FINANCIAL MARKETS AND INSTITUTIONS

OVERVIEW OF THE FINANCIAL SYSTEM

A.Y. 2017/2018
Prof. Alberto Dreassi – adreassi@units.it

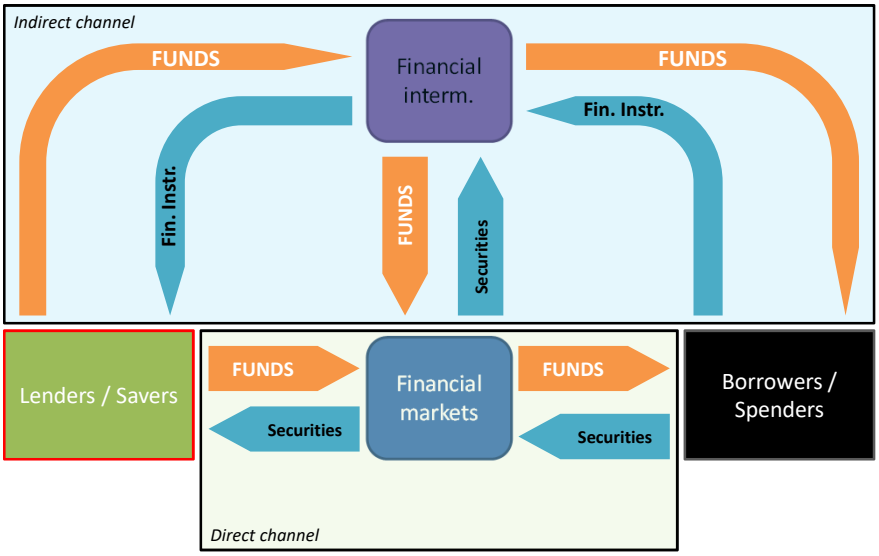
DEAMS
University of Trieste

AGENDA

- Functions of financial markets
- Asymmetric information
- Structure of financial markets
- Classification of financial intermediaries
- Regulation

2

FUNCTIONS OF FINANCIAL MARKETS



3

FUNCTIONS OF FINANCIAL MARKETS

Why do savers and borrowers not meet on their own?

- Profitable investments are infrequently available to savers
- They do not know and/or trust each other
- Without checks, flows would be allocated inefficiently or less productively
- Being saver/borrower can change across time
- Selecting and assessing other parties requires time, expertise and effort

4

FUNCTIONS OF FINANCIAL MARKETS

So, what happens?

- **Stocks are not the main financial instrument** of firms
- There are **more bonds than stocks**
- Stocks&bonds are not the main source of capital for firms (few exceptions)
- The **indirect channel dominates** the other, especially the **banking** one
- **Regulation is very demanding** for products, markets and intermediaries
- **Debt instruments require guarantees and covenants**
- **Less developed financial markets limit growth**

5

FUNCTIONS OF FINANCIAL MARKETS

The indirect channel is usually the largest:

- Financial transactions involve transaction costs (expertise, time and money), the smaller the lender/borrower the greater their impact (vs. intermediaries' economies of scale)
- Intermediaries provide additional services to lenders and borrowers (economies of scope)
- Intermediaries share transactions' risks and reduce uncertainty (asset transformation, risk pooling)
- Intermediaries allow portfolio diversification to reduce uncertainty
- Intermediaries reduce asymmetric information, adverse selection and moral hazard

6

ASYMMETRIC INFORMATION

Asymmetric information:

- one party of a transaction does not know enough about the other party to make accurate decisions
- leads to:
  - Adverse selection (ex-ante)
  - Moral hazard (ex-post)
- solutions:
  - Discriminate between "good" and "bad":
    - Asking for information, guarantees and covenants
    - Using their experience and monitoring continuously
  - Specialise in producing/selling information (yet creating *free riding* and conflicts of interest)
  - Increase regulation (frequently imperfect and distortive)

7

ASYMMETRIC INFORMATION

Let's simulate Asymmetric Information!

8

ASYMMETRIC INFORMATION

Example of *adverse selection*:

- Background:
  - A borrower is either good (G) or bad (B)
  - G are ready to pay max 5%, a B max 10%
  - Banks are ready to ask min 4% to G, 8% to B

- If banks can observe G/B:
  - the interest rate is adequate, contracts are sold,
  - the market is profitable for banks and allows a proper capital allocation
- If they don't know:
  - it is rational to offer only contract asking min 6%
  - But no G would take that contract, so only B remain (and happy, they save!)
  - Banks soon realise that they are unprofitable, stopping contracts from being sold

9

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
- If statistics hold, 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 the fact that you may burn your house down to get the money, if nobody is willing to buy it
- So, insurance may increase the frequency/severity of losses: 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...

10

TRANSACTION COSTS

- **Accessing markets requires considerable costs,** especially for those with limited volumes

- Limited volumes exclude participants from markets requiring **high denominations** and impede **diversification**

- Solutions:
  - **Economies of scale**: several small participants join their funds
  - **Economies of scope:** the same expertise/data leads to the production of several services/products
  - **Liquidity services:** entry/exit from exposures, quickly and cheaply
  - **Information**: availability and dissemination of information enable easy access to markets

11

CONFLICTS OF INTEREST

- Multiple incentives induce opportunistic behaviour, such as hiding information, damaging others' interests, …
- Examples:
  - **Underwriting and placing** of financial instruments in investment banks: three diverging interests at play (issuer: high price, buyer: small price; bank: high profits)
  - **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**: but they cost, separation reduces economies of scope, sanctions are enforced afterwards, compliance reduces efficiency, …
  - Ethics…?

12

ROLE OF FINANCIAL INTERMEDIATION

Financial institutions:

- Create/sell private information outside markets to avoid free-riding
- Offer their financial strength as a guarantee, absorbing risks
- The bigger is asymmetric information, the bigger the banking sector (es. Emerging markets, SME, …)
- Additional issues:
  - New conflicts of interest
  - Market failures
  - Fraud
  - TBTF
  - Contagion and systemic risks

13

STRUCTURE OF FINANCIAL MARKETS

Main instruments:

- Debt instruments (bonds, mortgages, …):
  - the borrower agrees to pay the holder a fixed (or similar) amount of money at specific points in time until a maturity date
  - short-term (<1y), medium-term (1y-5/10y), long-term (>5/10y)

- Equity instruments (common stock, preference shares, …):
  - the holder has a claim to share in the net income (through periodic payment of uncertain dividends) and the assets of a business (though, residually in case of liquidation/bankruptcy)
  - usually involve voting and rights additional to cash-flows
  - smaller volumes than debt instruments

14

STRUCTURE OF FINANCIAL MARKETS

Main markets - origination:

- Primary market:
  - Hosts selling of new issues of a security to initial buyers
  - Proceedings flow directly to borrowers
  - Less common for the public than for investment banks and other institutional investors
- 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
  - Provides artificial liquidity to securities and, by providing recurrent pricing, affect indirectly the primary market

15

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

16

STRUCTURE OF FINANCIAL MARKETS

Main markets - maturity:

- Money market:
  - Trading occurs on short-term debt instruments (<1y)
  - Greater volumes and higher liquidity
  - Large denominations
  - Address temporary excesses or deficits of funds

- Capital market:
  - Trading occurs on longer term debt instruments (>1y) and equities
  - Higher volatility in pricing and higher risk
  - Address long-term financing objectives

17

GLOBALISATION AND FINANCIAL MARKETS

International/global businesses offer:

- More competition and efficient allocation of resources
- More growth and availability of alternative sources/uses of capital
- More welfare and productivity of resources

Despite other country differences:

- Money markets are larger
- Indirect channels are larger
- Debt markets are larger
- Often banks are in the largest segment

		ITA	FRA	DE	UK	USA
% of total financial assets						
Banks	2001	64.2	67.6	75.5	56.4	26.8
	2006	68.1	65.6	72.3	62.1	24.9
	2013	71.3	67.0	66.6	55.6	28.2
Others (insuers, pension funds, mutual funds, …)	2001	35.8	32.4	24.5	43.6	73.2
	2006	31.9	34.4	27.7	37.9	75.1
	2013	28.7	33.0	33.4	44.4	71.8
Financial assets on GDP						
Financial markets	2001	2.4	4.1	4.3	6.1	3.7
	2006	3.1	5.3	4.6	9.6	4.2
	2013	3.9	6.0	4.4	12.4	4.7

18

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, …)

19

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

20

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

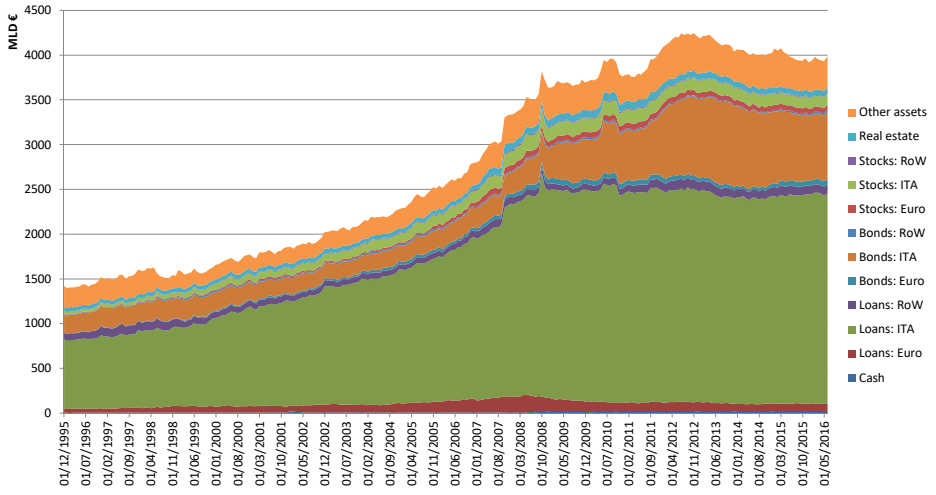
Questions:

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

21

EXAMPLES

2. Assets of Italian banks in mid-2016



22

EXAMPLES

3. Financial wealth of Italian families in Q1-2015

Financial assets		Financial liabilities	
Cash and liquidity	1.243	Loans	692
Debt instruments	482	Insurance liabilities	37
Loans	16	Other	179
Stocks	1.455		
Insurance assets	828		
Derivatives	501		
Other	95		

23

EXAMPLES

4. Balance sheet of Italian non-financial firms at y.e. 2014

Assets		Liabilities	
Cash	292	Deposits	33
Short term bonds	0	Short term bonds	5
Long term bonds	66	Long term bonds	151
Derivatives	5	Derivatives	8
Short term loans	40	Short term loans	371
Long term loans	28	Long term loans	737
Stocks	551	Stocks	1.525
Insurance assets	18	Insurance liabilities	99
Receivables	607	Payables	545
	1.608		3.473

24

EXAMPLES

5. The LIBOR scandal

The LIBOR (London InterBank Offered Rate) is a group of interest rates of the money market (maturity: 1d/1y) for each main currency (GBP, USD, CHF, EUR, JPY): frequently it is the reference rate 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.]

25

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 billions even with a few bps change

And it happened:

- Several banks sanctioned: Barcalys 0.4bln$, UBS 1.5bln$, DB 2.5bln$
- Some traders prosecuted (14 years in jail to a single UBS trader)
- … also in the FOREX: evidence of chats between traders sharing data on volumes and prices before the fixing, with huge trades placed in a 60 seconds window across it
- … and for the EURIBOR, where the question is almost the same ("prime bank" instead of "you"), involving the same institutions and similar results (fines, jailtime, …)

26