FINANCIAL MARKETS AND INSTITUTIONS

OVERVIEW OF THE FINANCIAL SYSTEM

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DEAMS
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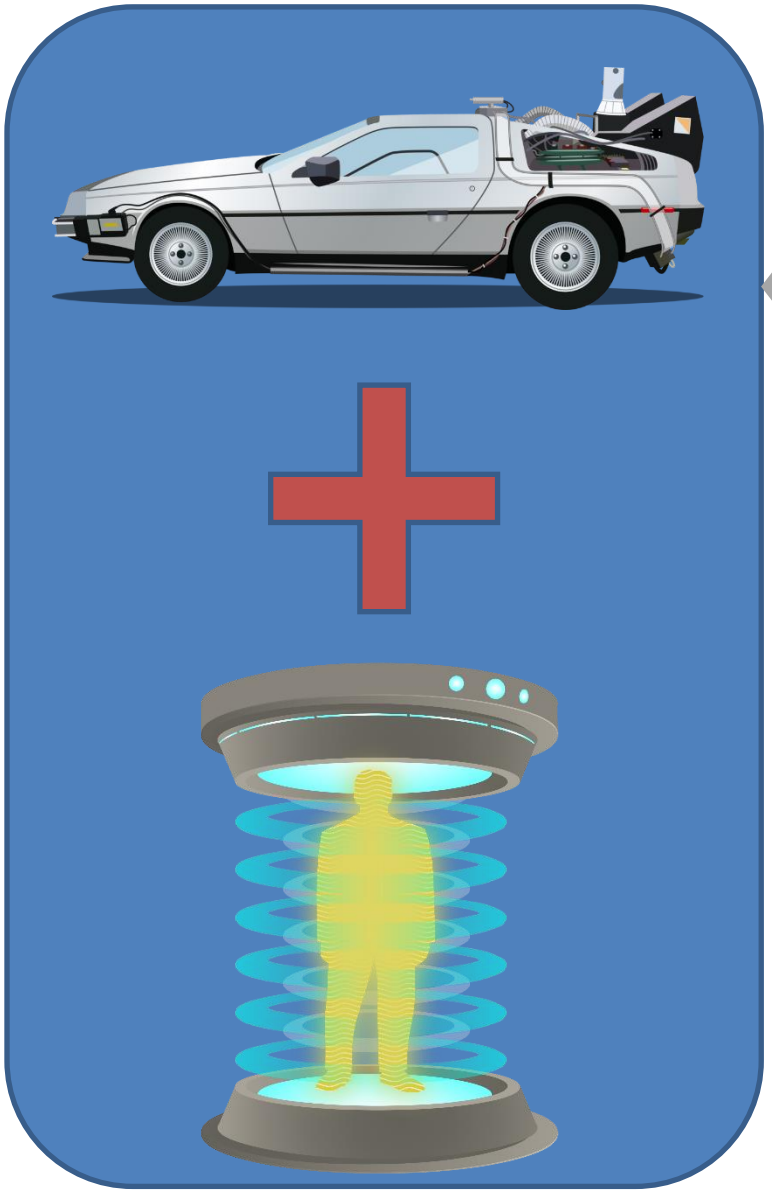
AGENDA

- Why do financial markets exists?
- What do they do and how do they work?
- What are asymmetric information issues?
- How many types of markets/intermediaries are there?
- Why are markets/institutions regulated? How?

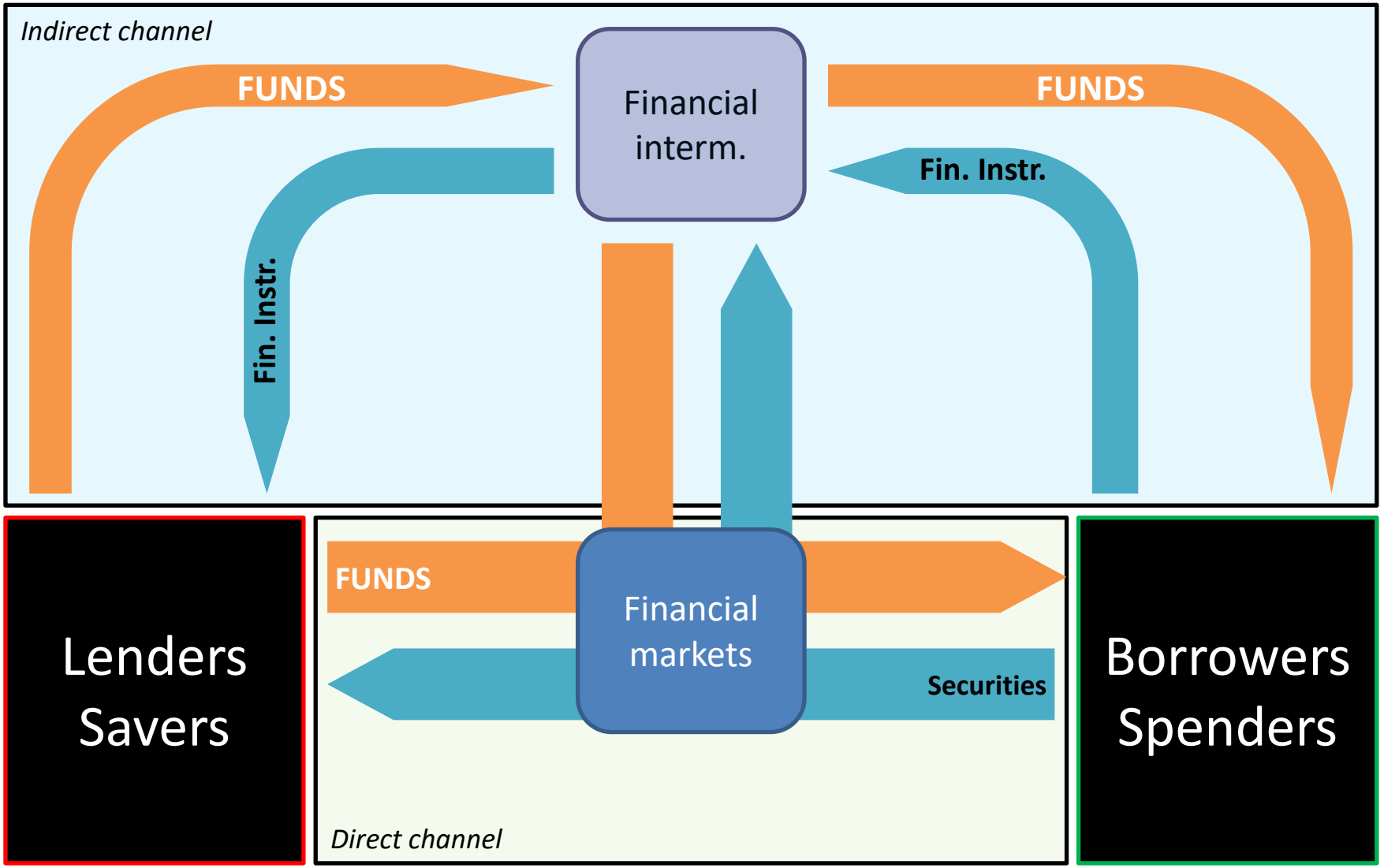
Financial Markets and Institutions at a Glance



Savers and borrowers need help:

- They both lack access to each other
- Knowledge, skills, trusts, preferences?
- Timing of being saver/borrower varies

FUNCTIONS OF FINANCIAL MARKETS

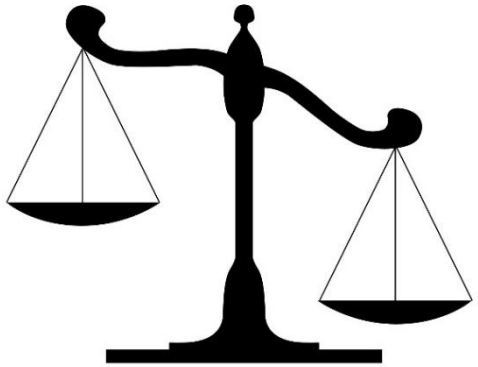


FUNCTIONS OF FINANCIAL MARKETS

The indirect channel is larger:

- **transaction costs**: the smaller the lender/borrower the greater their impact (vs. intermediaries' **economies of scale**)
- additional **services** (**scope economies**)
- **risk sharing** and **reduced uncertainty** (asset transformation, risk pooling, capital, …)
- **diversification**
- **reduced asymmetric information**

ASYMMETRIC INFORMATION



- *one party of a transaction does not know enough about the other party to make accurate decisions*

- Effects:
  - **Adverse selection (before)**
  - **Moral hazard (after)**

- Challenges:
  - Discriminate between "good" and "bad" risks:
    - **Information, guarantees and covenants**
    - **Experience and monitoring**
  - **Specialise** in producing/selling information, yet creating ***free riding*** and **conflicts of interest**
  - Improve (imperfect and distortive) **regulation**

Asymmetric Information

Let's simulate Asymmetric Information!

Asymmetric Information

Example of *adverse selection*:

- Background:
  - A borrower is either good (G) or bad (B)
  - Readiness to pay:
    - G: max 5%
    - B: max 10%
  - Bank requirements:
    - G: min 4%
    - B: min 8%

- If banks can observe G/B:
  - the interest rate is adequate, contracts are sold, profit is made
  - effective capital allocation
- If not:
  - it is rational ask min 6% (if there are 50% G and 50% B)
  - No G would take that contract, so only B remain (and happy, they save!)
  - Banks soon unprofitable, stopping contracts from being sold

ASYMMETRIC INFORMATION

Example of *moral hazard:*

- Background:
  - Your house is worth 100.000
  - You insure it entirely against fire
  - There is a 0.01% chance of it being destroyed by fire

- So, an insurer would charge 10 as a premium
- Every 10.000 houses one will burn, but its 100.000 indemnity is covered by the 10.000x10=100.000 premiums
- But statistics consider “normality”, not that you may burn your house down
- Without controls, no insurer would insure it (or if controls are weak, everybody pays for those that consider themselves “smart”)
- Check http://www.insurancefraud.org/hall-of-shame.htm for some stories...: fraud costs in the US only 80 bln USD per year, or 10% of losses

CONFLICTS OF INTEREST

- Multiple incentives induce opportunistic behaviour, such as hiding information, damaging others' interests, …
- Examples:
  - **Underwriting and placing** of financial instruments in banks: three diverging interests at play (issuer, buyer, bank)
  - **Auditing and advising:** the advisor profits more by having more clients, clients want easy checks, investors want strict scrutiny
  - **Rating agencies**: issuers want good scores, markets trust information, agencies look for more clients

"Try this—I just bought a hundred shares."

- Solutions:
  - **Regulation and supervision**: they cost, separation reduces economies of scope, sanctions are enforced afterwards, compliance reduces efficiency, …

Structure of Financial Markets

Main markets

- Money market
  - Trading occurs on **short-term debt** (<1y)
  - Great volumes/liquidity
  - Large denominations
  - Short term liquidity

- Capital market
  - **longer term debt** instruments (>1y) and **equities**
  - Higher volatility/risk
  - Long-term financing

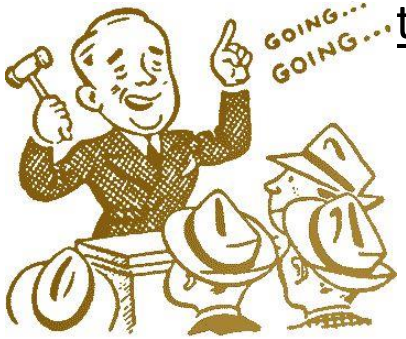
Main instruments

- Debt
  - borrower pays a predetermined amount at specific dates until a maturity date
  - short-term (<1y), medium (1y-5/10y), long-term (>5/10y)

- Equity:
  - claim to share in the net income (dividends) and the net assets of issuer (residually in case of liquidation/bankruptcy)
  - usually voting rights

Structure of Financial Markets

Main markets - origination:



t:

- Hosts selling of **new issues** of a security to initial buyers
- Proceedings **flow directly** to borrowers
- Less common for the public than for **institutional investors**
- **Natural liquidity**

- Secondary market:

- Hosts selling of securities that have been **already issued**
- Sees a number of **different financial intermediaries** (brokers, dealers, banks, insurers, …)
- Proceeding flow **to previous owners**, not to borrowers
- **Artificial liquidity** and, by providing frequent pricing, affect the primary market

Structure of Financial Markets

Main markets - organisation:

- Exchanges:

  - Buyers and sellers (or agents and brokers) meet (physically or virtually) in a centralised location to conduct standardised trades

- Over-the-Counter (OTC):

  - Dealers at various locations hold an inventory of securities and are ready to buy and sell at specific prices to anyone
  - IT developments and increased standardisation/competition reduced differences with organised exchanges

INTERMEDIARIES

By looking at their intermediary role, we have:

- Depository institutions:

  - Commercial banks and cooperatives/mutuals (less differences in the European market compared with the US)
  - Collect (mainly) deposits and hold loans and securities

- Contractual savings institutions:

  - Life insurers: collect policy premiums and hold m/l securities
  - Non-life insurers: collect policy premiums and hold liquid securities
  - Pension funds and retirement programs: collect contributions and hold m/l securities

- Investment intermediaries:

  - Finance companies: issue commercial paper and securities, hold loans
  - Mutual funds: issue shares and hold securities

A number of additional “instrumental” institutions (f.i. brokers, arrangers, …)

REGULATION

Scope: protection of "customers" (depositors and other creditors)

Main instruments:

- Transparency requirements: reduce asymmetric information and lower adverse selection and moral hazard (f.i. contracts, annual reports, …)
- Soundness and financial stability:
  - Restrictions on entry to and exit from market (quality of participants and orderly liquidation)
  - Restrictions on assets and operations (risk taking)
  - Deposit insurance and safety nets
  - Restrictions on competition (f.i. opening new branches) or pricing (f.i. min/max interest rates)
  - **Prudential supervision: capital requirements, governance, market discipline**

EXAMPLES

1. Imagine that you saved 1.000 € and you want to invest them. You have three main alternatives:

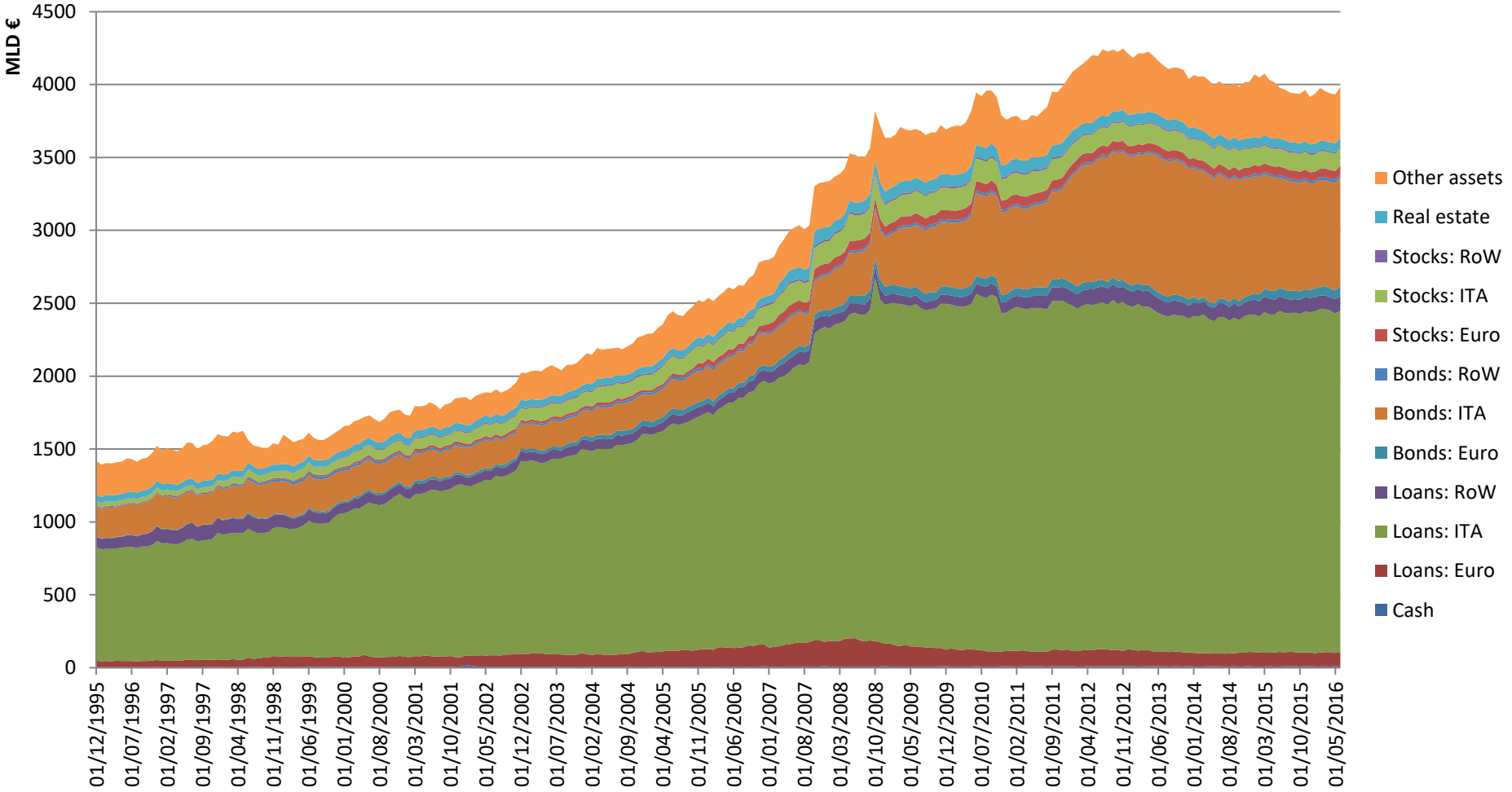
- One of your peers takes a loan from you for 1 year and is paying a 20% interest rate
- A bank provides a demand deposit and offers a 2% interest rate
- A manufacturing company issues securities that will provide in 1 year a 10% interest rate

Questions:

- what is the best choice?
- which one would you choose and why?
- what should be considered in examining these three alternatives?

EXAMPLES

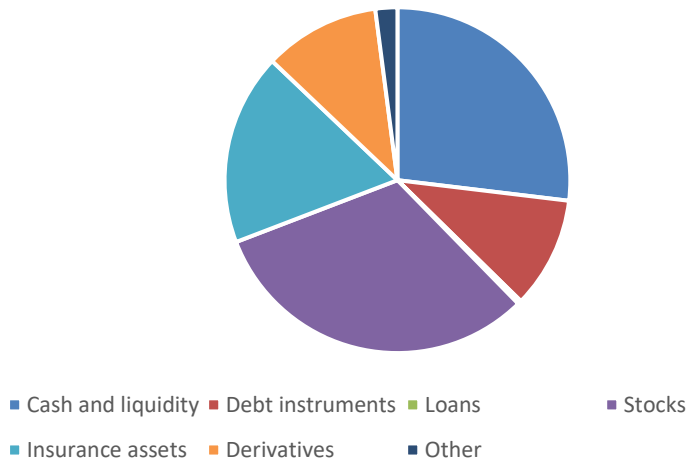
2. Assets of Italian banks in mid-2016



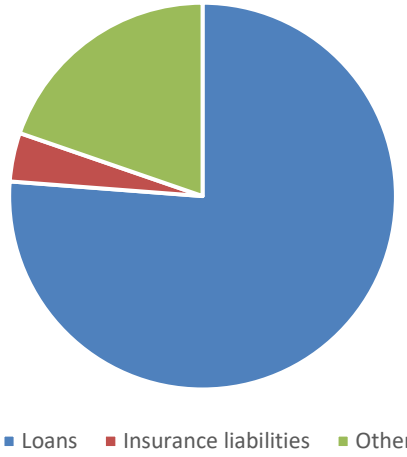
EXAMPLES

3. Financial wealth of Italian families and non-financial firms (2014/15)

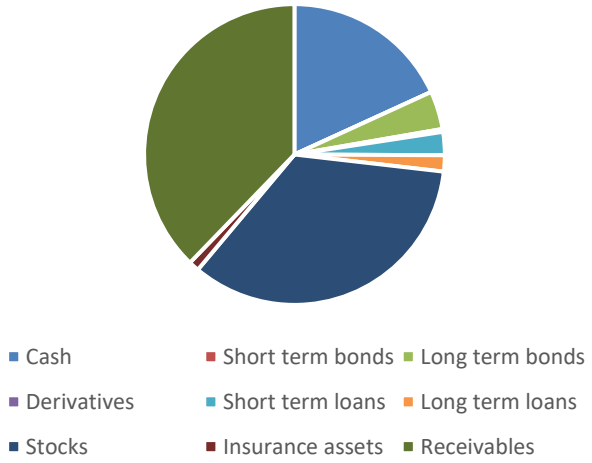
Households - Fin. Assets (4.5 TRN€)



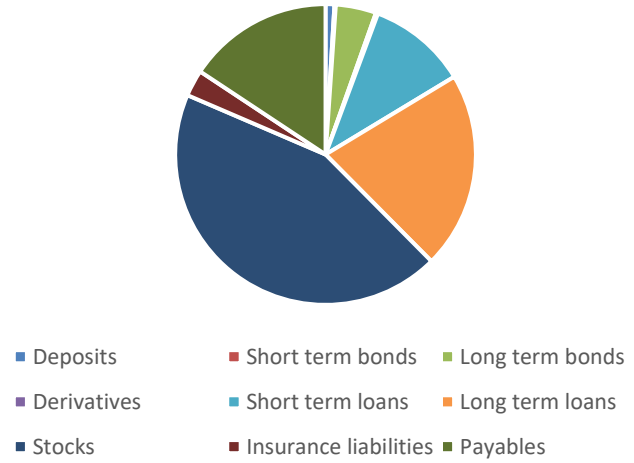
Households - Fin. Liabilities (1 TRN€)



Firms - Fin. Assets (1.5 TRN€)



Firms - Fin. Liabilities (3.5 TRN€)



EXAMPLES

4. The LIBOR scandal

The LIBOR (London Inter Bank Offered Rate) is a group of interest rates (1d-1y) for main currencies (GBP, USD, CHF, EUR, JPY), a reference for loans and derivatives globally

It is calculated through a survey sent to a few leading banks, asking

> "At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 am?"

For examples, 18 banks are involve for the fixing of USD rates, with trimming of higher and lower responses and averaging the rest

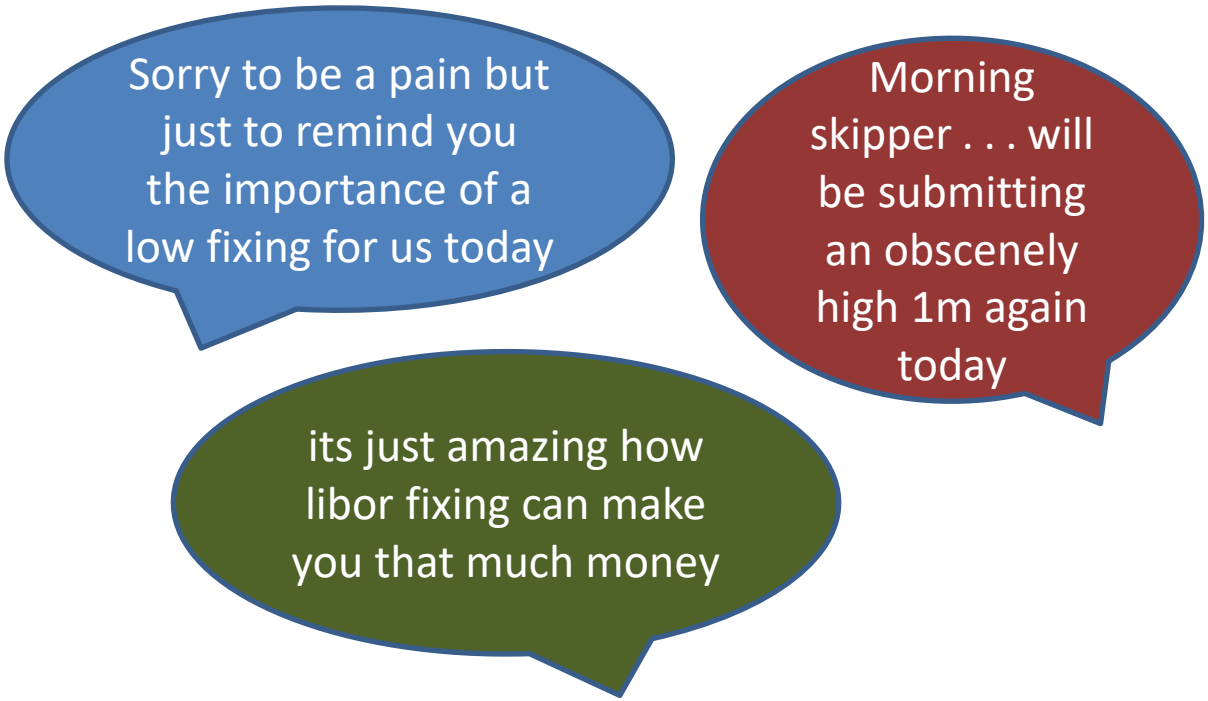
Can you see an asymmetric information problem?

[cont.]

EXAMPLES

[…cont]

- Few people involved that know each other: incentive to collude
- No skin in the game: the opinion expressed is not audited or binding
- If rates change, banks offering the opinion can lose/gain from their portfolio
- Low rates reduce the burden of banks' funding
- Leverage on derivatives can lead to MLN/BLN even with a few bps change



- Several banks sanctioned: Barcalys 0.4bln$, UBS 1.5bln$, DB 2.5bln$
- Some traders prosecuted (14 years in jail to a single UBS trader)
- FOREX and EURIBOR…