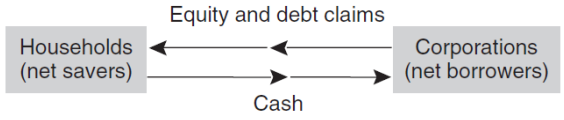
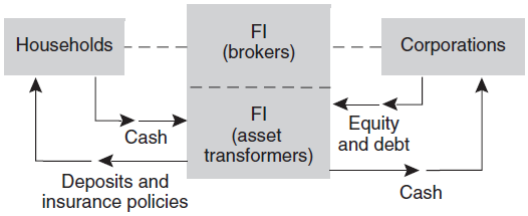
LECTURE 1

How does the investment money get from households to firms?

Households save money and invest, corporations take invested money to produce and sell goods and services. Financial institutions are **intermediaries** which facilitate the connection between corporations and households without the risks associated with **direct financial claims purchases.**

The role of FIs is to channel the funds from those with *surplus* (households) to those with *shortages* (corporations).

WORLD WITHOUT FIs	WORLD WITH FIs
	

Without FIs, fund flows between households and corporation is likely to be low due to:

Monitoring costs (agency problem)	Households seek assurance that corporations they invest in are using funds to make profit. Monitoring is costly in terms of information collection and time consumed → investing becomes less attractive, makes investment riskier	High cost of information collection High chance of broken contracts due to lack of monitoring	Asset transformers take the risk of agency problems and take the task of monitoring the firm. Brokers collect information and provide them to investors at lower costs (economies of scale)
Liquidity risk	Households need liquid assets for everyday use. Direct investments tend to be illiquid, especially without intermediation. Lack of secondary market for household to on-sell securities.	More buy and hold approach, leads to less liquidity Bid-ask spread normally higher for assets sold or bought in small quantities	Brokers facilitate buying and selling of shares Asset transformers diversify withdrawal needs and offer liquid assets to investors
Price risk (risk of price change)	Investors may not be able to sell securities for the same price they were purchased at.	Difficulties to diversify because direct investment in firms needs a certain volume Lower availability of almost risk-free assets	Mutual funds offer diversified and managed portfolios to investors Asset transformers diversify risks inherent in corporate loans and offer safe assets to savers
Maturity mismatch (maturity conflict of interest)	Investors search for a liquid investment with the ability to withdraw money whenever needed. Firms search for long-term loans without the risk of having to repay earlier → conflict of interest	No usage of household's liquidity resources for economic production	Asset transformers provide short-term, liquid investment opportunities to investors Asset transformers provide long term bank loans to firms
Transaction costs	Acquisition of financial assets and the selling process causes costs	Some assets are not available for individual investments due to too large face value Finding a trading partner is difficult, causing less frequent portfolio reallocation Information is costly, leading to lower degree of information prior to investment	Money market mutual funds help investors overcome size constraints and reduce transaction costs Brokers find trading partners and provide cheaper information

The Role of Financial Institutions

FIs as **BROKERS**

- FI acts an AGENT for the SAVER
  - Information + transaction services
  - Possible due to economies of scale in large corporations
- *Reduce transaction and information costs between households and corporations* → ***encourages higher rates of saving***

FIs as **ASSET TRANSFORMERS**

- FIs issue FINANCIAL CLAIMS which are more attractive to households than corporation-issued claims due to lower monitoring, liquidity and price risk
    - FIs purchase financial claims from corporations (primary securities) → finance these purchases by selling financial claims to households (secondary securities)
- Value-added financial products, transformation of financial risk

Other Services of FIs

Transmission of monetary supply	Transmission of monetary policy from central bank to economy. Money creation through credit cycle (lending)
Credit allocation	Provides credit for residential real estate (mortgage) and other personal investments, provides resources for innovation and start-up project financing
Intergenerational wealth transfers	Transfer wealth across generations. Wealth accumulation for retirement (pension funds) and life insurance
Payment services	Non-cash payment methods available i.e. credit and debit cards. Check clearing and wire transfer services
Denomination intermediation	Certificates of Deposit (CDs) and commercial papers often only available in minimum packages, sold in smaller sizes to savers.

Regulation

The failure of a financial institution can result in the breakdown of service provision which is costly to both the sources (households) and users (corporations) of savings. Negative effects and costs to the whole society are not taken into account when shareholders push for the **optimisation of firm value**, resulting in the production of **negative externalities.**

- Regulation attempts to increase social welfare and reduce potential cost of system failure
    - Imposes private costs onto corporations and their shareholders.
- **Net regulatory burden = difference between private cost and private benefit of regulation**

LECTURE 2: INTEREST RATE RISK I

Why does interest rate risk arise?

- Interest rates change
    - Loans of different maturity lengths can also be subject to different rates
- Affects present value of investments
- Fixed vs variable rates

Different measure of the effects of interest rate changes

- Net interest income (NII)
    - Interest earned on income - interest paid on expenses
    - **Repricing model** measures impact of interest rate changes on the NII
- Net worth
    - Equity value
    - Different between market value of assets and liabilities
    - **Duration model** measures impact of interest rate changes on the net worth

Who determines the interest rate changes?

- Reserve Bank
    - Execution of monetary policy and control of money supply
    - Mostly influence the short-term rates but these eventually transfer to long term rates
        - i.e. if short-term rates go down, expectations of longer term rates will likely fall as well
- External markets
    - A closed economy would be easier to predict and control by the Reserve Bank
    - Market integration between countries made the effects of actions to control short term rate more difficult and less predictable (flow-on effects)

Repricing Model

- Has a target of the Net Interest Income → (assets x interest rates on assets) - (liabilities x interest rates on liabilities)
- Rate sensitive assets/liabilities
    - Depends on the horizon i.e. an asset may not be sensitive at the one-month horizon, but may be at the six-month horizon as it needs to be refinanced
- Reasons for repricing
    - Current asset is maturing and an investor must enter into a new asset --> rollover of an asset
        - Risk concerning what the future interest rate will be at that time
    - Variable rate instrument
        - Long-term asset but every year the interest is fixed again and adjusted according to the reference rate

        - Low liquidity
- A financial institution sorts assets and liabilities according to their maturity into different buckets
    - When an asset is in a bucket, they are labelled "RSA(1)" for a one day horizon etc.

NII = RSA x change in asset rate - RSL x change in liability rate
Cumulative repricing gap: accumulation of all buckets, CRSA - CRSL

- Interpreting a repricing gap
    - Negative: if the size of the rate sensitive assets is smaller than the size of the rate sensitive liabilities in bucket X (RSA < RSL)
        - Liabilities are more affected by the change than assets. Interest expenses increase more than interest income.
        - Negative cumulative repricing gap if size of CRSA > CRSL
        - Exposes financial institution to refinancing risk
    - Positive: if the size of the rate sensitive assets is larger than the size of the rate sensitive liabilities in bucket X