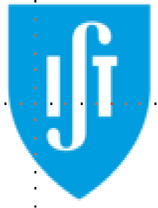


Introdução à Economia/Introductory Economics

4. Banks, money and the credit market; financial crises and globalization

(adapted from CORE, The Economy.

Based on Units 10, 18)

2021/2022

2nd Quarter (P2)

The Context

In most markets, money is the medium of exchange.

- How do banks create money?
- How do banking systems affect individual consumption choices and economic outcomes?
- What are the limitations of the banking system?
- Explain the risks banks face and pose

Money

Money = A medium of exchange used to purchase goods or services

Money allows purchasing power to be transferred among people.

For money to do its work, everyone else must trust that others will accept your money as payment.

Income (flow) and wealth (stock)

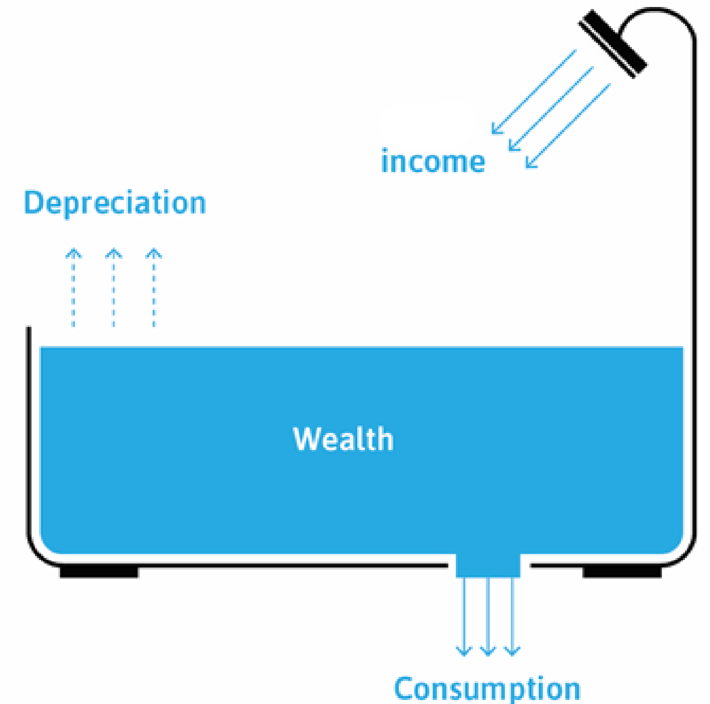
Wealth = Stock of things owned or value of that stock.

= buildings, land, machinery, capital goods – debts owed + debts owed to you

Income = The amount of money one receives over some period of time (flow)

from market earnings, investments, government.

Depreciation = Reduction in the value of a stock of wealth over time.



Consumption over time

There is a trade-off between consuming goods now and later.

The opportunity cost of having more goods now is having fewer goods later.

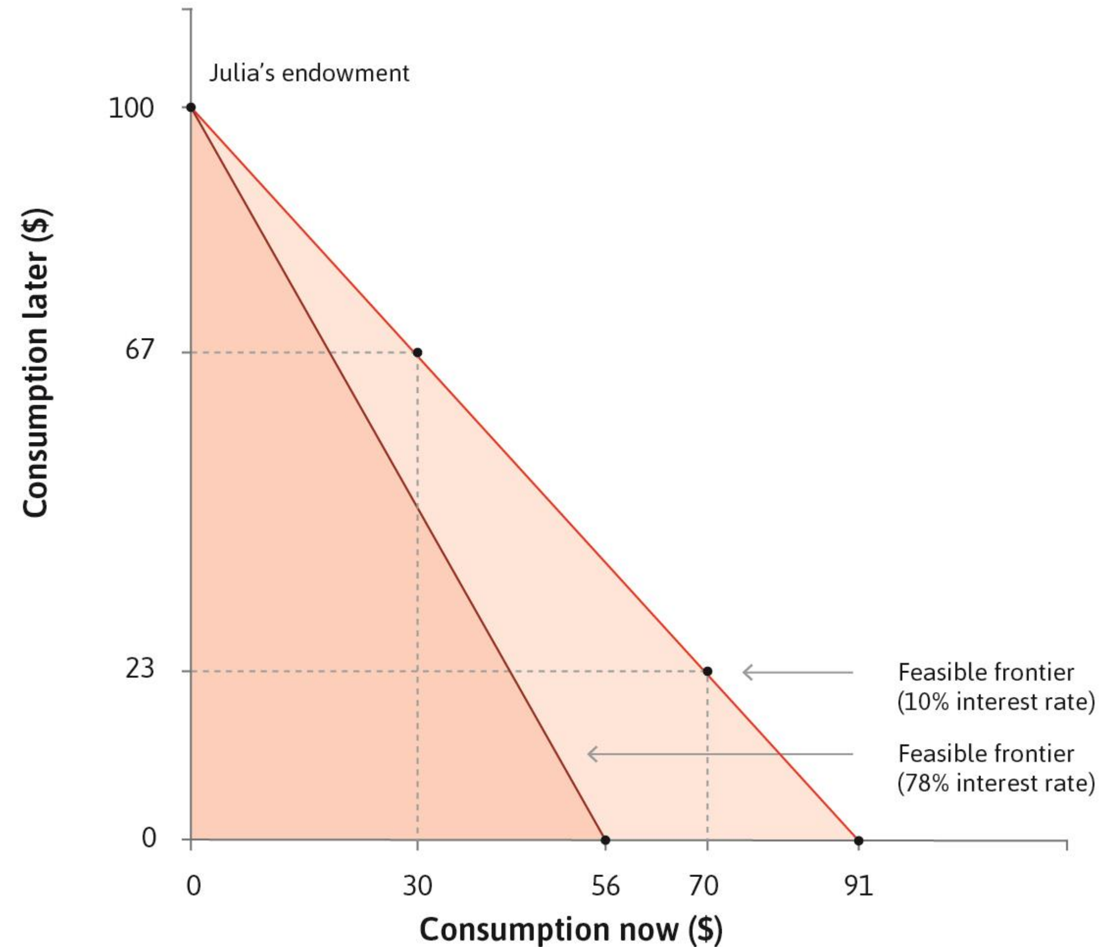
Borrowing and lending allow us to rearrange our capacity to buy goods and services across time

Borrowing

Borrowing allows us to buy more now, at the cost of buying less later.

Interest rate (**r**) = The price of bringing some buying power forward in time.

The higher r, the more future consumption one must give up to have extra consumption now (higher slope in the graph).



Preferences for consumption

Borrowing allows us to bring consumption forward

How much consumption an individual will bring forward depends on:

- **consumption smoothing** (an individual smooths consumption to avoid consuming a lot in one period and little in the other)
- **impatience**
  - myopia (short-sightedness): people experience the present satisfaction more strongly than the same satisfaction later
  - prudence: people know that they may not be around in the future, and so they want to consume now

Optimal decision-making

How much more do you value a good now than later?

Discount rate (ρ) = a measure of a person's impatience.
The individual borrows at the point where discount rate = interest rate

A **saver** smoothes his consumption by postponing it into the future. **Lending** money at interest expands the saver's feasible set, compared to simply storing it.

Banks

A **bank** is a firm that makes profits by lending and borrowing.

Banks borrow from households (**deposits**), other banks, and the central bank.

The interest they pay on deposits is lower than the interest they charge on loans, which is how banks make profits.

Central bank

Base money = notes and coins. Money as legal tender, that is it has to be accepted as payment by law.

The **central bank** is the only bank that can create legal tender

- the central bank is usually owned by the government.
- acts as the banker for the commercial banks, who have accounts at the central bank.
- by crediting these accounts, the central bank can create money.

Bank money

Commercial banks create money by making loans

- this is called bank money ≠ legal tender

Broad money = base money + bank money

Default risk and liquidity risk

Banks provide the service of maturity transformation:

- deposits can be withdrawn at any time
- but loans only need to be repaid after a specified time

And also liquidity transformation:

- deposits are liquid
- loans to borrowers are illiquid

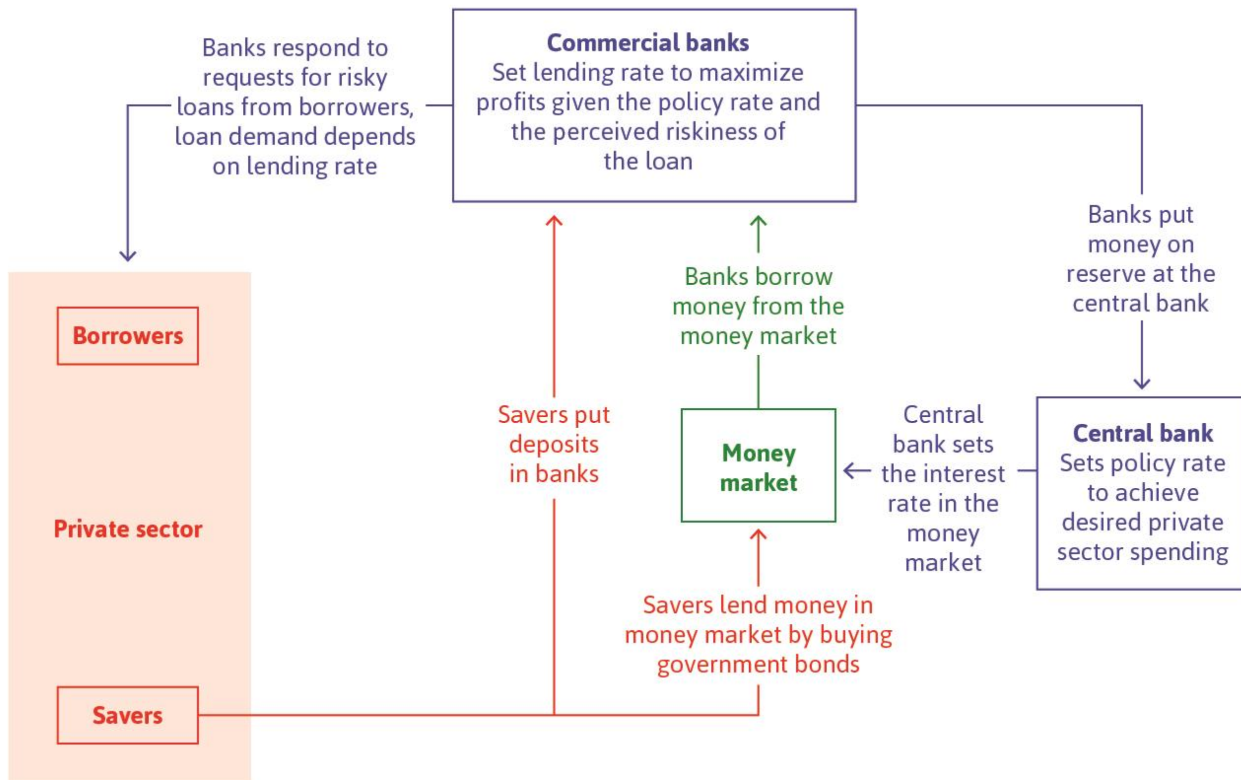
This exposes the bank to risks: **1. Default risk + 2. Liquidity risk**

Banking crisis

Banks make money by lending much more than they hold in legal tender.

Bank run = situation when all depositors demand their money at once; may result in bank failure.
Banks can also fail by making bad investments, such as by giving loans that do not get paid back.
The government may intervene because, unlike the failure of a firm, a banking crisis can bring down the financial system.

The financial system



Banks borrow base money on the **money market** at the short-term interest rate.

Policy interest rate = The interest rate on base money set by the central bank.

Bank lending rate = The average interest rate charged by commercial banks to firms and households.

Bank’s balance sheet

Assets: bank lending

Liabilities: bank borrowing (deposits and other)

Bank’s net worth

Net worth = assets – liabilities

The net worth of a bank is what is owed to the shareholders. It is also called **equity**.

Negative net worth means the bank is **insolvent**.

Policy rate and the economy

The central bank's policy rate affects the level of spending in the economy, because households and firms borrow to spend.

higher interest rate → low spending today

Leverage describes the reliance of a company or individual on debt.

$$leverage = \frac{total\ assets}{net\ worth}$$

Credit rationing and the Principal-agent problem

Principal-agent problem =
a conflict of interest between principal and agent,
about some hidden action or attribute of the agent
that cannot be enforced or guaranteed in a binding contract.
This may lead to credit rationing.

Example: in financing a project lenders face the risk that money borrowed will not be repaid but lack complete information about the project's success or the borrower's effort, so cannot writ a contract that ensures that the project succeeds.

Equity and collateral

To resolve the conflict of interest between the principal (lender) and the agent (borrower):

- **Equity**: the lender may require the borrower to put some of her wealth into the project

- **Collateral**: the borrower has to set aside property that will be transferred to the lender if the loan is not repaid

Credit rationing

Those with less wealth find it more difficult to provide equity or collateral.

Credit rationing = when those with less wealth

- borrow on unfavourable terms compared with those with more wealth (**credit-constrained**)
- or are refused loans entirely (**credit-excluded**)

Lending and inequality

Inequality may increase when some people are in a position to profit by lending money to others.

Credit-rationing increases inequality: people with limited wealth are not able to profit from the investment opportunities that are open to those with more assets.

Globalization

Exchange between parties can be mutually beneficial but conflicts arise over how these gains are distributed.

Globalization: A process by which the economies of the world become more integrated by the freer flow across national boundaries of <u>goods</u>, <u>investment</u>, <u>finance</u>, and <u>labour</u>.

Globalization has effects on:

- International markets for goods and services (trade)
- International capital markets (flows of savings and investment)
- International labour markets (migration)

Integration of Goods Markets

Common measures of globalization:

1. Imports/exports/total trade as a share of GDP
   - Clear upward trend in amount of trade worldwide (except from 1914-1945), with sharp acceleration from 1990s onwards.

2. Reduction in price gaps between countries
   - **Law of One Price** should hold if there are no transport costs or barriers to trade.

Evidence of globalization of goods

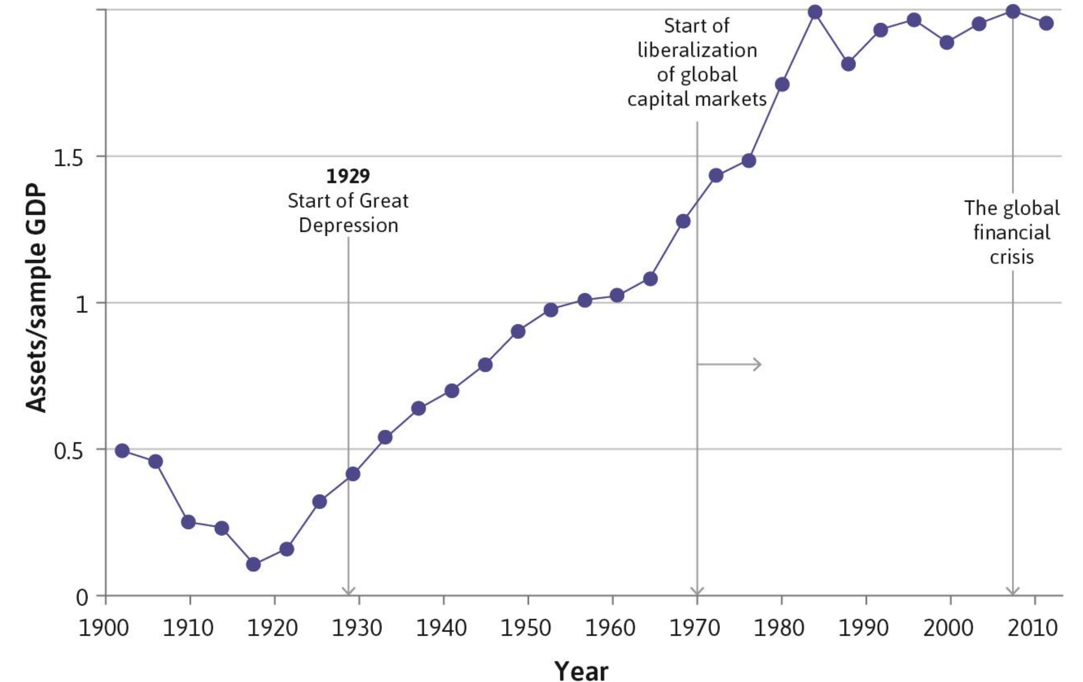
Price gaps between countries have generally declined over time, while the volume of goods traded has generally increased.

Integration of Capital Markets

Countries lend and borrow from each other to finance investment.

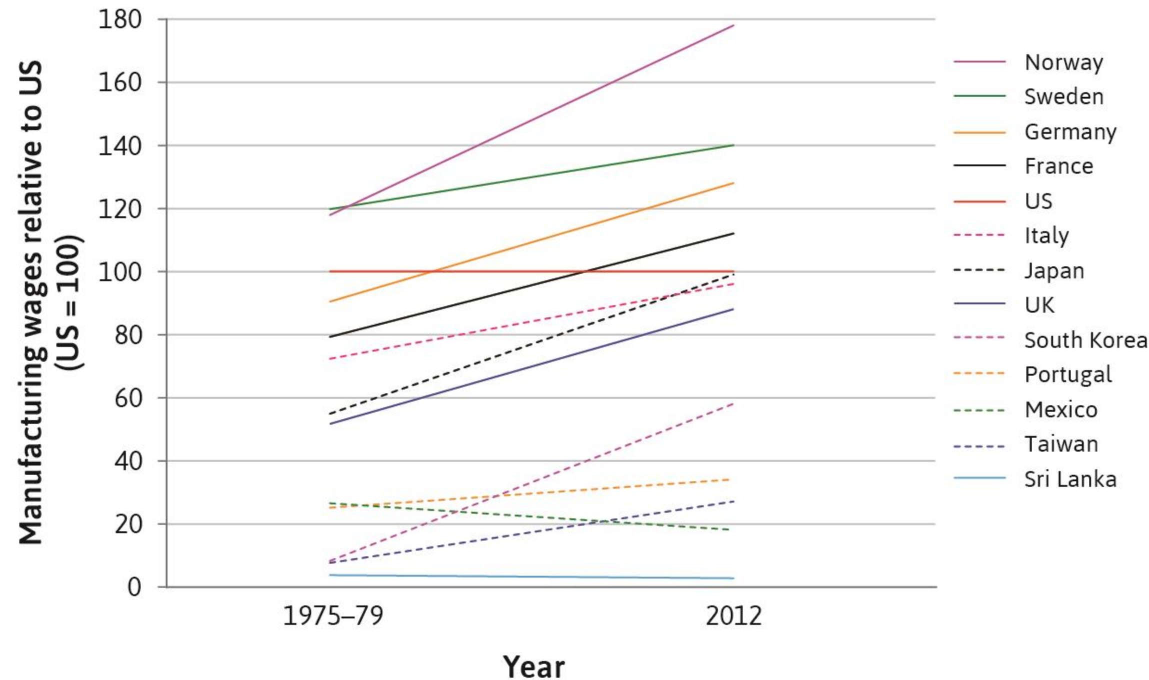
The **balance of payments** records the sources and uses of foreign exchange, which include:

- **Portfolio investment**: buying foreign stocks/bonds
- **Foreign direct investment**: ownership of foreign physical assets



International asset holdings increased over the 20th century.

Integration of labour markets?



Fewer advances in labour market integration than in goods or financial market integration due to immigration barriers. Wages still differ significantly across countries.

Winners and Losers: Short Run

Opening trade increases countries' consumption possibility sets, but conflicts of interest emerge between and within countries.

Winners and losers from trade depend on the relative scarcity of factors (e.g., skilled/unskilled labour, capital):

- Relatively abundant factors within a country are relatively cheap and gain when trade raises their price towards the world average
- Conversely, the price of relatively scarce factors within a country falls towards the world average due to trade

Hypothetical example

There are 2 goods: passenger aircraft (capital-intensive) and consumer electronics (labour-intensive).

The US is relatively capital abundant, whereas China is relatively labour abundant -> specialization according to factor endowments.

- Winners in the US: Owners of capital => inequality should rise
- Winners in China: Workers (higher wages) => inequality should fall

Winners and Losers: Long Run

Specialization according to comparative advantage has similar labour market effects as technological progress (increased productivity), so:

- in the short run, jobs are destroyed
- in the medium run, growth in export industries creates new jobs.

The power of Governments

Governments have additional powers over their national boundaries (comparatively to within their nation):

- Imposition of tariffs: Taxes on imports effectively discriminate against foreign-produced goods
- Immigration policies: Regulate the movement of people between nations, which is not possible within nations
- Capital controls: Limits on the ability of individuals or firms to transfer financial assets among countries
- Monetary policies: Affect the exchange rate and hence the relative price of imported and exported goods

Trade and Growth

Globalization can promote growth:

- Competition with foreign firms accelerates the rate of technological progress
- Economies of scale due to foreign demand allows for lower-cost production, which benefits workers, owners, and buyers

Globalization can also prevent growth:

- Disadvantageous specialization – specializing in low-innovation sectors can slow growth
- **Learning by doing** in **infant industries** – may need temporary tariff protection

Globalization and economic performance

Some countries have benefitted more from globalization than others. Economic success depends on how well policies have managed growth due to economic integration.

Additional Reading

- “Wonking Out: What Vaccine Supply Tells Us About International Trade”.
- Chapter 14, *Foundations of Real-World Economics*, John Komlos, 2nd edition, 2019, Routledge, Taylor and Francis.
- “Cryptocurrencies, an Alternative to Fiat Currencies?”, available in Fenix