Il Sistema Finanziario
What, How, Why, Who (does it?)

Set 1

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SECTORS' FINANCIAL BALANCE (FB)

- SECTORS CAN BE DEFINED AT DIFFERENT GRANULARITY
  - PRIVATE PUBLIC REST OF THE WORLD
  - HOUSEHOLDS FIRMS PUBLIC ROW
  - HOUSEHOLDS NON FINANCIAL FIRMS (NFC) FINANCIAL FIRMS
    CENTRAL GOVERNMENT LOCAL GOVERNMENT,
    OTHER EUROZONE (EZ) NATIONS NON EZ NATION

- YET, THE SUM OF THEIR FINANCIAL BALANCES IS ALWAYS = 0

$$(S - I)_{HOUSEHOLDS} + (S - I)_{FIRMS} + (T\text{-}G) + (M\text{-}X) = 0$$

In the entire economy, by definition: Total Lending = Total Borrowing

- BUT EACH SECTOR FB IS ALMOST ALWAYS ≠ 0
  - FB > 0 → THE SECTOR IS IMPROVING ITS FINANCIAL POSITION
  - FB < 0 → THE SECTOR IS WORSENING ITS FINANCIAL POSITION

SECTORS' FINANCIAL POSITION (FP)

FP = FINANCIAL ASSETS (FA) – FINANCIAL LIABILITIES

- FINANCIAL ASSETS
  - LOANS GRANTED
  - BONDS
  - STOCKS
  - BANK DEPOSIT
  - ……
- FINANCIAL LIABILITIES
  - LOANS RECEIVED
  - BONDS ISSUED
  - STOCKS ISSUED
  - ……

$$\mathbf{FB = \Delta\ FP = \Delta FA - \Delta FL}$$

- FB is a «FLOW» variable, i.e. it is defined over a period of time
- FP is a «STOCK» variable, i.e. it si definied at a moment in time

- FB > 0 means …
- FB < 0 means …

Financial assets and liabilities of households (1)
(millions of euros and per cent)

	End-of-period stocks			Flows	
	2017	Percentage composition		2016	2017
		2016	2017		
ASSETS (2)					
Bank deposits (3)	1,167,926	27.0	26.5	43,874	21,577
Italian	1,137,398	26.3	25.8	44,033	22,336
Sight deposits	687,452	15.3	15.6	62,694	35,699
Other deposits	449,946	10.9	10.2	-18,662	-13,363
Foreign	30,528	0.7	0.7	-159	-759
Debt securities	304,947	8.6	6.9	-61,871	-41,774
Italian	220,705	6.5	5.0	-59,883	-38,456
of which: issued by the public sector	122,171	3.1	2.8	-8,673	2,622
issued by banks	88,600	3.2	2.0	-47,154	-42,448
Foreign	84,242	2.1	1.9	-1,988	-3,318
Investment fund units	537,059	11.2	12.2	12,295	57,047
Italian	261,246	5.7	5.9	-2,665	21,245
Foreign	275,813	5.5	6.3	14,960	35,802
Shares and other equity	1,062,409	23.3	24.1	-15,011	-41,276
Italian	991,050	21.7	22.5	-14,683	-41,743
Foreign	71,360	1.6	1.6	-328	467
Insurance, pension funds and severance pay entitlements	996,174	22.2	22.6	41,626	32,733
of which: life insurance reserves	677,669	14.7	15.4	36,173	25,349
Other assets issued by residents (4)	338,178	7.7	7.7	16,240	13,097
Total assets	**4,406,694**	**100.0**	**100.0**	**37,153**	**41,404**
LIABILITIES					
Short-term debt	51,273	5.9	5.5	-2,049	-751
of which: to banks	49,094	5.8	5.3	-2,153	-1,845
Medium- and long-term debt	658,077	70.4	70.9	10,521	18,642
of which: to banks	580,322	62.5	62.6	9,755	12,011
Other liabilities (5)	218,372	23.6	23.5	3,611	3,081
Total liabilities	**927,722**	**100.0**	**100.0**	**12,083**	**20,972**
BALANCE	**3,478,972**			**25,070**	**20,432**

Source: Bank of Italy, financial accounts.
(1) Consumer households, producer households and non-profit institutions serving households. Rounding may cause discrepancies in totals. — (2) Individually managed portfolios are not shown; their assets are included under the individual types of investment. — (3) Includes liabilities of Cassa depositi e prestiti SpA. — (4) Accounts receivable, BancoPosta current accounts, banknotes, coins and other minor items. — (5) Accounts payable, severance pay and pension provisions and some minor items.

Composizione delle attività e passività finanziarie delle famiglie (1)

(consistenze di fine periodo)

PAESI E ANNI	Circolante e depositi	Titoli pubblici e altre obbligazioni	Azioni, altre partecipazioni e quote di fondi comuni	*di cui:* quote di fondi comuni	Riserve assicurative e previdenziali (2)	Attività	Passività (3)	*di cui:* debiti finanziari	*di cui:* mutui	Ricchezza finanziaria netta
	Quote percentuali sul totale delle attività					**In rapporto al reddito disponibile**				
Italia										
2015	30,6	9,9	34,8	11,0	21,7	3,73	0,82	0,62	0,33	2,90
2016	31,9	8,7	33,5	11,5	22,9	3,69	0,82	0,62	0,33	2,87
Francia										
2015	28,5	1,4	27,9	7,0	36,7	3,46	1,03	0,88	0,63	2,43
2016	28,7	1,3	26,7	6,0	37,2	3,49	1,02	0,89	0,65	2,46
Germania										
2015	39,1	3,2	20,2	9,9	36,9	2,86	0,85	0,84	0,56	2,01
2016	39,2	2,8	20,4	10,2	37,1	2,89	0,86	0,85	0,57	2,03
Spagna										
2015	42,2	1,9	37,2	12,5	16,6	2,94	1,15	1,07	0,81	1,80
2016	42,8	2,0	35,5	13,0	17,7	2,86	1,11	1,03	0,77	1,76
Area dell'euro										
2015	33,2	3,9	27,5	9,0	32,8	3,42	1,07	0,95	0,61	2,35
2016	33,4	3,4	26,8	8,9	34,1	3,46	1,06	0,95	0,61	2,40
Regno Unito										
2015	24,3	1,6	11,5	2,9	59,4	4,86	1,40	1,29	0,89	3,47
2016	22,8	1,8	9,5	1,7	62,9	5,41	1,45	1,32	0,90	3,96
Stati Uniti										
2015	13,5	6,2	45,6	10,6	31,6	5,20	1,07	1,02	0,69	4,14
2016	13,7	5,6	46,4	10,4	31,3	5,29	1,06	1,02	0,68	4,23

Financial assets and liabilities of firms (1)
(millions of euros and per cent)

	End-of-period stocks			Flows	
	2017	Percentage composition		2016	2017
		2016	2017		
ASSETS					
Cash and deposits	349,310	19.4	19.2	22,979	27,711
Securities	65,571	3.9	3.6	5,014	-2,446
of which: Italian public sector	52,811	3.1	2.9	4,660	1,526
Shares and other equity	687,560	36.1	37.9	31,550	33,424
Trade receivables	584,971	32.6	32.2	-26,716	50,020
Other assets (2)	128,835	8.1	7.1	11,055	-3,122
Total assets	**1,816,246**	**100.0**	**100.0**	**43,882**	**105,587**
of which: external	486,930	28.7	26.8	12,068	8,746
LIABILITIES					
Financial debt	1,246,929	33.7	32.1	-6,344	16,697
Bank loans	726,612	21.1	18.7	-11,283	-34,668
Other loans (3)	354,477	8.7	9.1	7,072	30,252
Securities	165,839	3.9	4.3	-2,133	21,113
Shares and other equity	1,904,081	47.8	49.0	38,757	22,070
Trade payables	537,681	13.2	13.8	-18,267	50,618
Other liabilities (4)	197,309	5.3	5.1	4,404	4,111
Total liabilities	**3,885,999**	**100.0**	**100.0**	**18,551**	**93,496**
of which: external	671,007	17.1	17.3	12,987	23,508
BALANCE	**-2,069,753**			**25,331**	**12,091**

Source: Bank of Italy, financial accounts.
(1) The data refer to the non-financial corporations sector. Rounding may cause discrepancies in totals. – (2) Short-term foreign claims, intra-group claims, insurance technical provisions, domestic derivatives and other minor items. – (3) Includes financing provided by leasing and factoring companies, intra-group loans and securitized loans. – (4) Postal current accounts, severance pay and pension provisions, domestic derivatives and other minor items.

Aims & Scope of the financial system

- Transfer of resources through time
  - STOCK MKT BOND MKT BANK LOAN
  - CURRENCIES MKT
- Ensure an optimal allocation of resources
  - Best and most profitable investment project
  - Life cycle consumption smoothing
- Provide an optimal allocation of risk across agents
- Ensure the best possible use of resources by the borrowers
- Support the payment system
  - providing means of payment
  - providing the infrastructure to run it efficiently
- Support the monetary policy
  - Transferring policy actions to the economy

Financial system functions

- TRANSFER RESOURCES AMONG SECTORS OF THE ECONOMY: PRIMARY ACTIVITY
  - **PRIMARY** TRANSACTIONS / ACTIVITY / MARKETS: NEW FA/FL CREATED
  - E.E.E., THE LARGER THE FBs, THE BIGGER THE FINANCIAL SYSTEM
  - PRIMARY ACTIVITY MAY OCCUR EVEN WITH SECTORS' FBs = 0 SINCE RSOURCES MAY BE TRANSFERED EVEN ITHING THE SAME SECTORS

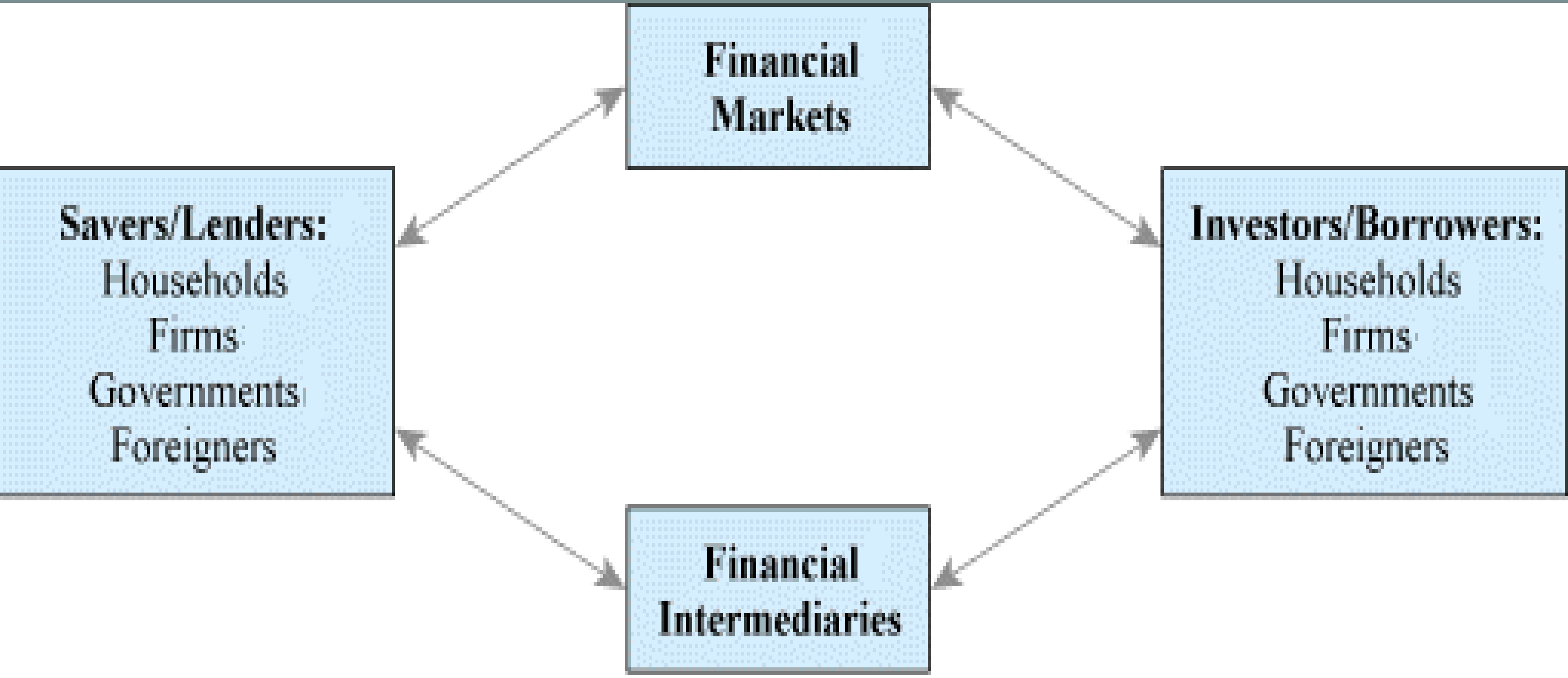
- REBALANCING OF EXISTING FINANCIAL POSITIONS: SECONDARY ACTIVITY
  - **SECONDARY** TRANSACTIONS / ACTIVITY / MARKETS: OWNERSHIP OF EXISTING ASSETS IS TRANSFERRED

- RISK SHIFTING SERVICE (EITHER HEDGING OR SPECULATION)
    - LOAN COMMITMENTS, AVAL, DERIVATIVES CONTRACT

- MONITORING THE USAGE OF BORROWED RESOURCES

- PROVIDING MEANS OF PAYMENT AND THE RELATED INFRASTRUCTURE

Financial system



- Financial Functions are stable through time;
- Financial Institutions (markets, intermediaries, instruments) constantly change (process of «financial innovation»)

HOW DOES A FINANCIAL SYSTEM WORKS?

- Suppliers of capital
  - households with saving
  - firms with cash
- Intermediaries (dealer)
  - commercial banks
  - savings & loans
  - insurance companies
- Users of capital
  - firms (RE<investment)
  - Households / Government

- Suppliers of capital

Institutional investors

- mutual funds
- pension funds

- Markets (with brokers)
  - Government/corporate bond
  - Equity
  - Asset backed securities
  - [Derivatives]
- Users of capital

Why financial intermediaries?

- Operational efficiency
  - economies of production (scale, scope, continuity)
- Dealing with uncertainty
  - reducing the cost of looking for the best deal
- Mitigating imperfect information problems
  - adverse selection
  - moral hazard (opportunistic behavior)
- Expanding contracting capacity
  - limited enforceability of legal contracts
  - transactions not perfectly divisible
  - limited foresight of all future possible states of the world

Financial intermediaries & uncertainty

- No duplication of the cost of search and evaluation of the uncertainty
  - cross-sectional reusability of information produced
  - reusability through time of the information produced
  - confidentiality issue
- Gains from division of labor
  - economies of scale
  - learning by doing
- Their function is valuable:
  - quality of the object of search is not readily observable
  - information is a reusable goods

Financial intermediaries & imperfect information

- Screen potential borrowers through a properly designed menu of contracts

- Reducing the signaling cost for the borrower
  - Reputation
  - Repetition

- Less costly and more efficient in performing the (delegated) monitoring and auditing function
  - but who monitors the monitors?

Financial intermediaries and contracting capacity

- Overcome the divisibility problem allowing the desired degree of diversification
- Offer their reputation as a substitute of limited legal protection
- Establishing <u>long term relationship</u> on a <u>wide range of issues</u> they can implement strategic contracting where legal contracting fails
- Adjust legal & strategic contract at low cost should the need arise

Activities of FI - I

- Monetary function
  - money transfers, checks, debit card, SDD (SEPA direct debt), ATM withdrawals
- Asset servicing
  - Safekeeping
  - Custody (collecting, tracking & remitting payments on mortgages, bonds and equities,...)
- Brokerage activities
  - placement, stockbroking, financial advising, certification

➢ ***FIs which engage in these activities only bear business, operational & reputational risk and earn fees***

Activities of FI - II

- Qualitative asset transformation (QAT)
  - act as a principal between final lenders & borrowers
  - the attributes of the financial asset of the former are different from those of the financial liabilities of the latter

- Attributes transformed
  - duration = term to maturity
  - divisibility = unit size
  - liquidity = easiness to cash in on demand
  - credit risk = uncertainty of the debt service
  - numeraire = currency of denomination

More on QAT

- Duration
  - assets held by the FI have longer duration than FI’s liabilities
- Divisibility
  - assets held by the FI have larger unit size than FI’s liabilities
- Liquidity
  - assets held by the FI are more illiquid than FI’s liabilities
- Credit risk
  - assets held by the FI are riskier than FI’s liabilities

- ***FIs in QAT are also financial risk managers, i.e. they bear financial risks and earn capital income (interests, dividends, capital gains/loss)***

QAT: risk & reward for FI

- Reward given by: earnings on assets - cost of liabilities
- Besides business & operational risk they are exposed to financial risks due their balance sheet mismatches:
  - Interest rate risk (adverse change in interest rate)
  - market risk (adverse change in asset market price)
  - currency risk (adverse change in foreign currency value)
  - liquidity risk (bank runs)
  - inventory risks (because of different unit size)
  - credit risk (monetary loss, replacement cost)
  - country risk (sovereign state default)
  - transfer risk (sovereign state forbidding its resident to pay)
- QAT FI are producers of both “information services” and “financial risk management services”

From stylized facts to the real thing

- Distinction between brokerage activities & QAT is not always clear-cut
  - investment companies / mutual funds in Italy
- Sometimes they are performed in combination in the same financial transactions
  - placement of securities with a firm commitment clause
  - banker's acceptance
- A FI may run concurrently both lines of business
  - Banks which are active in the deposit-loan market & in stockbroking / asset management / custody space

Types of FI

- Depositary institutions (DI)
  - performs monetary functions since their liabilities can be used as means of payment
  - (Commercial) Banks - Thrifts (S&L)- Credit unions (CU)
    - deposit with these institutions can be withdrawn on demand with certainty of the amount received
- Nondepositary institutions (NDI)
  - Investment banks
  - Asset Managers of collective investment scheme (funds)
  - Pension Funds
  - Insurance Companies
  - Finance companies (factoring, leasing,….)
- The distinction is becoming less clear-cut
  - Money market mutual fund, investment banks

Depositary institutions

- The distinction among types of DI was based on:
  - diversity of assets
  - role in payment system
  - ownership structure
    - One head, one vote
    - No profit motives
- These differences are disappearing:
  - all DI diversify extensively their assets;
  - all DI offer checking and cash management services;
  - the corporate for profit structure is now dominant among DI
- Hereafter, a single term for all of them: ***banks***

Types of banking systems

- According the permitted business model:
  - <u>specialized banking</u>: banks may engage only in QAT activities (deposit taking & granting loans)
  - <u>universal banking</u>: banks may engage both in QAT and brokerage activities (so called *investment banking*)
- According the ownership structure
  - separation of banking and commerce: corporations can neither own/control or be owned/controlled by banks
  - coexistence of banking and commerce: corporations may either own/control or be owned/controlled by banks
- Huge historical differences
  - Japan: specialized banking with coexistence of bank and commerce
  - USA: specialized banking with separation of banking & commerce
  - Germany: universal banking with coexistence of banking & commerce

Great Recession (2008-2012): before and after

- **Before**
  - trends towards universal banking
    - too much economic and liquidity risk taken by depositary institutions
  - «Too big to fail»
  - Development of the shadow banking
    - too much (liquidity) risk outside depositary institutions
- After
  - universal banking is here to stay, but more regulated
  - bail in vs. bail out
  - system less centered on banks, but without

Current dominant model

- Universal banking, with partial coexistance of banking & commerce, is gaining ground worldwide
- Universal banking may occur in two forms:
  - pure universal bank
    - the same legal entity operates all lines of business
  - banking group / bank holding company
    - different lines of business are operated by different corporations under the ownership and the control of a bank holding company
    - Legal ring fencing: why?
    - i.e brokerage activities are run through subsidiaries)
- Ownership
  - Banks may own/control firms with limitations (% shares; timing) and penalized in terms of capitl requirement
  - Firms may own, but not control, banks (ownership ceiling)

Comparing financial system models

- Pros (+) & Cons (-) of the universal banking system:
  - economies of scope are fully exploited (+)
  - information asymmetry are reduced (+)
  - Strategic focus may be lost (-)
  - DIs may undertake too much risk (-)
  - systemic risk is larger (-)
  - conflict of interest risk (-)

- Pros & Cons of the combining banking & commerce
  - information asymmetry is reduced (+)
  - investment decision can be more far sighted (+)
  - greater financial system risk (-)
  - risk of suboptimal credit decision (-)

Banking Group

- Holding Bank (banca capogruppo)
  - La capogruppo è essa stessa banca operativa
  - Società controllate (Subsidiaries)

- Financial Holding Company (FHC)
  - La capogruppo è una società finanziaria di partecipazioni
  - società controllate (subsidiaries) - banking activity should be dominant
    - *Total assets of the subsidiaries operating outside the banking and financial sectors (and not functional to them) do not exceed 15% of the total consolidated assets (holding company + its subsidiaries).*

Stability of banking system

- Regulation on market structure (now less important)
  - barriers to entry
  - restrictions on permitted activities (legal boundaries)
  - Idea 1: compress competition to prevent excessive risk taking
  - Idea 2: prevent moral hazard to prevent excessive risk taking
- Regulation on manager's discretionality (now + important)
  - portfolio restriction
    - regulatory limits on large credit exposure, on equity holdings in industrial firms,…)
  - regulatory capital requirements
    - maximum risk exposure is a function of bank's loss absorbing capital which prevents the risk of default (≈ equity capital)
  - supervision by the banking authority
  - transparency requirements which fosters market discipline
  - **idea:** make risk taking activities more costly to shareholders

Form of regulations by aims

- System Safety & Soundness (Stability)
- Monetary Policy Transmission
- Amount of Credit
- Allocation of Credit
- Investor Protection (adequacy, risk)
- Consumer Protection (transparency, pricing)
- Antitrust
- Anti Money Laundering (AML)
- International harmonization

Banking system

- Central bank
  - Lender of last resort
  - Monetary policy maker
  - supervisory authority for stability concern (often)
- Supervisory Authority (one or more)
  - by aim by institutions by activities
  - In federal states same type of supervision power may be split among different authorities
    - US: Federal Reserve Comptroller of the Currency, State Authorities
    - Eurozone: ECB (large banks) and national authorities (small banks)
- Firms operating with the public via market trades
  - banks (state owned, privately owned, mutuals,…)
- Resolution Authority
- Deposit Insurance Scheme

Deposit Insurance

- € 100.000 euro per deposit holder
- Guarantee valid for registered deposit in € and fx, cashier check and equivalent securities
- Not covered:
  - bonds issued by banks and repos
  - deposits held by the public sector
  - Deposit held, directly or indirectly, by:
    - directors and top management
    - equityholders with at least 5% of the bank’s capital
  - deposits at non market conditions that contributed to the bank failure

Banks in Italy: Distribution by Legal Entity (03/2013)

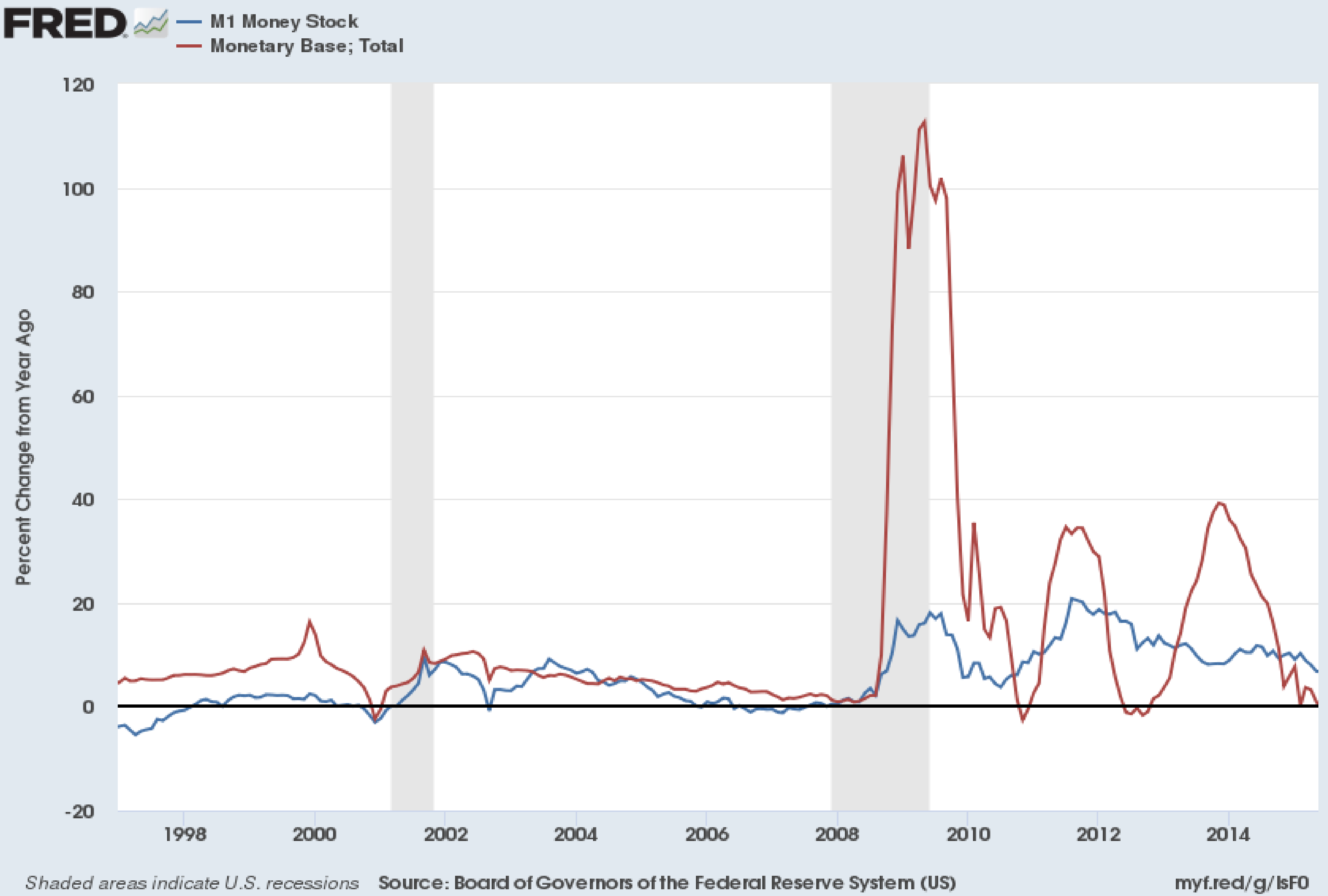
	Banche	Sportelli
Corporations	198	22.419
Banche Popolari	37	5.442
Banche di credito cooperativo	391	4.433
Branches of Foreign Bank	78	323
TOTAL	**704**	**32.617**

Banking & money creation

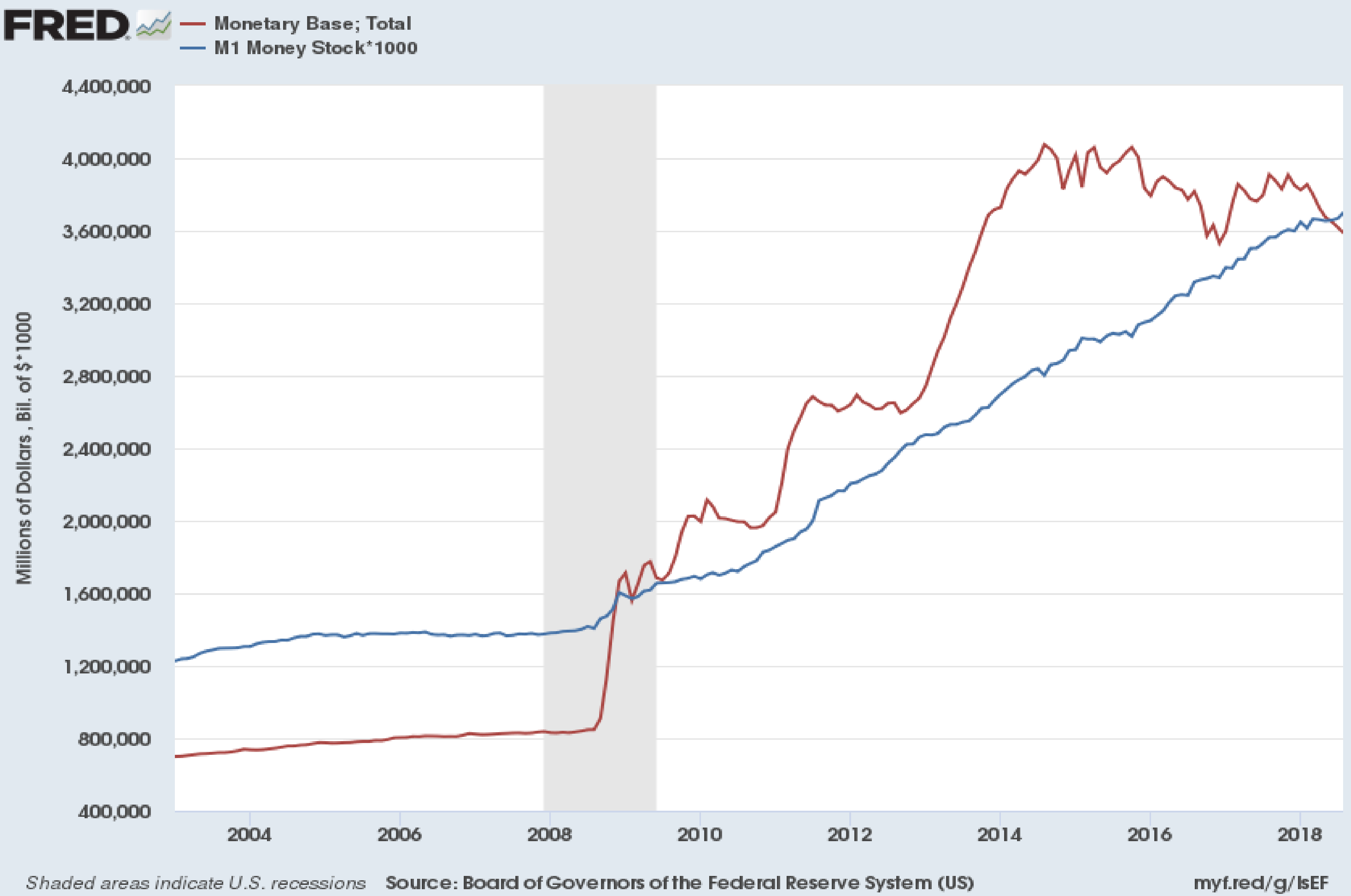
- Central bank creates monetary base (not money)

- Given the monetary base, the amount of money (M) depends on the deposit taking & lending activity of the banks (multiplication process)
  - Different definitions of money (M1,M2,M3)
  - Money multiplier: $m = [(1+c)/(c+r)]$
  - M depends on:
    - currency holdings by the public (-)
    - reserve holdings by the banks (-)

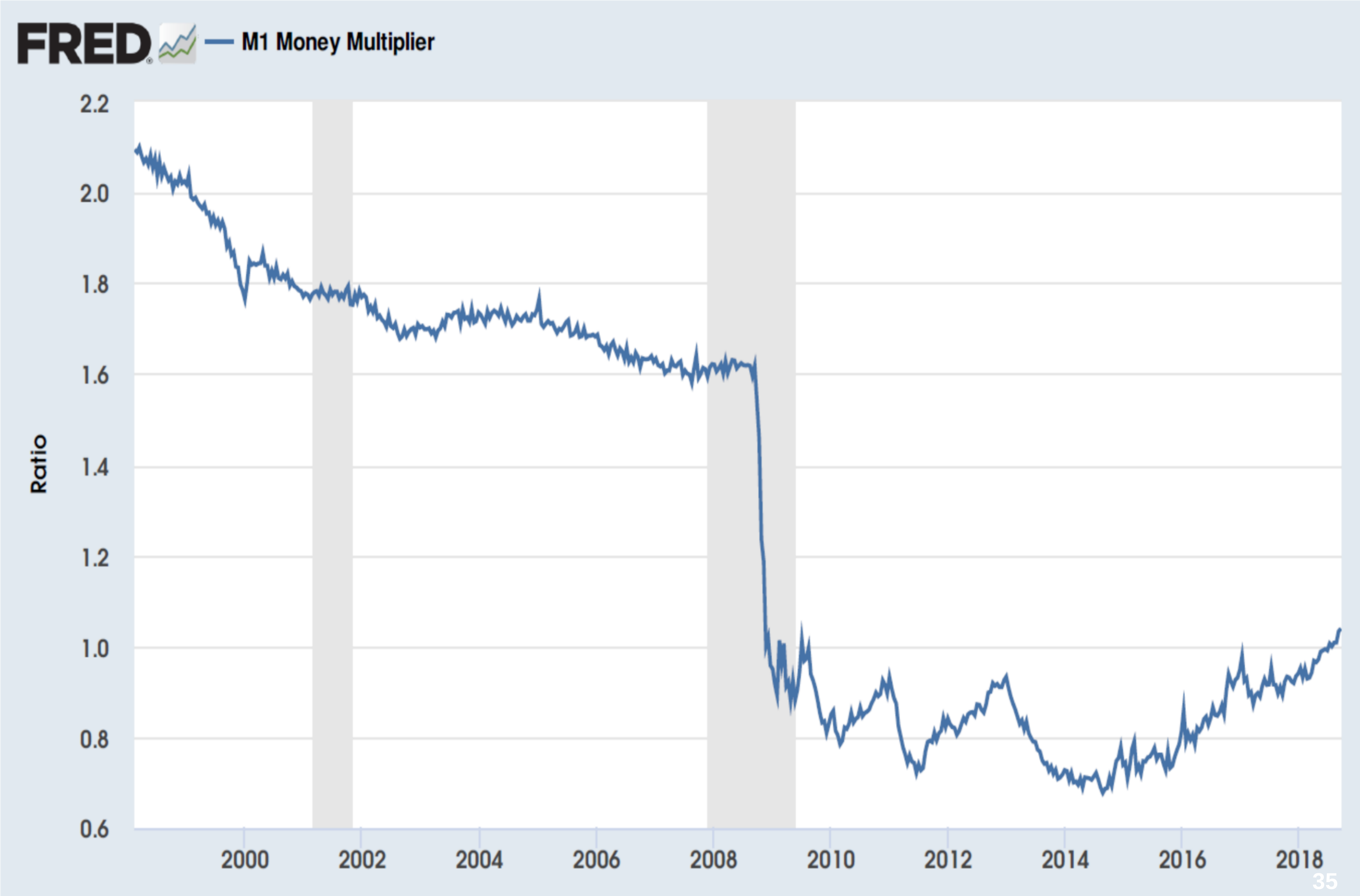
Money vs. Monetary Base: growth rate



Money vs. Monetary Base: levels



Money multiplier is not stable



Velocity of M1 is not stable