplier} = \frac{1}{\text{Required reserve ratio}}$$

# Thailand's base money and broad money




Source: Lecturer's calculation based on data form the Bank of Thailand.

# Thailand's base money and broad money

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## References

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