

Money and Banking

Prof. Dr. Tobias Berg (Chair of Finance and Banking)

1. Introduction

Agenda

- Organizational issues
- Motivation
- Finance and the real economy
- Financial markets and intermediaries: Definition and size
- The three key services of financial intermediaries
- Summary

Organisational issues

- Time / Room:
 - Tuesday 14-16
 - Additionally in even weeks 16-18
 - Room: HZ 12
- Course material:
 - Online via OLAT
- Grading:
 - Written exam (includes multiple choice with explanations (~1/3), quantitative questions (~1/3) and qualitative questions (~1/3))

Literature

Module description: This course will introduce students to financial institutions with a focus on banks. In particular, students will learn about the core functions of financial institutions and the concept of money. We will study the key balance sheet and regulatory features of financial institutions with a particular attention paid on the measurement and management of the risks facing these institutions.

Key book for this lecture:

- Greenbaum, S.I., A.J. Thakor, and A.W.A. Boot: Contemporary Financial Intermediation, 4th edition, Academic Press, 2019, available for free download via <https://www.arnoudboot.nl/files/files/Contemporary%20Financial%20Intermediation%202019.pdf>

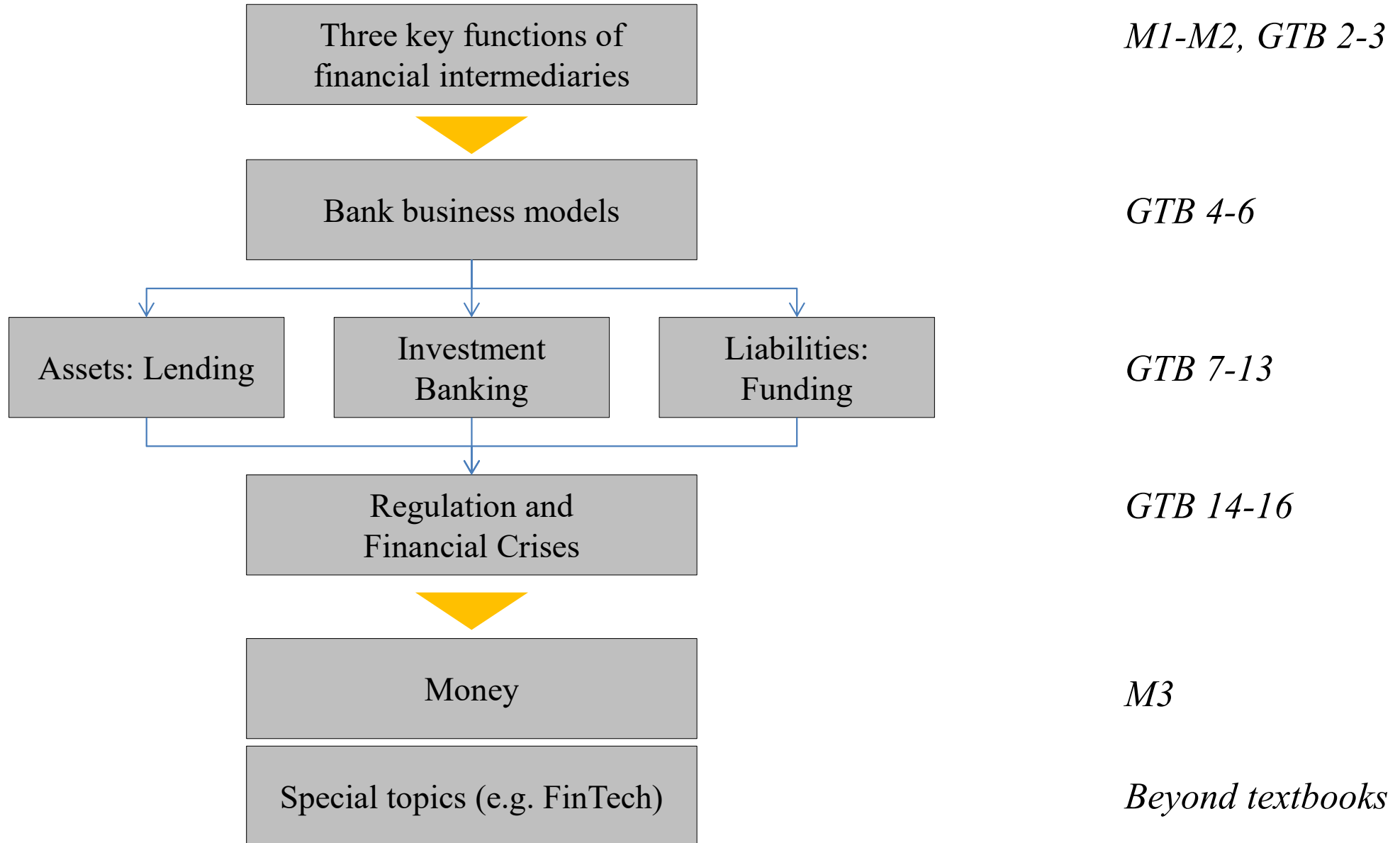
You can either use the 2020 version, or the 3rd edition as well

Note: We will mainly cover Part II-Part VIII of the book.

Other related books:

- Mishkin, F.S.: The Economics of Money, Banking, and Financial Markets, 13th Edition, Pearson 2021 (or older versions up to 10th edition)
- Saunders, A. and M.M. Cornett, Financial Institutions Management, 10th Edition, International Edition, McGraw Hill 2021 (or older versions up to 8th Edition)
- De Haan, J., S. Oosterloo, and D. Schoenmaker: Financial Markets and Institutions: A European Perspective, 4th Edition, Cambridge University Press, 2020

Topic-Map



Topic-Map - Details

Session	KW	Date	Time	Topic (Overview)	Topic (Details)	Book chapters (M=Mishkin, GTB= Greenbaum/Thakor/Boot)
1	16	16.04.2024	14-16	Introduction	Admin Motivation Financial markets and financial intermediaries	M1-M2, GTB2-GTB3
2	16	16.04.2024	16-18	Introduction	Admin Motivation Financial markets and financial intermediaries	
3	17	23.04.2024	14-16	Bank balance sheet and PnL	Valuation Balance sheet statement Profit and loss statement Case study (not graded)	GTB4-GTB6
4	18	30.04.2024	14-16	Bank balance sheet and PnL	Valuation Balance sheet statement Profit and loss statement Case study (not graded)	
5	18	30.04.2024	16-18	Bank Lending 1	Loans Credit Analysis	GTB4-GTB6
6	19	07.05.2024	14-16	Bank Lending 1/2	Loans Credit Analysis	GTB4-GTB6
7	19	07.05.2024	16-18	Bank Lending 2	Loan Pricing Credit Rationing Relationship Banking	GTB7-GTB8
8	20	14.05.2024	14-16	Investment banking	Syndication Securitization Financing of M&A transactions	GTB9-GTB11
9	20	14.05.2024	16-18	Investment banking	Syndication Securitization Financing of M&A transactions	GTB9-GTB11
10	21	21.05.2024	14-16	No lecture in person		
11	22	28.05.2024	14-16	Bank Funding	Deposit contract, liquidity insurance, bank runs Money markets and interbank funding Bank capital structure	GTB12-GTB13
12	22	28.05.2024	16-18	Bank Funding	Deposit contract, liquidity insurance, bank runs Money markets and interbank funding Bank capital structure	GTB12-GTB13

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Session	KW	Date	Time	Topic (Overview)	Topic (Details)	Book chapters (M=Mishkin, GTB= Greenbaum/Thakor/Boot)
13	23	04.06.2024	14-16	Guest Lecture	Alexander Doll: Investment Banking	GTB14
14	24	11.06.2024	14-16	Guest Lecture	Paul Hiebert: Climate Stress Tests	
15	24	11.06.2024	16-18	Financial crises	Financial crises	GTB14
16	25	18.06.2024	14-16	Financial crises	Financial crises	GTB14
17	26	25.06.2024	14-16	Money	Money	M3 , GTB4
18	26	25.06.2024	16-18	Guest Lecture	Jochen Siegert: Payments	
19	27	02.07.2024	14-16	Money	Money	M3 , GTB4
20	28	09.07.2024	14-16	Bank regulation	Bank regulation	GTB 15-GTB16
21	28	09.07.2024	16-18	Bank regulation	Bank regulation	GTB 15-GTB16
22	29	16.07.2024	14-16	Q&A		

Teaching style

General idea

- Concepts and frameworks, not only facts
- Why?, and not only what and how

Methods

- Theory
- Tutorials/questions
- Case studies

The aim is to go to the frontier of academic research, going beyond what is industry practice or common knowledge in the industry

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Banking: Only discipline that can earn you a Nobel Peace and a Nobel Economics Prize

2006 Peace Prize



The Norwegian Nobel Committee has decided to award the Nobel Peace Prize for 2006 [...] to Muhammad Yunus and Grameen Bank for their efforts to create economic and social development from below.

2022 Economics Prize

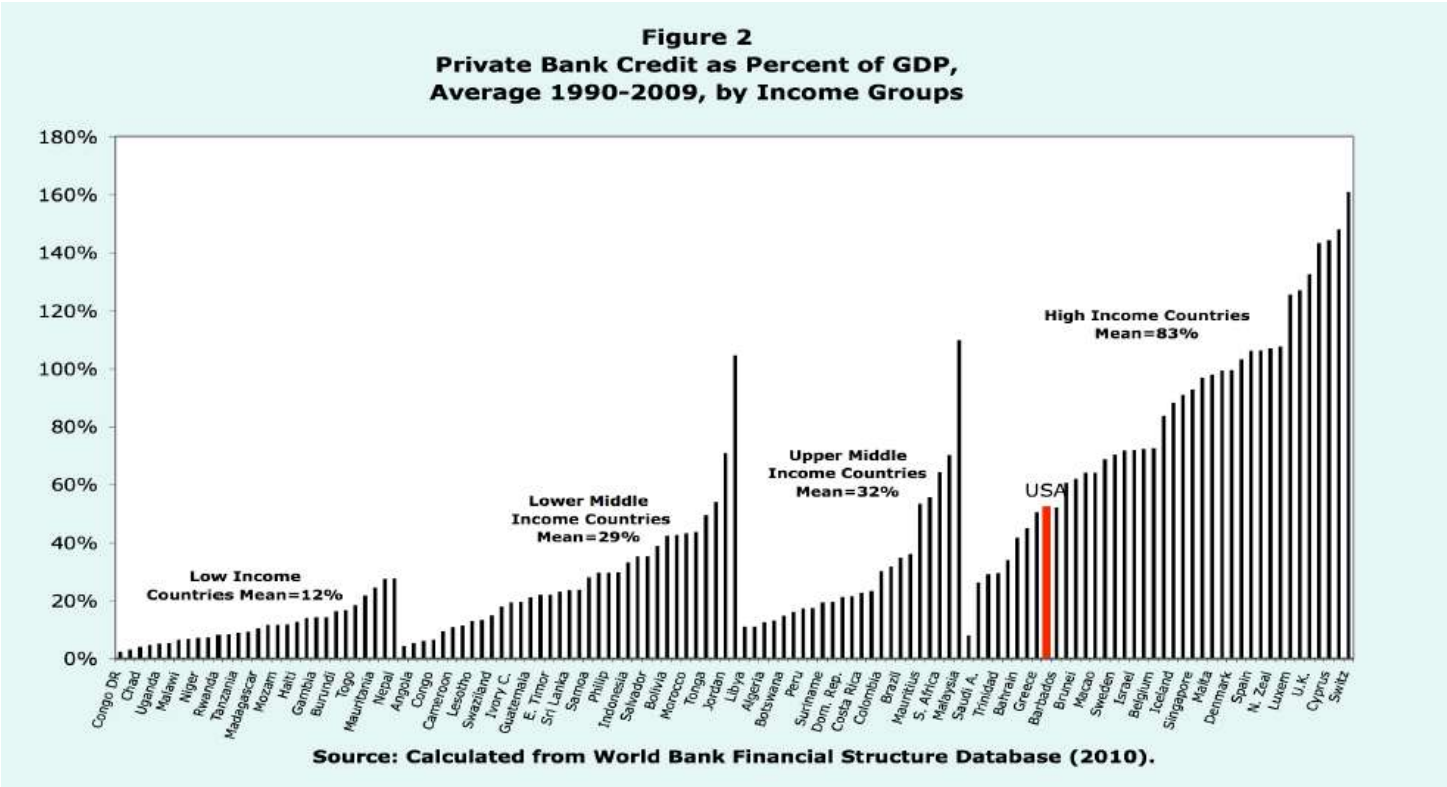


The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022 was awarded jointly to Ben S. Bernanke, Douglas W. Diamond and Philip H. Dybvig "for research on banks and financial crises"

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The bright side: High-income countries have large finance sectors



Source: Calomiris and Haber (2015): Fragile by design: The Political Origins of Banking Crises and Scarce Credit

The bright side: Better financial sector leads to better capital allocation

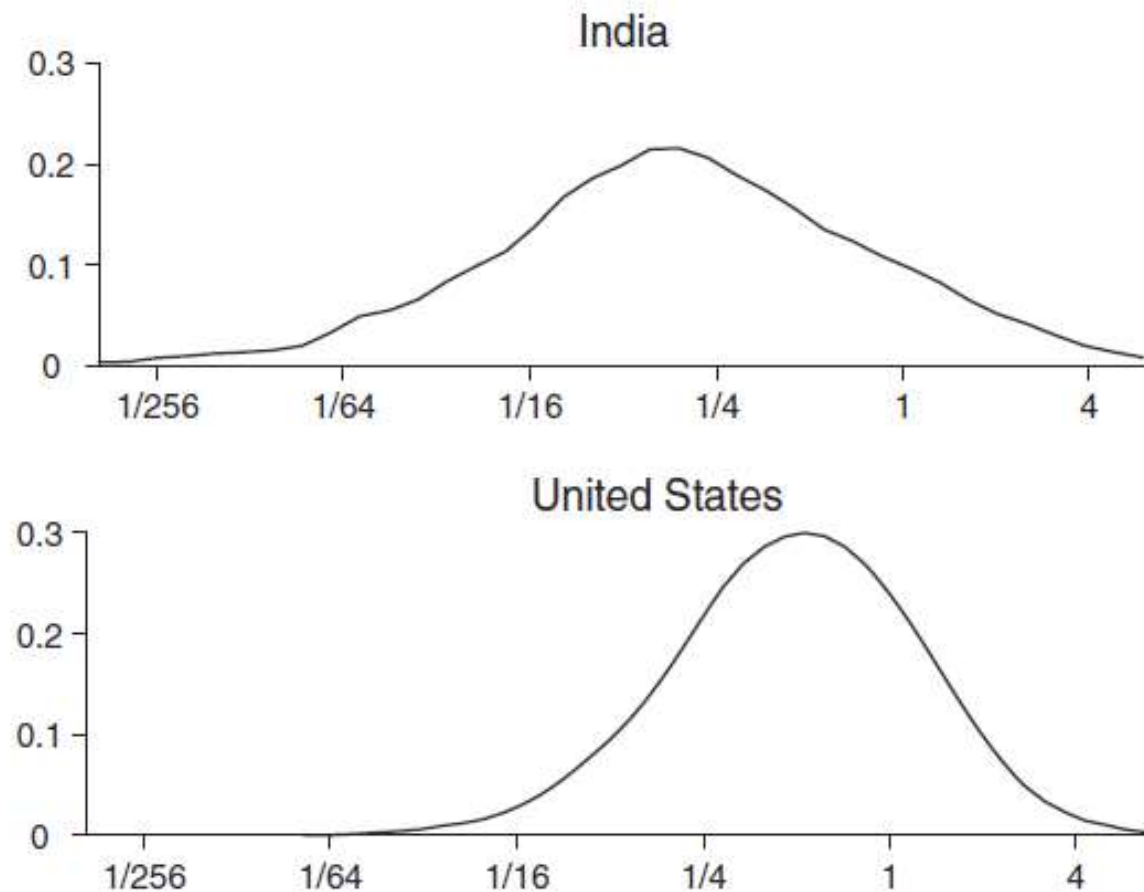


FIGURE I
Distribution of TFPQ

Source: Hsieh and Klenow (2009): "Misallocation and manufacturing TFP in China and India." *The Quarterly Journal of Economics* 124(4), 1403-1448.

Finance and Growth: Too Much Finance?

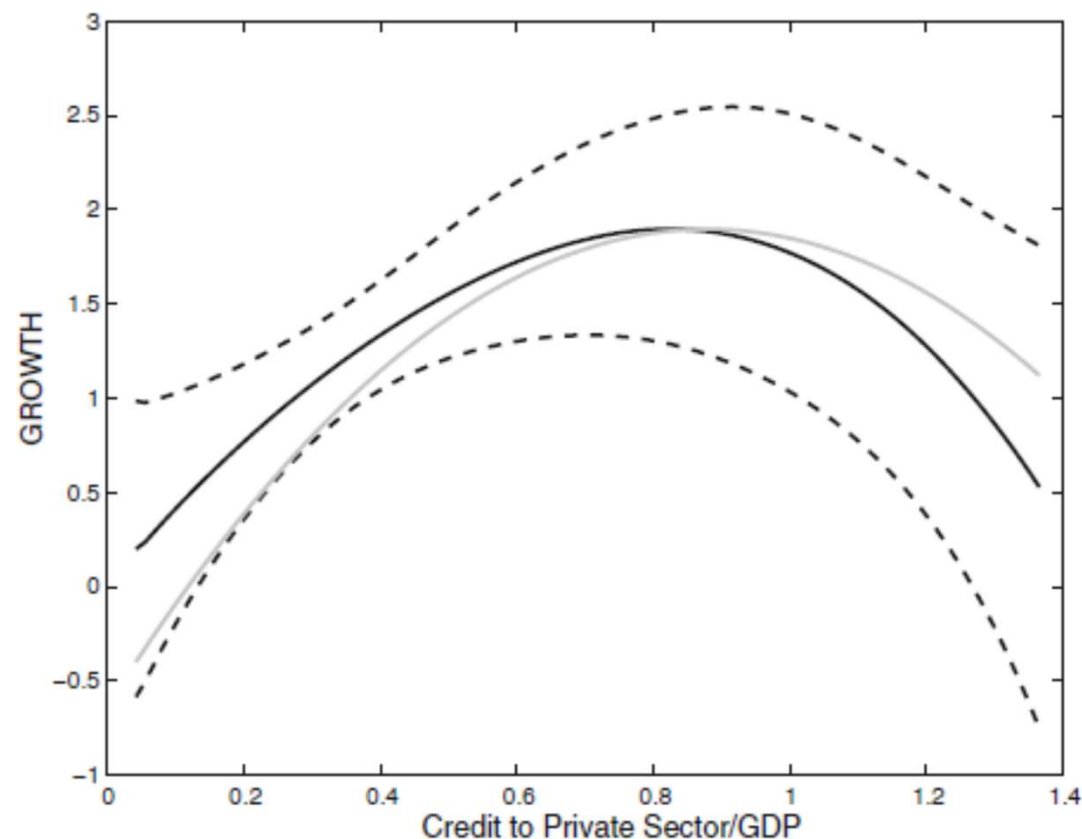


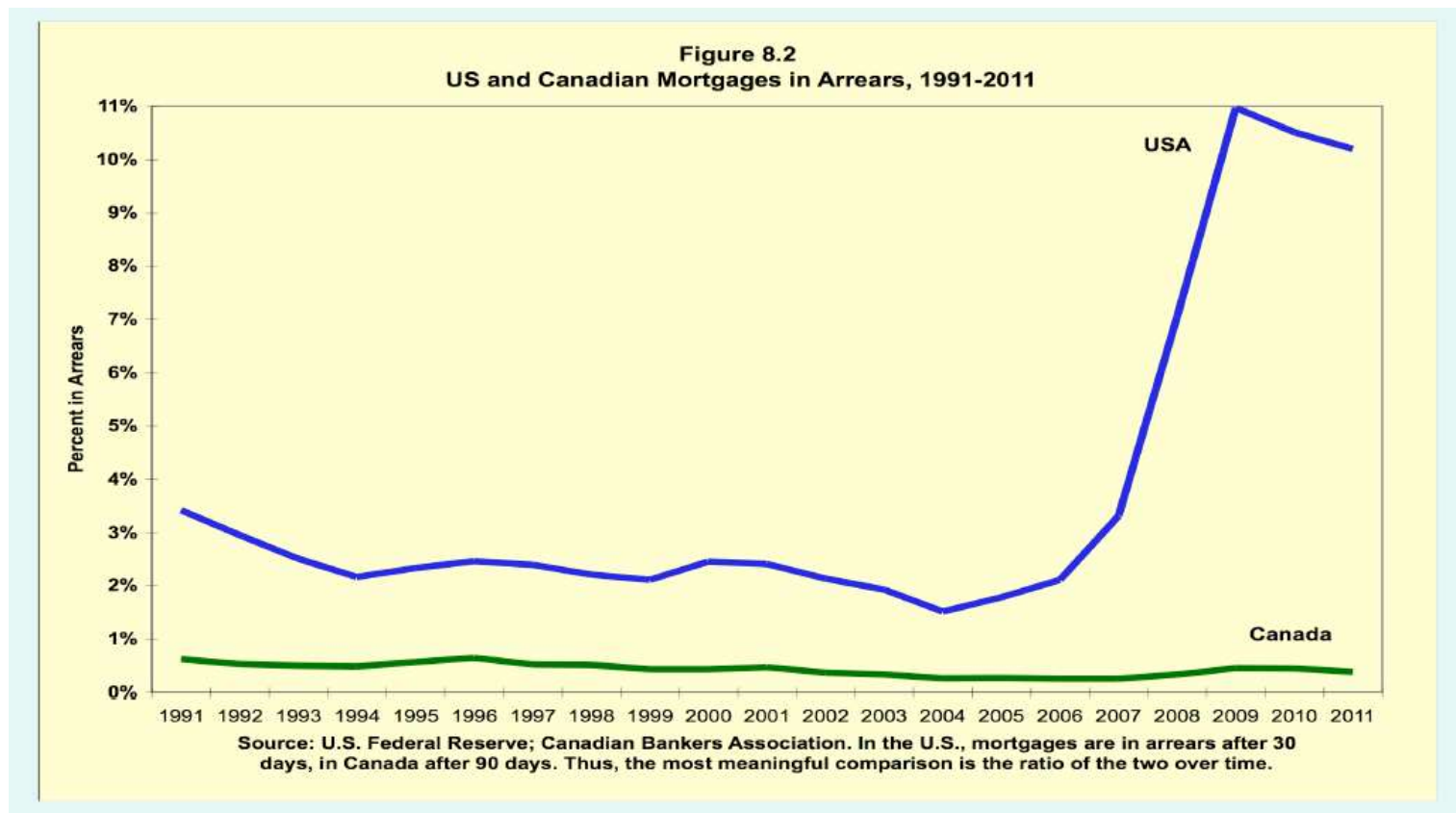
Fig. 2 Semi-parametric regressions. The *solid black line* plots the relationship between credit to the private sector obtained by allowing credit to the private to take a generic functional form. The *dotted lines* are 90% confidence intervals and the *light solid line* plots the quadratic fit of columns 6, Table 1

Sources: Arcand, Berkes, and Panizza (2015): Too Much Finance?, *Journal of Economic Growth* 20, 105-148;

ESRB Advisory Scientific Committee (2014): Is Europe Overbanked?, Reports of the Advisory Scientific Committee, No. 4, European Systemic Risk Board (ESRB), European System of Financial Supervision, Frankfurt a. M.;

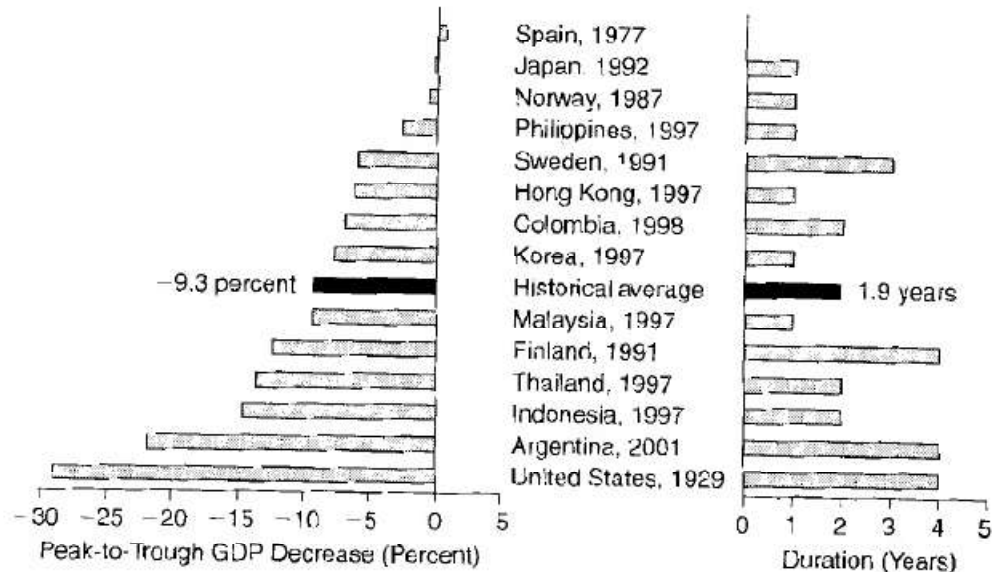
Gambacorta, Yang, and Tsatsaronis (2014): Financial structure and growth, in: *BIS Quarterly Review* March 2014, p. 21-35

The dark side: Failure of the financial sector to allocate resources...

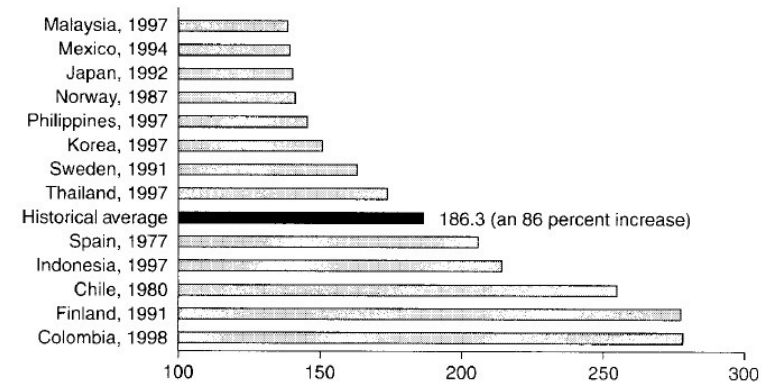


... can have detrimental effect on economies

Financial crises: Fall in GDP



Financial crises:
Increase in government debt



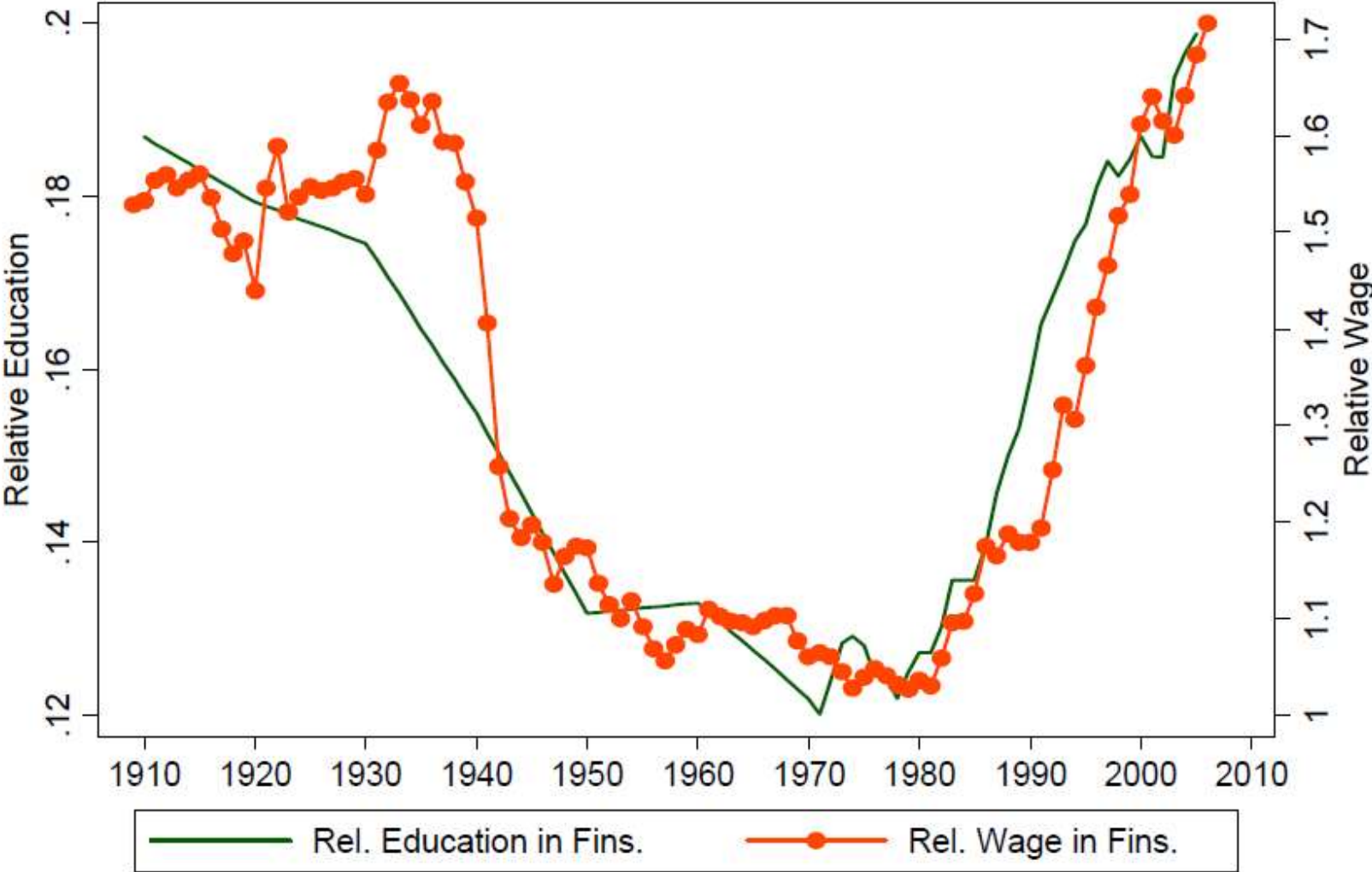
Unemployment: +7PP, Equity prices: -56%, House prices: -36%

Recent bank failures:
SVB, Signature Bank, Credit Suisse



Finance and inequality: Wages and education in the finance industry are high

Figure 1: Relative Wage and Education in the Financial Industry



Source: Philippon (2012): Wages and Human Capital in the U.S. Financial Industry: 1909-200, 6Quarterly Journal of Economics (2012)

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Financial markets and financial intermediaries

- Financial markets: Financial markets are markets in which funds are transferred from agents (people/firms/governments) who have an excess of available funds to agents (people/firms/governments) who have a need of funds
- Financial intermediaries: institutions that borrow funds from agents who have saved and make funds available to other agents in the economy
 - Banks: accept deposits and make loans
 - Insurance companies: channel long-term savings into financial assets
 - Other Financial Intermediaries: mutual funds, investment companies, hedge funds, more recently: various FinTechs in all areas, ...

Functions of financial markets and financial intermediaries

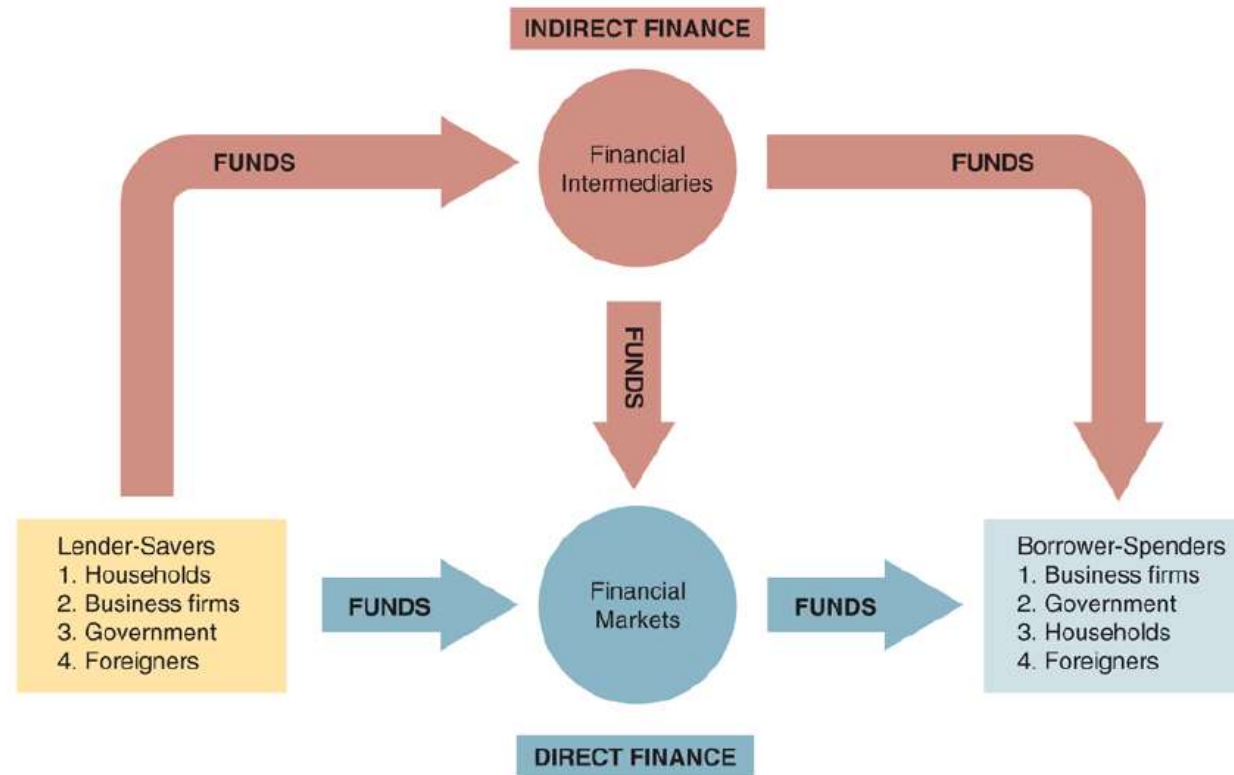
Channeling funds from surplus to deficit units

- Channeling funds from economic agents that have saved surplus funds to those that have a shortage of funds
 - Direct finance: borrowers borrow funds directly from lenders in financial markets by selling them securities
 - Indirect finance: financial intermediary between agents with surplus and agents with shortage of funds
- Effects (if designed properly)
 - Allocational efficiency: Promotes economic efficiency by producing an efficient allocation of capital, which increases production
 - Consumption smoothing: Directly improve the well-being of consumers by allowing them to time purchases better

Financial markets versus Financial intermediaries

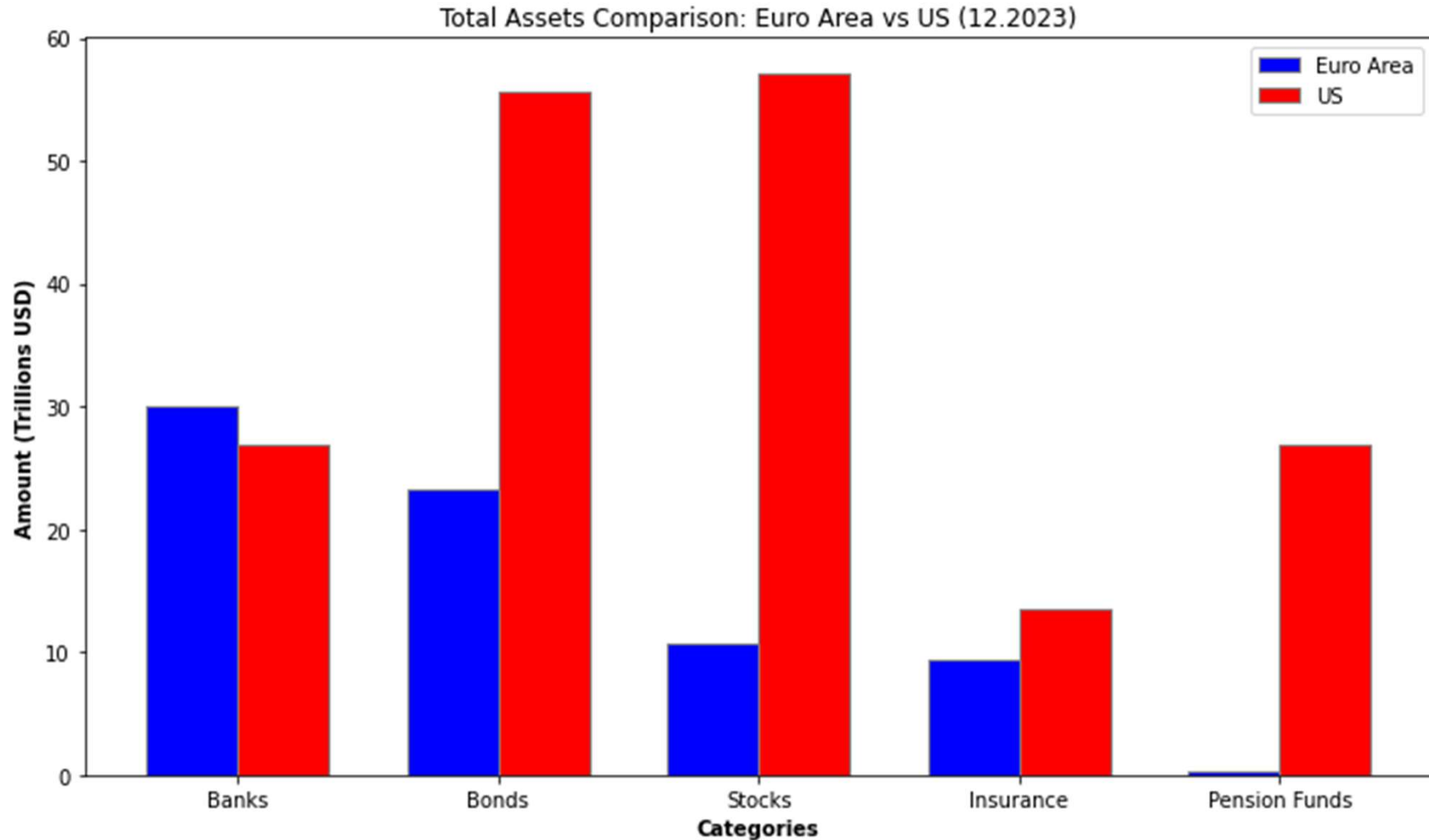
Flows of funds in the system

Direct versus indirect finance



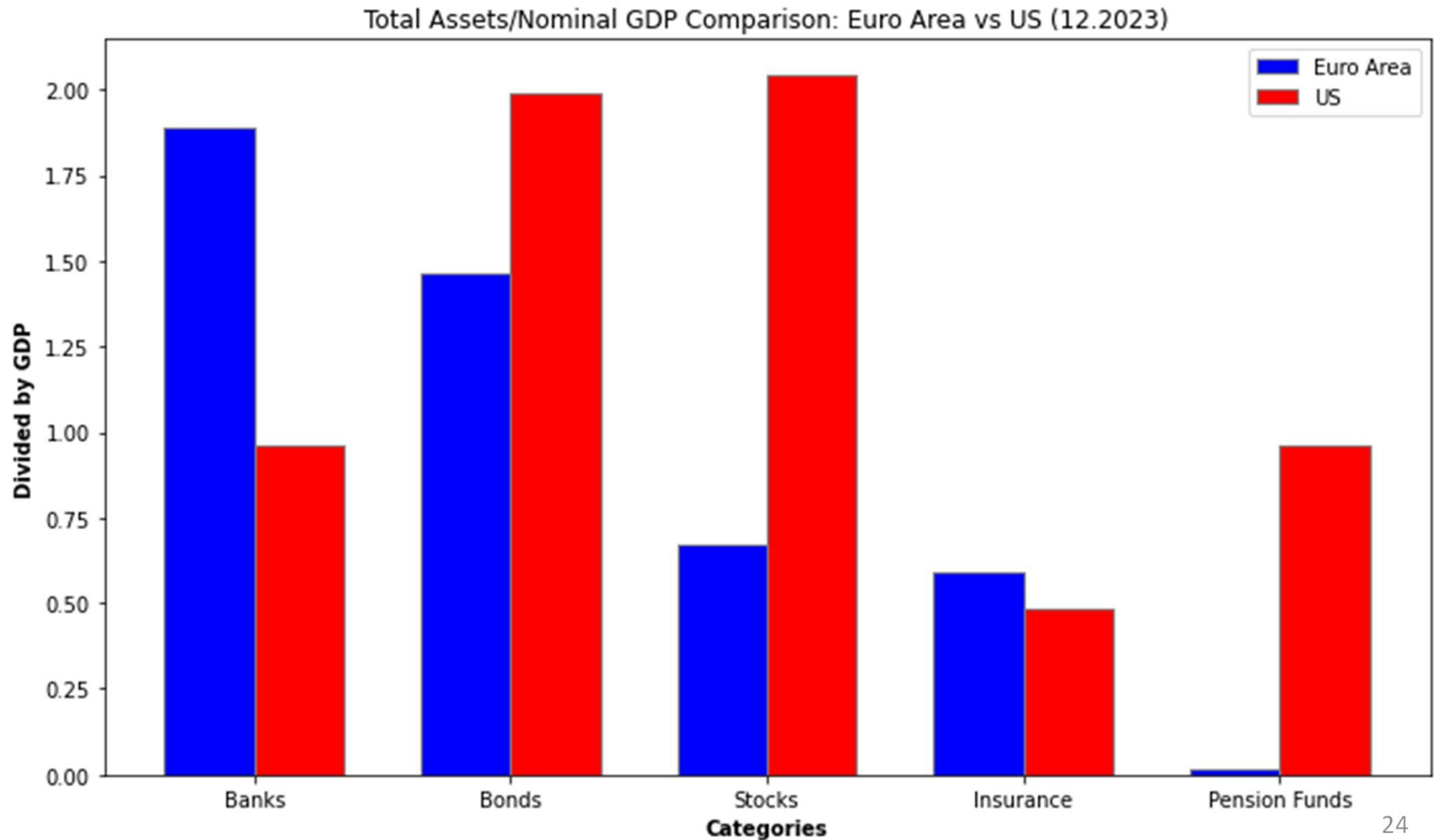
Financial markets: Eurozone vs. U.S.

In USD trillion



Financial markets: Eurozone vs. U.S.

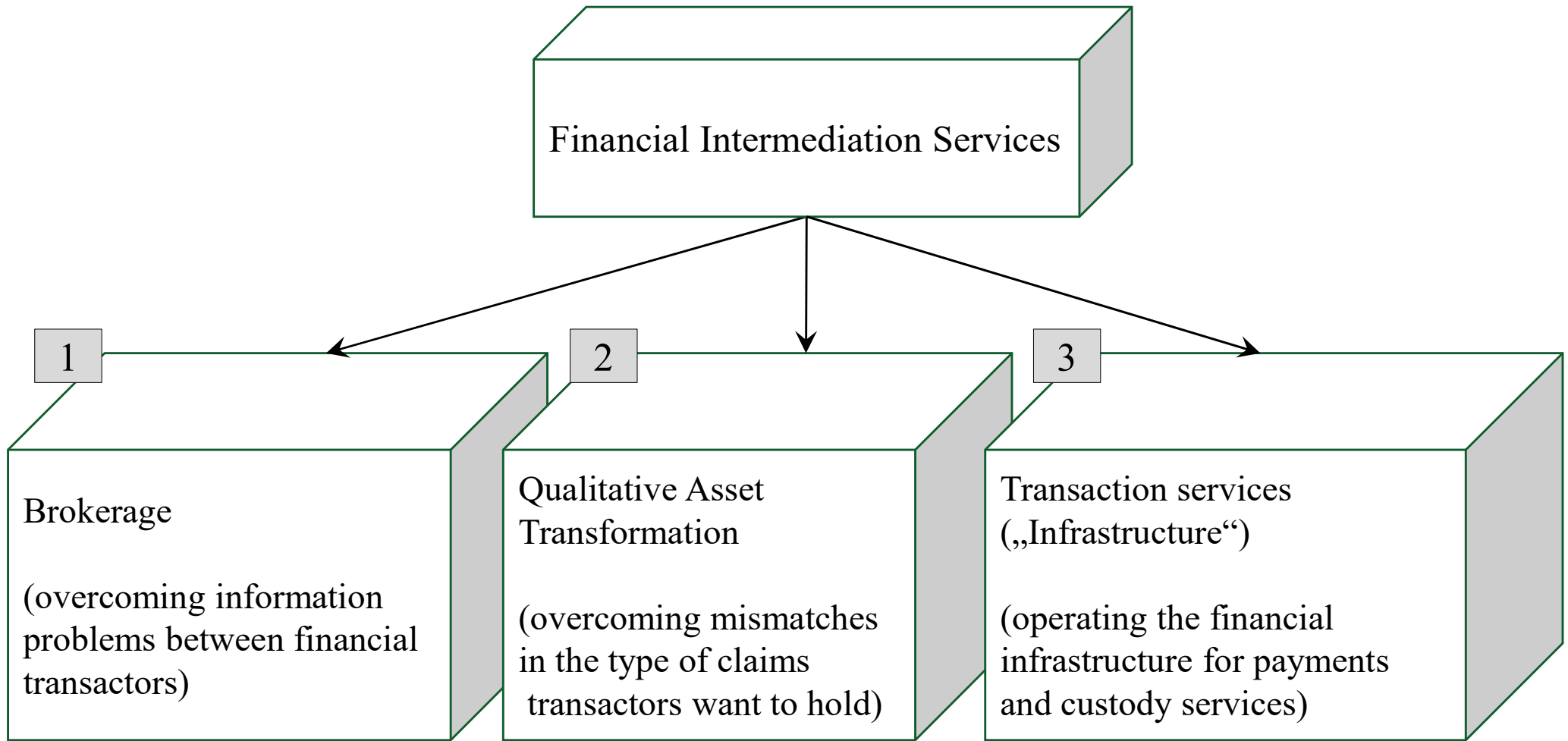
In % of GDP



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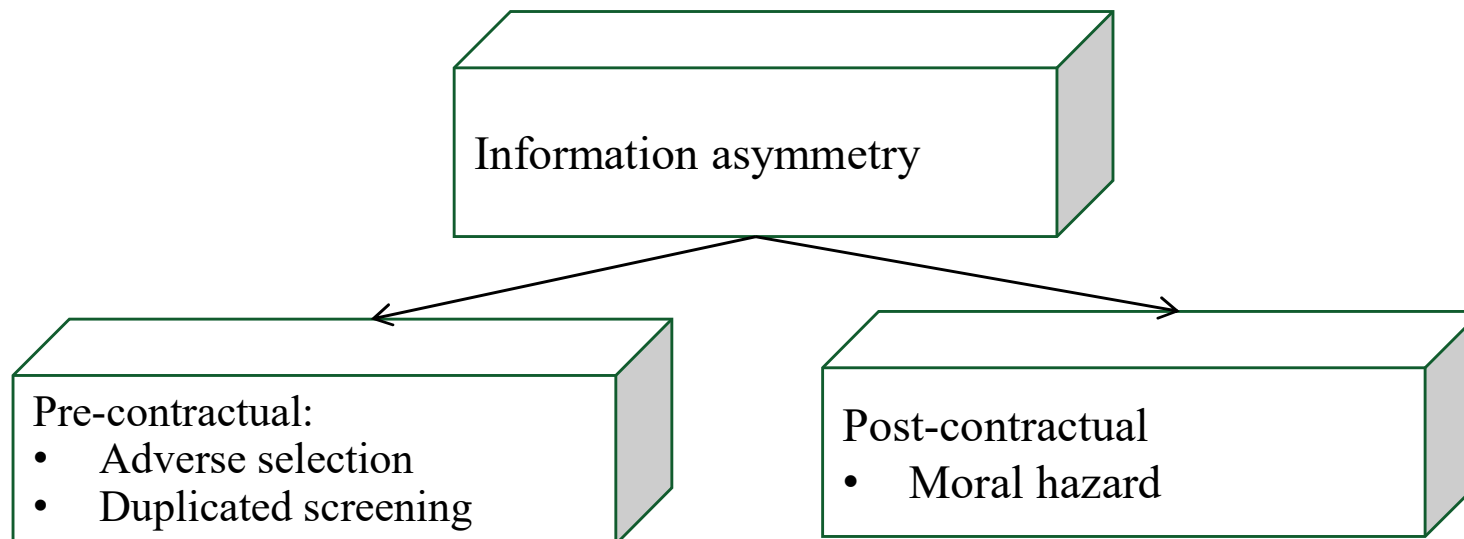
The 3 Key Services of Financial Intermediaries



*In simple terms:
Advice and management
of assets*

Brokerage

- Brokerage: helps bringing together transactors in financial claims with complementary needs
- Brokers do NOT act as principal in the purchase (sale), but only facilitate matching (used-car dealer does not fit the description of broker, most stockbrokers do not fit the description, marriage broker fits the description)
- Brokerage overcomes information asymmetries between (potential) transactors in financial claims (e.g. lenders and borrowers):



Pre-contractual: Adverse Selection / Duplicated screening

- Some examples
 1. Retail clients do not know how to best invest their wealth
 2. Bond investors cannot judge creditworthiness of firms
 3. Equity investors do not know quality of firms that plan an IPO
- Possible solutions: Advice or management of assets by specialized broker
 1. Wealth manager manages assets on client's behalf
 2. Rating agencies provide ratings so that investors can judge creditworthiness
 3. Investment bank helps to write prospectus and informs investors on road shows
- Note on Duplicated screening
 - Even if individuals are able to perform screening / credit assessment, there is wasteful expenditure if multiple individuals end up doing the same screening
 - Brokerage function has a value even if brokers are not per se better able to perform screening

Post-contractual: Moral Hazard

- Typical example of moral hazard from insurance: insured person/firm no longer has an incentive to avoid damage
- Other examples
 1. (Retail) investors do not know how to monitor a CEO's performance
 2. Bond investors are afraid of firms pursuing high-risk acquisitions, or being acquired by a risky firm
- Possible solutions: Monitoring
 1. Use proxy advisors to advise on voting behavior for shareholder meetings (see e.g. <https://corpgov.law.harvard.edu/2018/11/07/are-proxy-advisors-really-a-problem/> for a good discussion)
 2. Wealth manager shifts portfolio away from high-risk firms
- Note on duplicated screening (see last page) also applies to post-contractual moral hazard

Examples of Brokerage Services

- Wealth management
 - investment research for clients
 - execution of securities transactions for clients
- Rating agency
 - Rating of bond issuer
- Investment banking
 - marketing of IPO

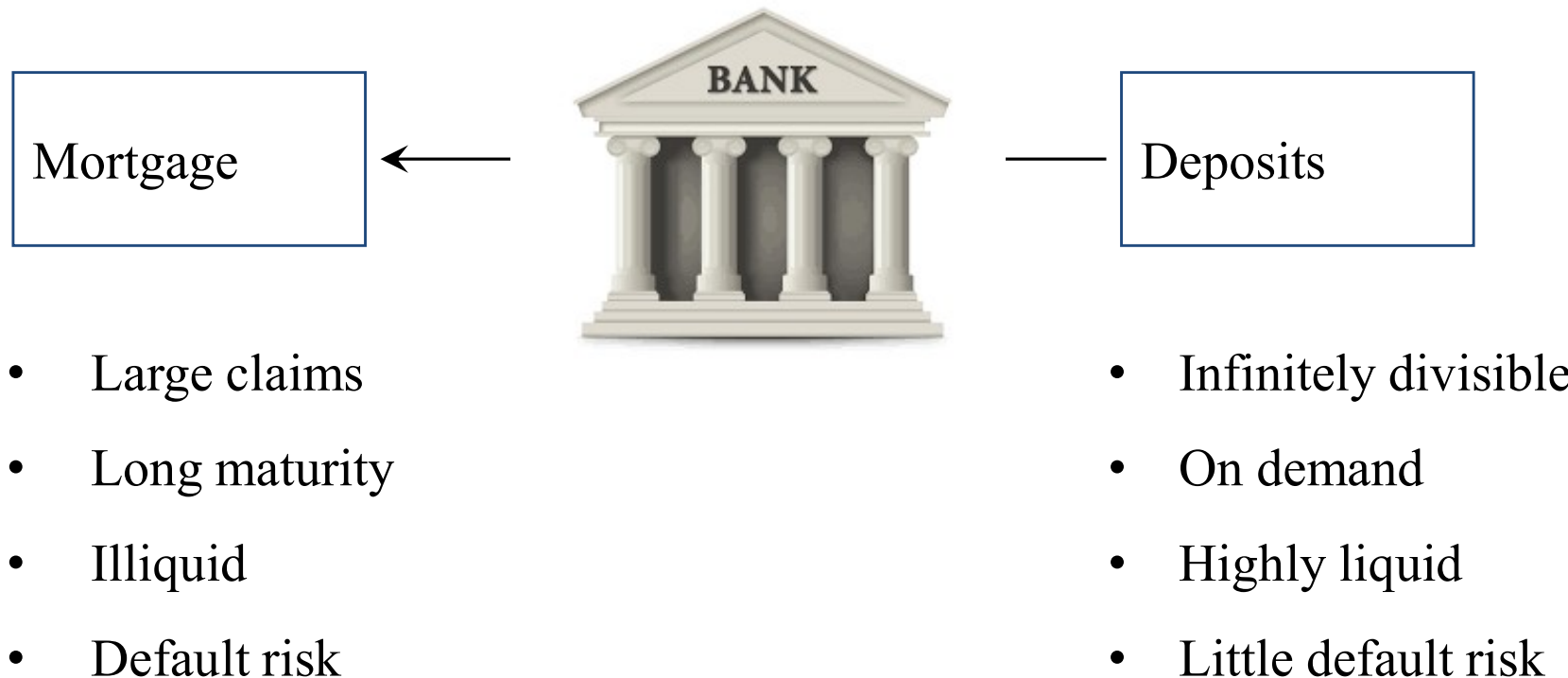
The logo for Julius Bär, featuring the company name in a blue serif font on a light yellow rectangular background.The logo for Moody's, featuring the company name in a large, blue, serif font.The logo for Goldman Sachs, featuring the company name in white sans-serif font on a blue square background.

The Value of Brokerage

- Cross-sectional information reusability
 - Screening/monitoring of one firm / individual helps screening/monitoring other firms / individuals
 - Example: Rating agency specializing in insurance companies
- Intertemporal information reusability
 - Having interacted with a firm / individual in the past helps screening/monitoring of this firm / individual in the future
 - Example: A bank that has marketed an equity issue of firm A might also be in a better position to market a bond issuance of firm A at a later stage

Qualitative Asset Transformation (QAT)

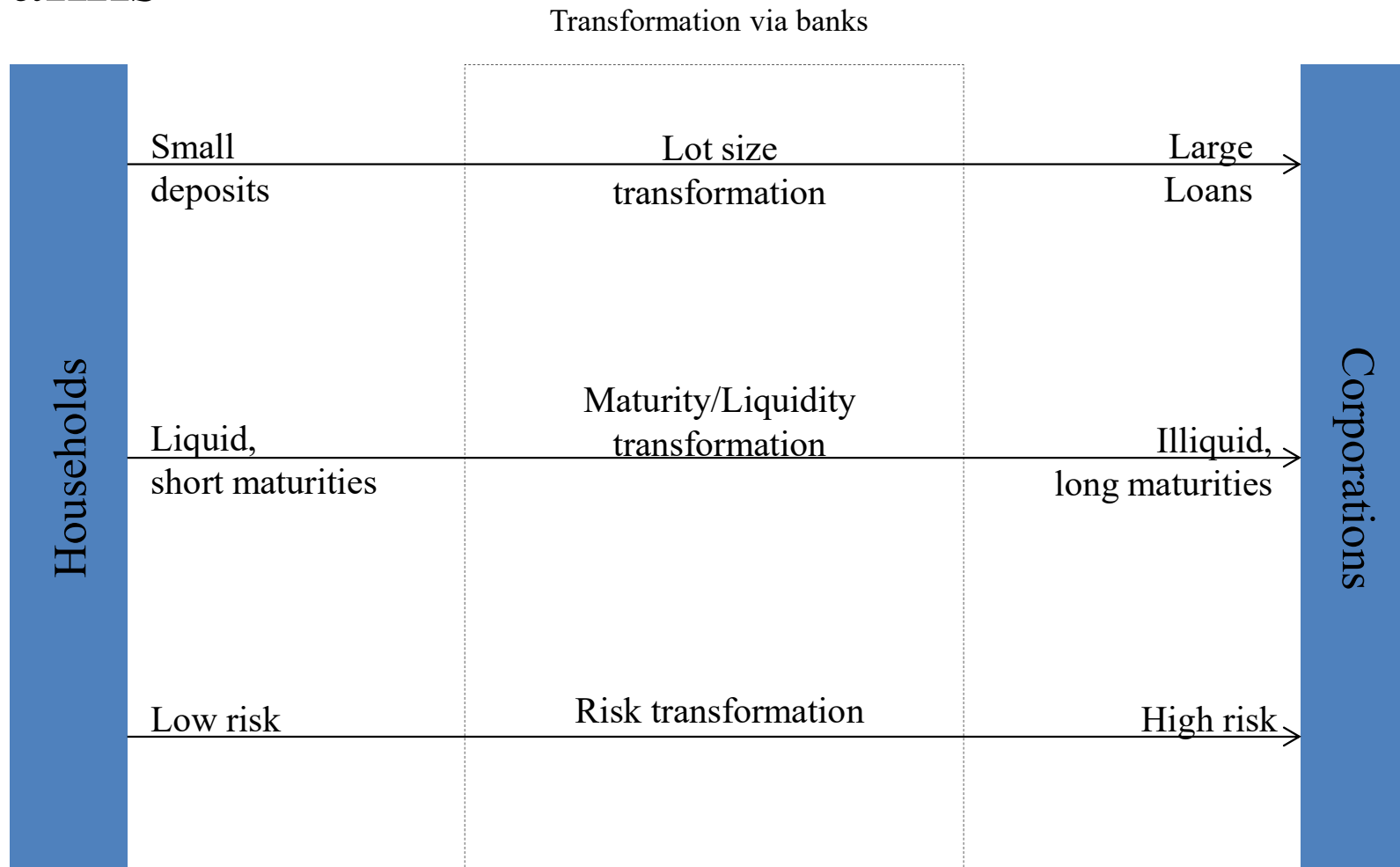
- QAT overcomes structural mismatches in the claims that financial transactors want to hold _____



Asset transformation involves risk

- QAT implies a mismatch on the F.I.'s balance sheet
 - Divisibility / Size of claims → lot size transformation
 - Duration → Maturity transformation
 - Liquidity → Liquidity transformation
 - Conditionality of claims → Risk transformation
 - Currency transformation
- QAT therefore inherently exposes the F.I. to risk
 - Interest rate risk
 - Liquidity risk
 - Credit risk
 - FX risk

QAT: The three main transformation functions of banks



Brokerage vs. Qualitative Asset Transformation

- Pure brokerage does not involve the taking of risk
 - e.g. mortgage brokers



- Qualitative asset transformation inherently requires F.I.'s to expose their capital to risk
 - e.g. mortgage lenders



Banks operate financial infrastructure

Area		Examples	In the news
Cash services		ATM Foreign currencies	“Thieves steal USD 60k after learning how to trick an ATM.”
Transfer + Cards		Check Bank transfer Debit cards Credit cards	“BNP to pay almost USD 9bn penalty for breaching U.S. sanctions on Iran, Sudan, and Cuba”
Securities services		Custodian Settlement Clearing	“MF Global tapped customer funds for its own use...” „How MF Global’s missing USD 1.5bn was lost – and found“

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Summary

- Financial markets and financial intermediaries foster growth and help to allocate capital efficiently.
 - But: Misallocation of resources by the financial sector with significant negative consequences
 - But: The financial sector can also contribute to a rise in inequality.
- Key function of financial markets: Transfer funds from people and firms who have an excess of available funds to people and firms who have a (profitable) need of funds.
- Financial intermediaries facilitate this transfer by intermediating between those with excess funds and those in need of funds. There are three key services of financial intermediaries:
 - Brokerage: Bringing together transactors in financial claims with complimentary needs
 - Qualitative Asset Transformation: Overcoming mismatches in the type of claims transactors want to hold
 - Operating the financial infrastructure