BANKING

Lecture 6 – Bank Regulation

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Key terms from Lecture 5/Market risk

- Market risk = change in market prices
- Market rates: LIBOR, PRIBOR,CZEONIA
- Interest rate risk – shifts in a yield curve
- Duration (sensitivity), convexity and BPV value
- Value at risk (VAR), Risk adjusted return on capital (RAROC)
- Portfolio immunization/Duration Gap Model
- Hedging and financial derivatives
- Stress testing
- Internal Capital Adequacy Assessment Process (ICAAP)

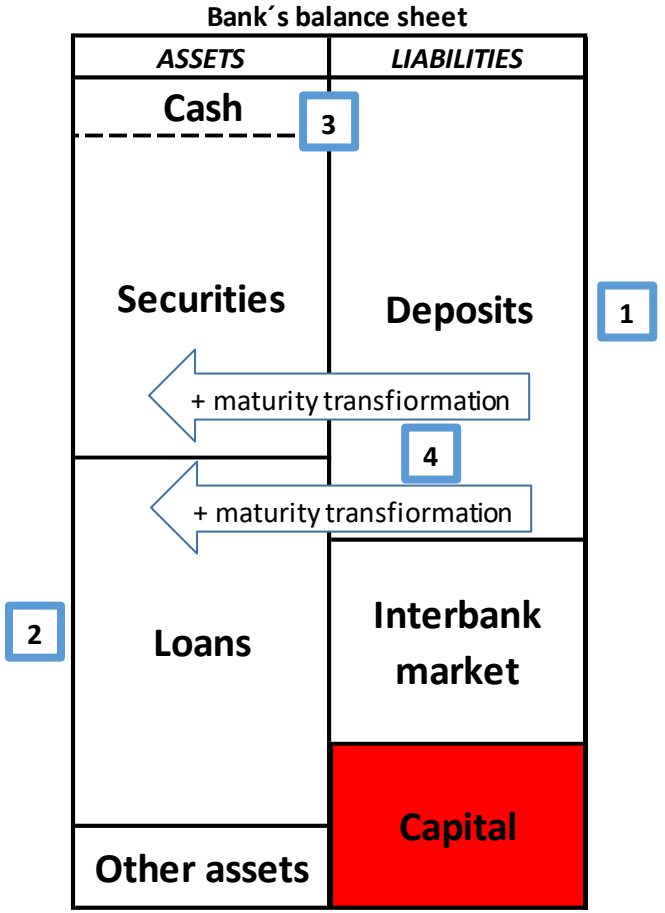
Contents

1. What bank function is the most regulated?

1. Theoretical background

4 main functions of a bank

1) accepting deposits
2) granting loans
3) providing payments
4) providing maturity transformation*



* Banks borrow short and lend long, i.e. from short-term depos they provide long-term loans and investments (=positive maturity transformation, unlike insurers that provide negative maturity transformation).

1. Theoretical background

Regulation vs supervision

Sanctions are important!

1) To create and enforce the conditions, rules and operational framework of banking institutions (**banking regulation "ex ante"**) – e.g. granting a license
2) To control if the rules are followed and to set and enforce sanctions for non-compliance (**banking supervision "ex post"**) – e.g. penalty for misconduct

- The basic framework of regulations is set by the Basel Committee on Banking Supervision (BCBS)/Bank for International Settlements (BIS), which proposes global standards that are implemented into national law.
- Regulatory and supervisory tasks are usually performed either by the
  - central bank (Czech Republic, the Netherlands, France) or
  - special financial authority (formerly the UK).

Regulation and central banks

- Major parts of the regulation of banks are the responsibility of international bodies such as the BCBS, the European Banking Authority (EBA), and the European Central Bank (ECB) through the Single Supervisory Mechanism (SSM).
- The role of central banks when they have regulatory responsibilities is largely in the area of supervision.
- Central banks have an interest in all aspects of bank regulation and bank business models that have a potential impact on systemic financial stability

1. Theoretical background

Basel implemention in the EU

- The basic framework of regulations is set by the BCBS.
- These rules prepared by this Committee are only recommendations (global standards) , but today they are widely accepted by more than 100 countries.
- The EU transforms the rules through regulations and directives that are being adopted by member countries, including the Czech Republic.
- In the EU Basel III has been implemented through
  a) in 2013: Capital Requirements Regulation*, Capital Requirements Directive**, commonly known as Capital Requirements Directive IV (**CRD IV**)
  b) in 2019: CRR II and CDR V (**the European banking package** in June 2019)

*Regulation (EU) No 575/2013 of the European Parliament and of the Council (2013)
** Directive 2013/16/EU of the European Parliament and of the European Council (2013)

2. What are two objectives of bank regulation?

Two objectives of regulation

- **Objective 1** - lowering the probability of bank failures
- **Objective 2** - minimizing the social costs of failures that do occur.
- Regulatory regime = the combination of these two core objectives.
- One of the lessons of the 2007-2009 Global Financial Crisis (GFC): prior to the crisis, the main focus on Objective 1, while little attention to Objective 2.
- A central imperative of the post-GFC regulatory reform strategy: to limit claims on taxpayers and to prevent risks being shifted to them

Source: Llewellyn, L.T. (2019). Central Banks and the New Regulatory Regime for Banks. The Oxford Handbook of the Economics of Central Banking

Failure of Objective 2 during the GFC

- Given the limited resolution arrangements that were in place for most countries prior to the onset of the GFC, governments had little choice other than to **bail out*** key financial institutions that were in serious distress. This, in turn, imposed costs on taxpayers and created moral hazard for the future.
- Result of bailouts: the taxpayer becomes the insurer-of-last-resort, albeit on the basis of an inefficient insurance contract as no ex-ante premiums are paid by the industry.
- Recent trend: from bailout to bail-in (see below)

*Bail-out = the rescue of a financial institution by external parties, typically governments, using taxpayers' money for funding; Bail-in = a debt-equity swap

Importance of bank culture

- In addition to Objectives 1 and 2, **bank culture** should become a central issue when considering the optimal regulatory régime (inappropriate culture can impose reputation damage, financial instability when the culture creates incentives for excessive risk- taking, and consumer damage)
- Furthermore, the culture within a regulated firm is likely to have an impact on the firm's approach to regulation and its attempts at aggressive regulatory arbitrage (Llewelyn, 2019).
- Detailed and prescriptive rules are a necessary but not sufficient part of any regulatory regime.

* Source: Llewellyn, L.T. (2019). Central Banks and the New Regulatory Regime for Banks. The Oxford Handbook of the Economics of Central Banking

1. Theoretical background

The endogeneity problem in theory

- Regulatory strategy conventionally assumes that problems to be addressed by regulation (e.g., excessive risk-taking by banks) are exogenous to the regulatory process.
- The endogeneity problem -> higher cost of regulation because it engenders a rules-escalation process. By raising regulatory costs, this becomes part of the trade-off between the two objectives 1 and 2.
- The endogeneity problem of regulation = banks seeking to minimize regulatory costs through regulatory arbitrage*

* a corporate practice of utilizing more favorable laws in one jurisdiction to circumvent less favorable regulation elsewhere. This practice is often legal as it takes advantage of existing loopholes; however, it is often considered unethical.

The endogeneity problem in practice

- The **Basel II** capital accord* **created incentives for banks to remove assets from their balance sheets**, for securitization, the creation of structured investment vehicles and other off-balance-sheet vehicles, excess gearing, and the use of a range of credit risk-shifting derivatives such as credit default swaps (CDS) and synthetic collateralized debt obligations (CDOs).
- Evidence: **detailed regulation at the time did not prevent the GFC** and, to some extent, may have contributed to it

* For more details see the next lecture on Bank Capital

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3. What are reasons for bank regulation?

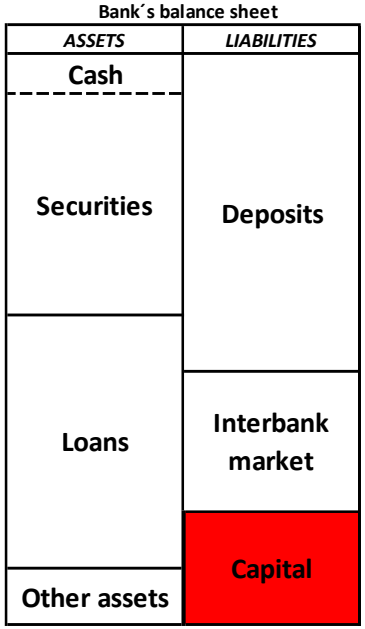
Three main reasons for bank regulation

1) information asymmetry

(adverse selection + moral hazard)

2) systemic risk

3) high leverage of a bank



1. Information asymmetry

- **Information asymmetry** - two participants of the exchange have different information on the conditions of the contract/exchange to be concluded.
- The „**principal – agent**“ problem in banking through the relationships:
- creditor – debtor
- depositor – bank
- bank owners – managers
- bank headquarters – branches

Adverse selection (ex-ante)

- a problem arises before the transaction occurs.
- *Example 1:* before granting a loan, the credit applications will come more frequently and with strongest endeavor from applicants representing the highest risk for the bank, and the risk premium itself will not compensate for that risk
- *Example 2:* subsidized loans from the Czech Export Bank, a state-owned bank, attract risky clients and projects (at the expense of a taxpayer)

Moral hazard (ex-post)

- a problem arises before the transaction occurs
- in case of a vague loan agreement, some debtors will have the opportunity to become interested in *immoral behaviour* that is contrary to the debtor's interests (e.g. borrowed funds will not be used for the agreed purpose).
- hence it lowers the probability of meeting the debtor's obligation to repay the loan, while the debtor remains unsanctioned.
- 100% deposit insurance < EUR 100,000 in the EU = institutional moral hazard (depositors do not distinguish between risky and stable banks)

2. Systemic risk

- = the risk of widespread disruption to the provision of financial services that is caused by an impairment of all or parts of the financial system, which can cause serious negative consequences for the real economy (IMF et al., 2016*).
- = threat of market contangion
- related terms: bank run, panic, chaos

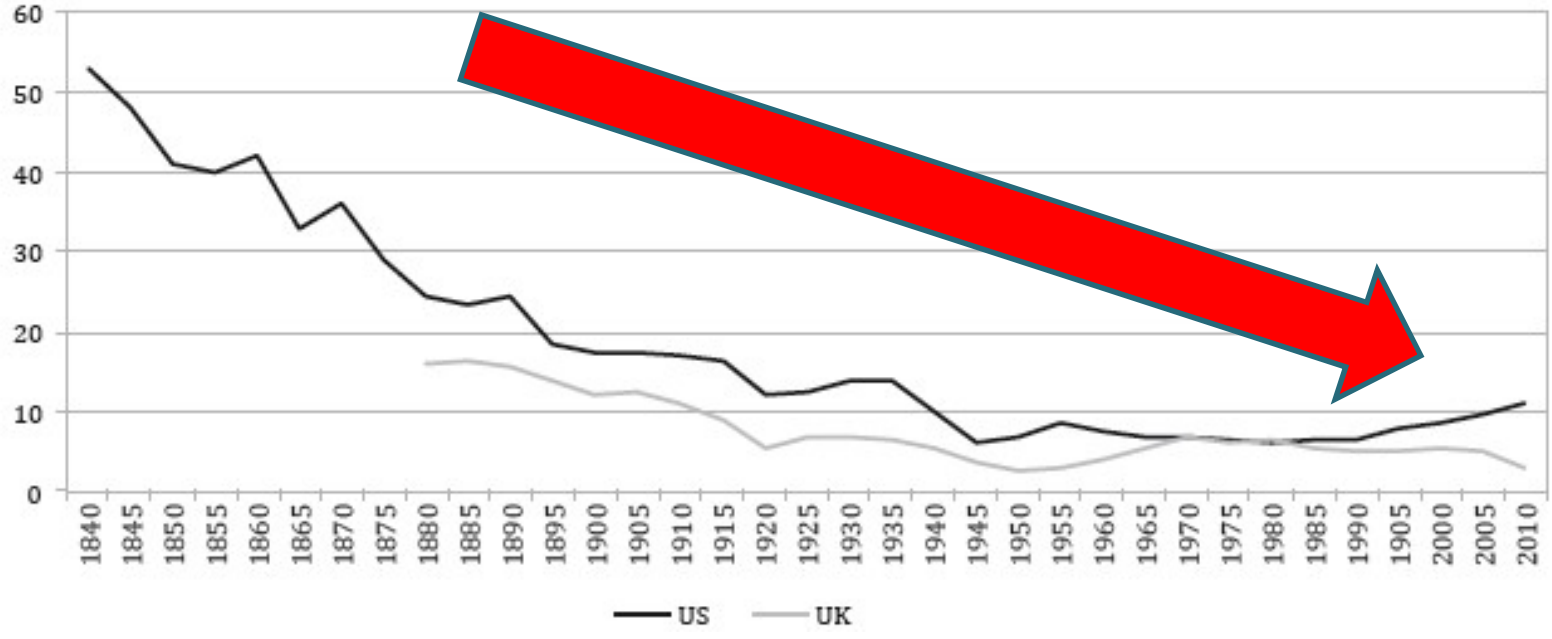
* Source: International Monetary Fund, Financial Stability Board, and Bank for International Settlements (2016). "Elements of Effective Macroprudential Policies: Lessons from International Experience." Washington, DC, August 31.

2. Basic terms

3. High leverage of banks: a decreasing capital ratio (high gearing ratio)

- Recent low share of equity on bank´s total liabilities (5-10%)

Figure V-1: Banks' equity as % of assets in the US and the UK in December 31, 1840 – December 31, 2010



4. Why banks are highly leveraged?

2. Basic terms

Banks´ shareholders maximize Return On Average Equity (ROAE)

Financial firms

$$ROAE(\uparrow) = \frac{Net\ profit\ (\uparrow)}{Average\ equity(\downarrow)}$$

Focus on profit maximization

Contents

3. Bank reg. & supervision in the CR

Bank regulation in CR (legal framework)

- The Czech National Bank = regulator and supervisor of the Czech financial market
- Act No 6/1993 Coll. on the Czech National Bank (CNB)
- Act No 21/1992 Coll. on Banks
- Basel III has been implemented in the EU through CRD IV, which has been implemented in the CR through Act on Banks and CNB´s decrees (primarily through **CNB Decree No. 163/2014** Coll. on the performance of the activities of banks, credit unions and investment firms – **important for bank risk management in the CR**)
- *Note: Regulations are the most direct form of EU law compared to EU directives, which are addressed to national authorities.*

3. Bank reg. & supervision in the CR

Other central bank activities influencing the private banking business

- Monetary policy measures
  - Open market transactions (especially repo and reverse repo transactions) – see the last lecture
  - Basic rates of the CNB: 2-week repo rate, discount rate, lombard rate
  - Minimum reserves (mandatory minimum reserves requirement = 2%)
  - LOLR (central bank as a lender of last resort)
  - FX market interventions (e.g. the CNB in May 1997 and November 2013 – April 2017)
  - *See a later lecture on Central Banking*

Contents

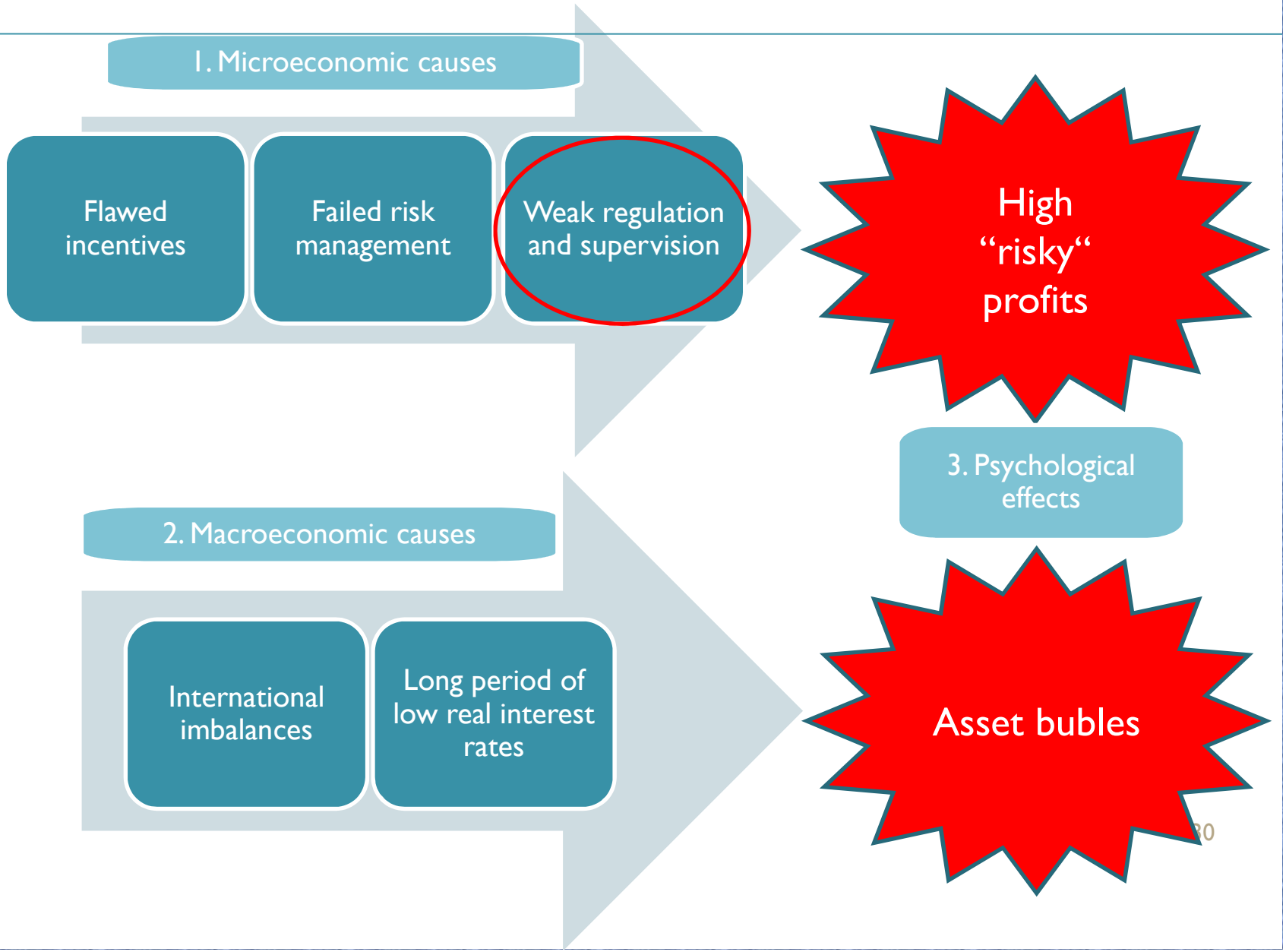
4. Regulation after the GFC

7 main topics

1) Weak regulation as one of causes of the GFC
2) Aims of the new regulatory architecture
3) Recent trend: separation of investment and commercial banking
4) New European Supervisory Framework
5) The European Banking Union (EBU)
6) The Bank Recovery and Resolution Directive (BRRD)
7) Application of the bail-in tool within the BRRD
8) The European banking package (June 2019)

4. Regulation after the GFC

1. Weak regulation as one of causes of the GFC



4. Regulation after the GFC

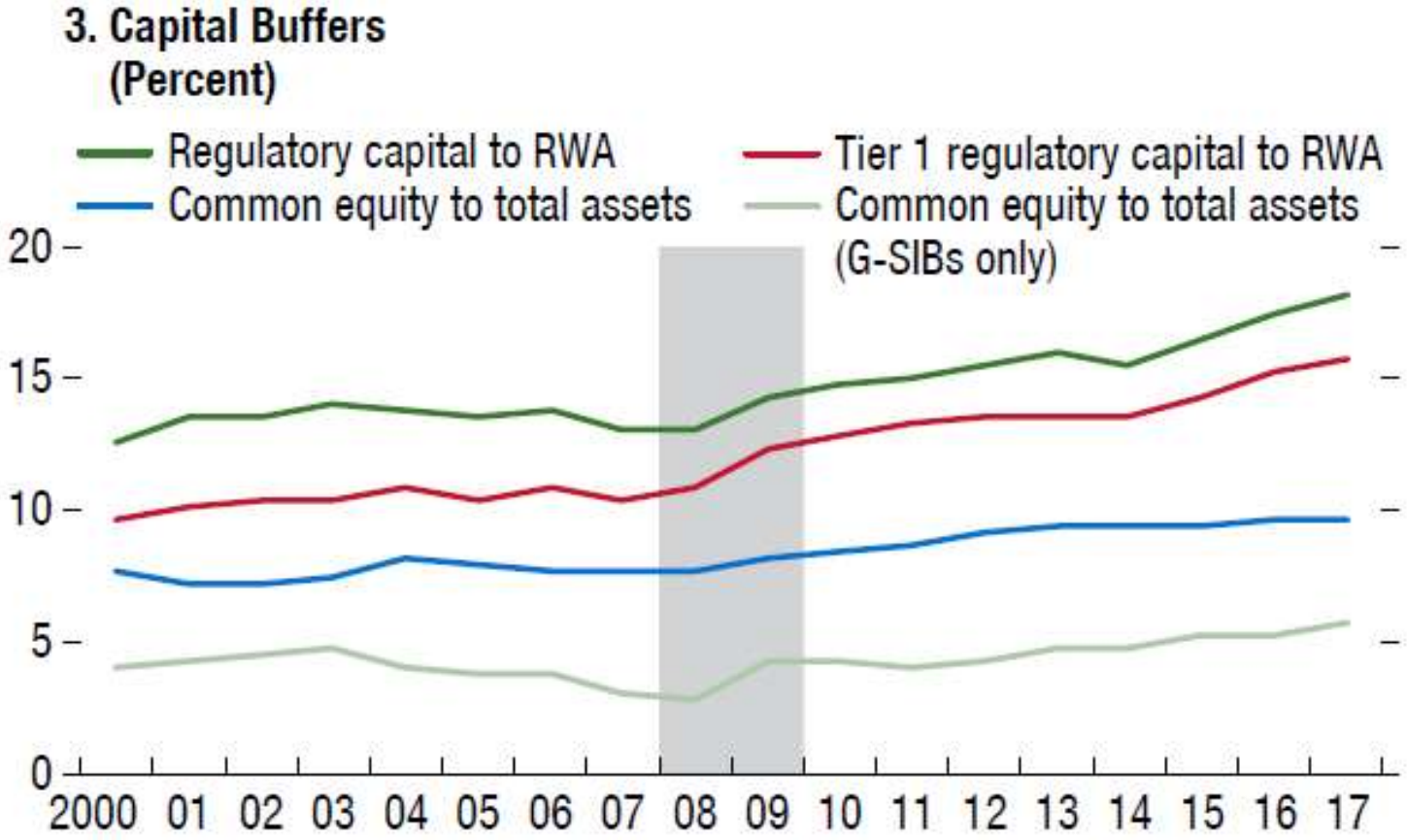
2. Aims of the new regulatory architecture after the GFC

1) enhance capital buffers and reduce leverage and financial procyclicality (see the next slide),
2) contain funding mismatches and currency risk,
3) enhance the regulation and supervision of large and interconnected institutions,
4) improve the supervision of a complex financial system,
5) align governance and compensation practices of banks with prudent risk taking
6) resolution regimes of large financial institutions.

Source: IMF (2018). Global Financial Stability Report, International Monetary Fund October 2018

4. Regulation after the GFC

Higher regulatory capital ratios (e.g. capital/RWA), but still low accounting ratios (e.g. equity/assets)



Source: IMF (2018). Global Financial Stability Report, International Monetary Fund October 2018

4. Regulation after the GFC

3. Recent trend: separation of investment and commercial banking

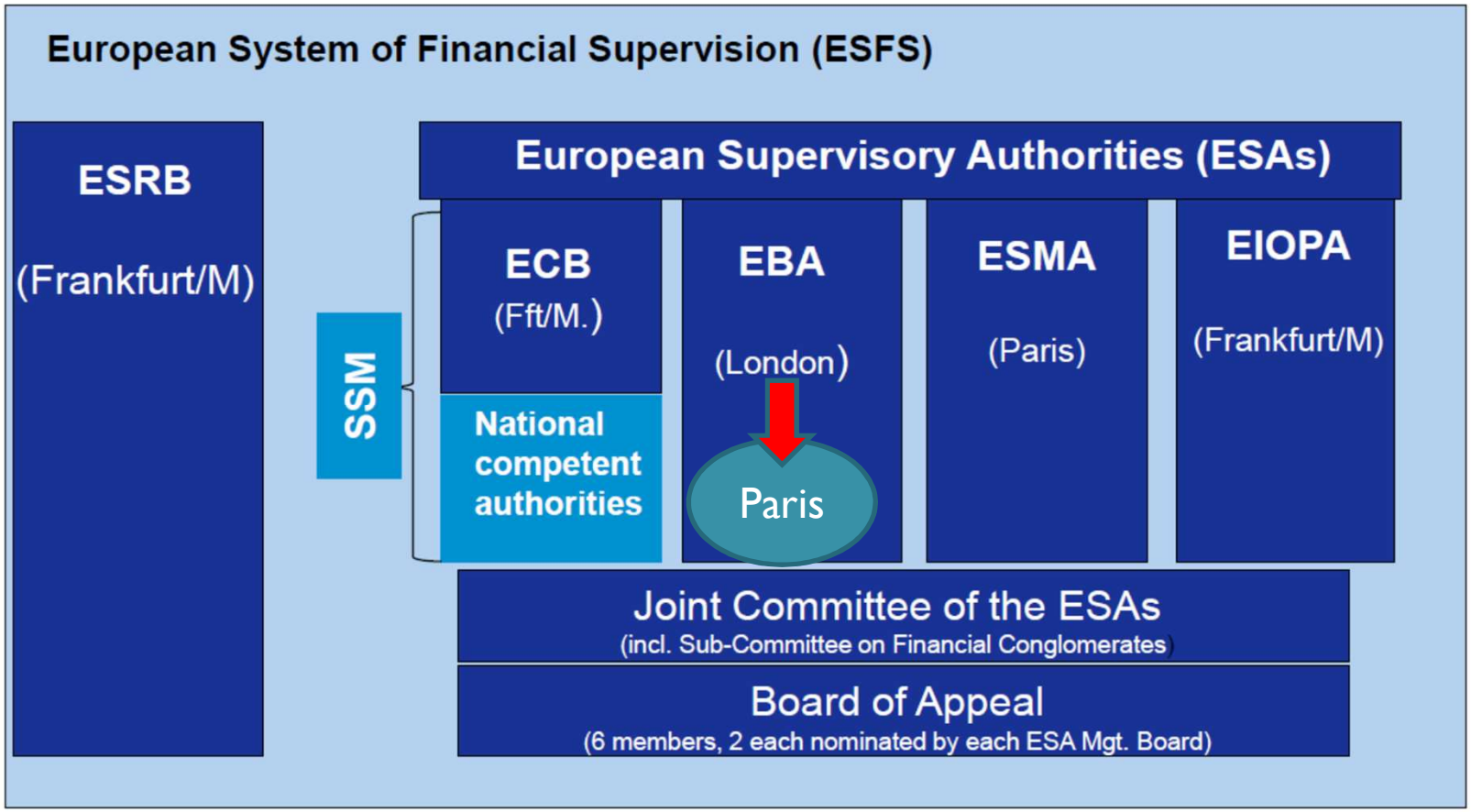
- USA: Volcker rule: the restoration of Glass-Steagall Act
  - ✓ **institutional separation** of commercial banking and certain investment activities
- EU: Liikanen report
  - ✓ **subsidarisation**: proprietary and higher-risk trading activity have to be placed in a separate legal entity
- GB: Sir Vicker´s report
  - ✓ **ring-fencing**: structural separation of activities via a ring fence for retail banks

Source: Gambacorta, L., van Rixtel, A. (2013). Structural bank regulation initiatives: approaches and implications, BIS Working Paper , No. 412

4. Regulation after the GFC

4. New European Supervisory Framework

Comprehensive approach, but multiple players



Source: Schildbach, J. (2014). Banking & regulatory trends in Europe, Deutsche Bank Research, 21. 10. 2014

4. Regulation after the GFC

5. The European Banking Union (EBU) – its purpose and 3 pillars

- Purpose of the EBU: "…*to break the vicious circle between banks and sovereigns*"

1) **single rule book for banks** (including capital requirements under CRD IV,* harmonization of deposit insurance and resolution);
2) **single supervision** (encompassing Single Supervisory Mechanism (SSM) under the ECB since November 4, 2014);
3) **single resolution regime for banks in trouble** (Single Resolution Mechanism (SRM), supported by a Single Resolution Fund (SRF));

*Capital Requirements Directive IV = Capital Requirements Regulation (CRR)10 and Capital Requirements Directive (CRD) dated June 2013

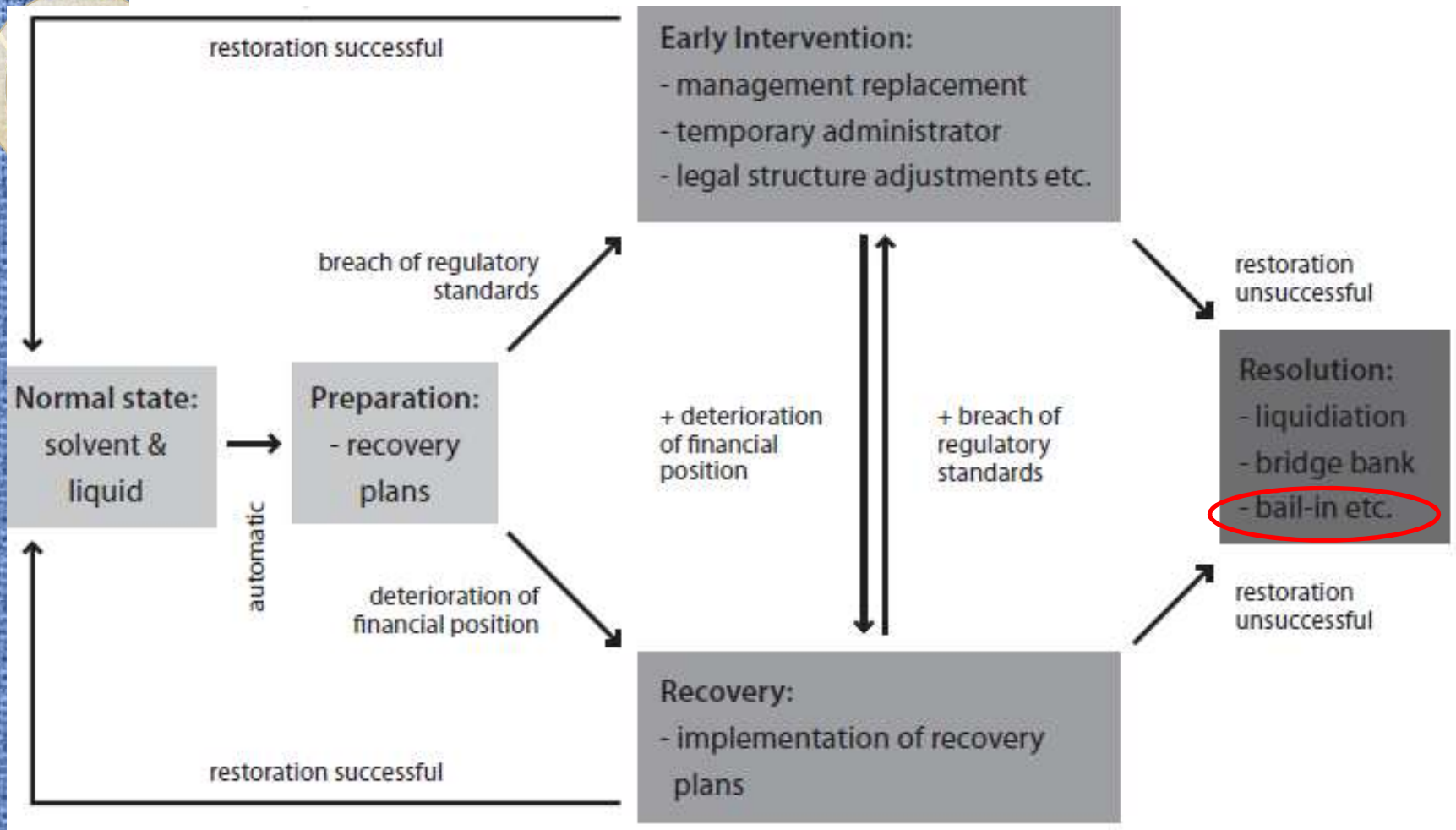
4. Regulation after the GFC

6. The Bank Recovery and Resolution Directive (BRRD)/Pillar 3 – SRM:

- The Bank Recovery and Resolution Directive No. 2014/59/EU ("**BRRD**") establishes a common framework for the recovery and resolution of banks and large investment firms in the EU.
- Shareholders and creditors of failing institutions will pay their share of costs through a "**bail-in**" mechanism, whereby the value of shares, bonds, uninsured deposits or other liabilities of any such institution may be written down or liabilities may be converted into equity.
- The bail-in is subject to the order of priority specified in the implementing legislation, which may to some extent differ across the EU.
- Case study: Monte dei Paschi di Siena (Italian bank)

Source: White & Case (2016). Italy implements the Bank Recovery and Resolution Directive

4. Regulation after the GFC
BRRD: Recovery and Resolution Process



Source: Kabelík, K. (2014). Banking Regulation: Trends & Impacts. The Czech Banking Association

4. Regulation after the GFC

BRRD: Resolution tools

Sale of business	Sale to a third party purchaser of the shares or part or all of the assets, rights or liabilities of the institution under resolution.
Bridge institution	Transfer of the shares or part or all of the assets, rights or liabilities of the institution under resolution to a temporary "bridge" entity wholly or partially owned by the resolution fund (or other public authorities) and created with a view to maintaining access to critical functions and selling the transferred shares, assets, rights and liabilities.
Asset separation	Transfer of assets, rights or liabilities of the institution under resolution to an asset management vehicle (also known as a "bad bank").
Bail-in	Write-down and/or conversion of the liabilities of the institution under resolution.

- These resolution tools may be applied individually or in any combination.
- However, the asset separation tool may only be applied together with another resolution tool.

Source: White & Case (2016). Italy implements the Bank Recovery and Resolution Directive

5. Is bail-in relevant more for Objective 1 or Objective 2 of regulation?

4. Regulation after the GFC

7. Application of the bail-in tool 1/3

Assets (A)		Liabilities (L)	
Loans	30	20	Insured deposits[a]
Gov't bonds	20	20	Uninsured deposits
Investment securities	20	45	Senior debt
Physical assets	20	5	Subordinated (junior) debt
Cash	10	10	Equity
Σ_A 100		Σ_L 100	

Crisis → certain assets lose value

Assets (A)		Liabilities (L)	
Loans	**20**	20	Insured deposits[a]
Gov't bonds	20	20	Uninsured deposits
Investment securities	**10**	45	Senior debt
Physical assets	**15**	5	Subordinated (junior) debt
Cash	10	10	Equity
Σ_A 75		Σ_L 100	

- **Total loss = 25**

(loans 10, investment securities 10, physical assets 5)

Source: Kabelík, K. (2014). Banking Regulation: Trends & Impacts. The Czech Banking Association

4. Regulation after the GFC

7. Application of the bail-in tool 2/3

Assets (A)		Liabilities (L)	
Loans	**20**	20	Insured deposits[a]
Gov't bonds	20	20	Uninsured deposits
Investment securities	**10**	**42**	**Senior debt**
Physical assets	**15**	**0**	**Subordinated (junior) debt**
Cash	10	**0**	**Equity**
Σ_A 75		Σ_L 82	

Bail-in Tool

Step 1: equity written down (10→0);
NAV = A – L + Equity = 75 – 90 + 0 = -15

Step 2: subordinated debt written down (5→0)
NAV = A – L + Equity = 75 – 85 + 0 = -10

Step 3: senior debt written down (45→42; assuming a minimum write-down to reach the minimum bail-in limit of 8%)
NAV = 75 – 82 + 0 = -7

Step 2 + Step 3: bail-in of 8% of total original liabilities (excludes equity writedown)

Source: Kabelík, K. (2014). Banking Regulation: Trends & Impacts. The Czech Banking Association
Note: *NAV = Net Asset Value

4. Regulation after the GFC
7. Application of the bail-in tool 3/3

Assets (A)		Liabilities (L)	
Loans	**20**	20	Insured deposits[a]
Gov't bonds	20	20	Uninsured deposits
Investment securities	**10**	**42**	**Senior debt**
Physical assets	**15**	**0**	**Subordinated (junior) debt**
Cash	10	**0**	**Equity**
Resolution fund assets	**5**		
Bail-out funds	**2**		
Σ_A 82		Σ_L 82	

10

After the Bail-in

Step 4: resolution fund assets (0→5)
- here the fund is used for covering losses rather than recapitalisation

NAV = 80 – 82 + 0 = -2→

Step 5: taxpayers' bail-out (0 2):

NAV = 82 – 82 +0 = 0

(Step 6: convert 10 of senior debt into equity in order to comply with capital ratios)

Note: [a] protected by deposit guarantee scheme
[b] Step 3 can reduce the amount of senior debt to 35 and thereby ensure zero NAV straight away. However, circumstances are expected to determine whether the route of maximum possible bail-in or its minimum 8% limit (shown here) will be pursued.

Source: Kabelík, K. (2014). Banking Regulation: Trends & Impacts. The Czech Banking Association

8. The European banking package I/2 General information

- The banking package from June 2019 represents another key milestone in the process of eliminating the regulatory gaps and weaknesses identified during the GFC.
- At the global level, the Basel II regime tightened banks' capital requirements and introduced new liquidity standards. As early as 2013, first elements of the Basel III standards were transposed into European law in the shape of the newly enacted CRR and an amendment to CRD IV.
- The banking package now implements further material elements of the Basel III framework, which was finalised at the end of 2017, at the European level by way of amendments to the CRR (CRR II) and CRD (CRD V).

Source: Deutsche Bundesbank (2019). The European banking package – revised rules in EU banking regulation. Monthly Report June 2019

4. Regulation after the GFC

The European banking package 2/2

Key changes

1) **Market risk -** the new fundamental review of the trading book (FRTB) that substantially reworked the concept and methodology of both the standardised and the models-based approach
2) **Leverage ratio** = complement to the risk- based capital requirements and ensure that banks have a minimum amount of capital that is independent of the riskiness of their exposures (= Tier I capital/total exposures >3%)
3) **Net stable funding ratio** (NSFR) = as a minimum standard the existing general requirement for an adequate level of stable funding
4) **Standardised approach for counterparty credit risk -** is the risk that the counterparty to a transaction (especially in derivatives) could default before the final settlement of the transaction's cash flows (a new approach is applied)
5) **Changes to the large exposures regime –** 25% limit of Tier I capital/large exposures remains but 15% limit for G-SIFIs*

Source: Deutsche Bundesbank (2019). The European banking package – revised rules in EU banking regulation. Monthly Report June 2019, * Global Systemically Important Financial Institutions = G-SIFIs

https://www.fsb.org/work-of-the-fsb/policy-development/addressing-sifis/global-systemically-important-financial-institutions-g-sifis/

Contents

6. How can we measure benefits and costs of bank regulation?

5. Assessment of regulation

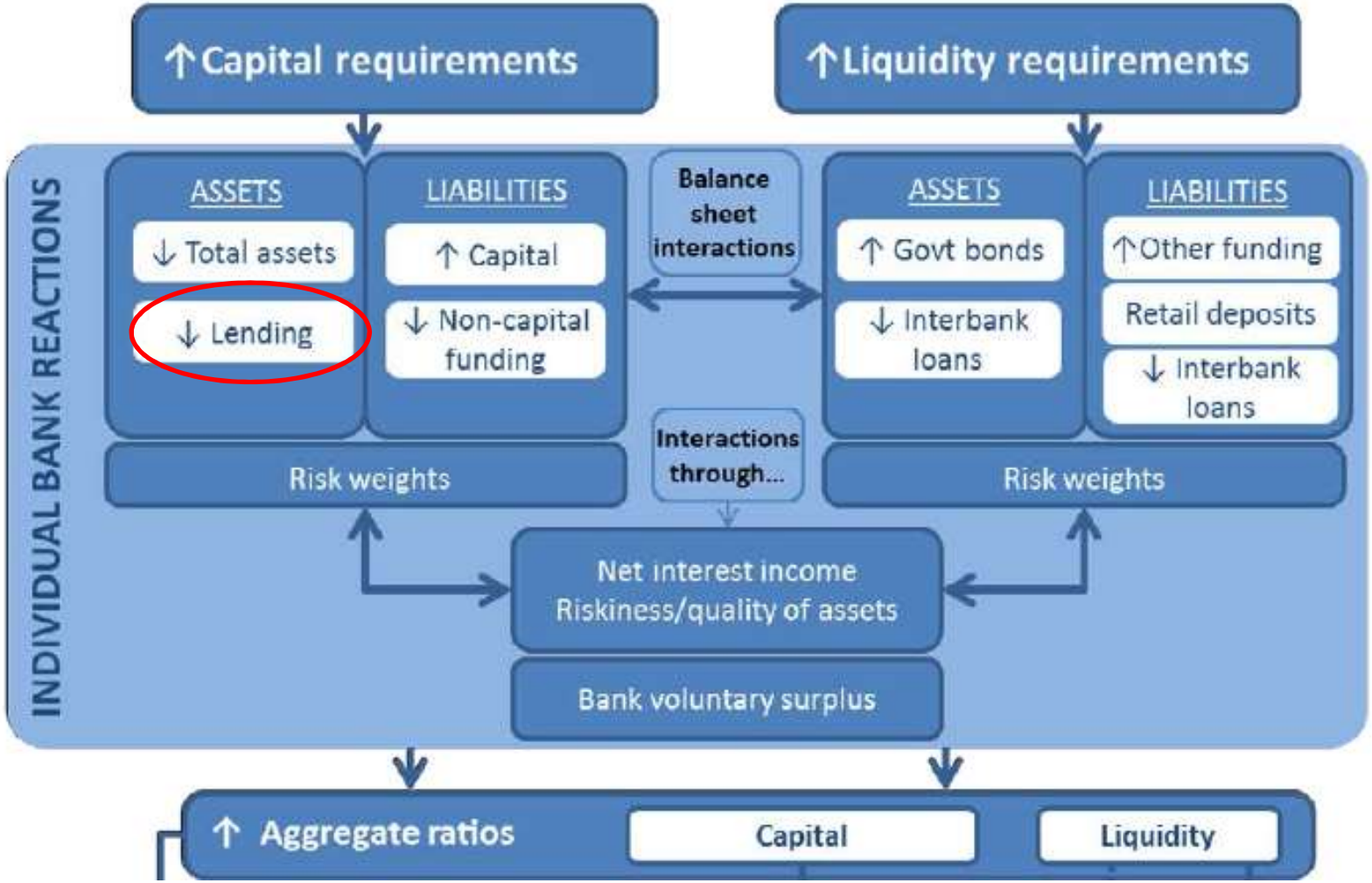
The long-term economic impact (LEI) of stronger capital and liquidity requirements

- The LEI methodology proceeds in two steps:
  - (i) it assesses the long-term **expected benefits** of higher bank capital requirements via the reduction in expected output losses from systemic banking crises; and
  - (ii) it compares these benefits with **the expected costs in terms of forgone output** (impacts on: i) the lending channel and ii) economic activity).
- In deriving these estimates, the LEI adopts an explicitly very conservative approach by making assumptions that overestimate costs and downplay expected benefits.
- Finally, net benefits are calculated (i.e. benefits-costs)

Source: BIS (2016). Annual report 2015/2016. Bank for International Settlements

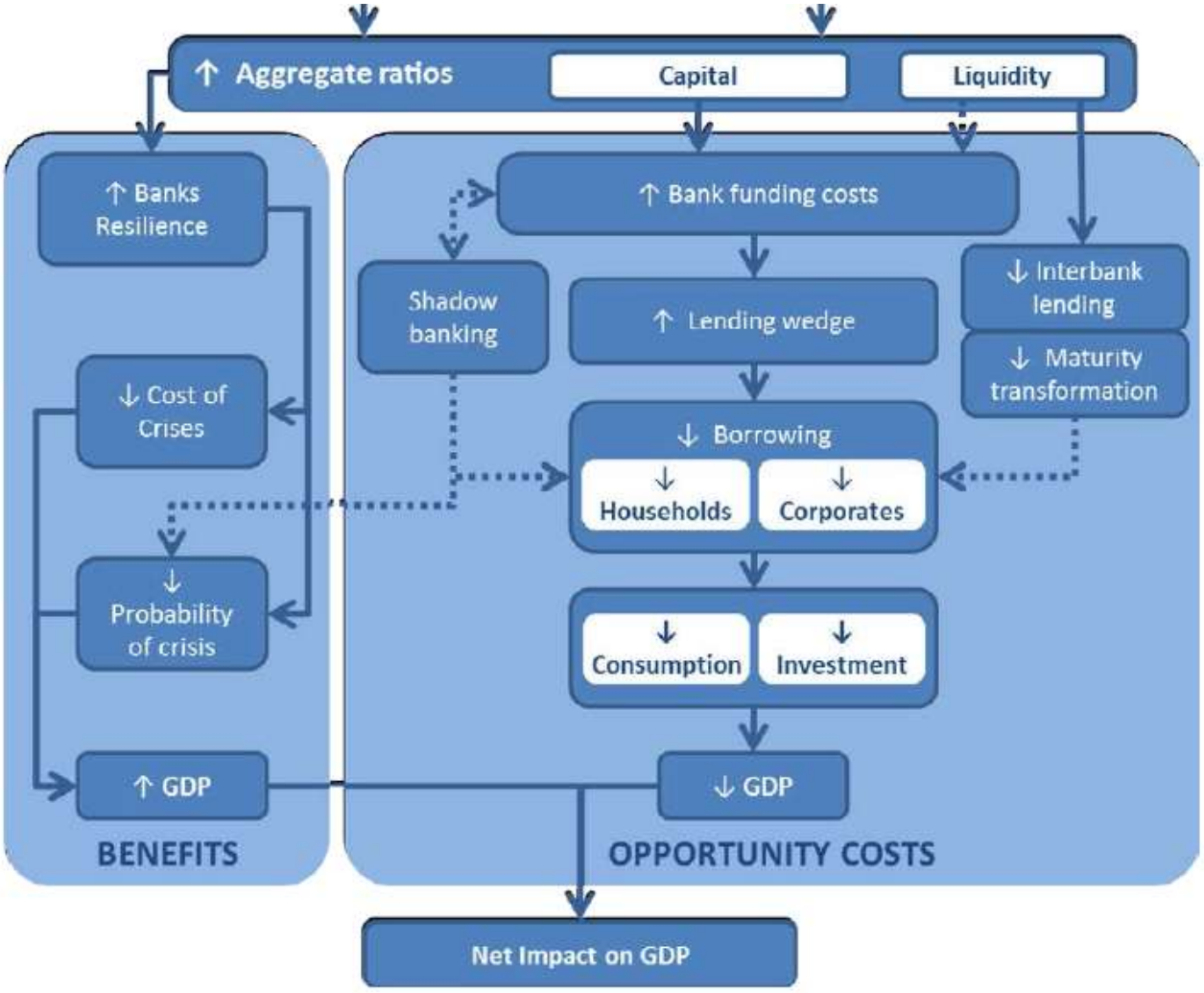
5. Assessment of regulation

Transmission mechanism of regulatory requirements to economic activity (1/2)



Source: BCBS (2016). Literature review on integration of regulatory capital and liquidity instruments. BCBS Working Paper 30

5. Assessment of regulation
Transmission mechanism of regulatory requirements to economic activity (2/2)



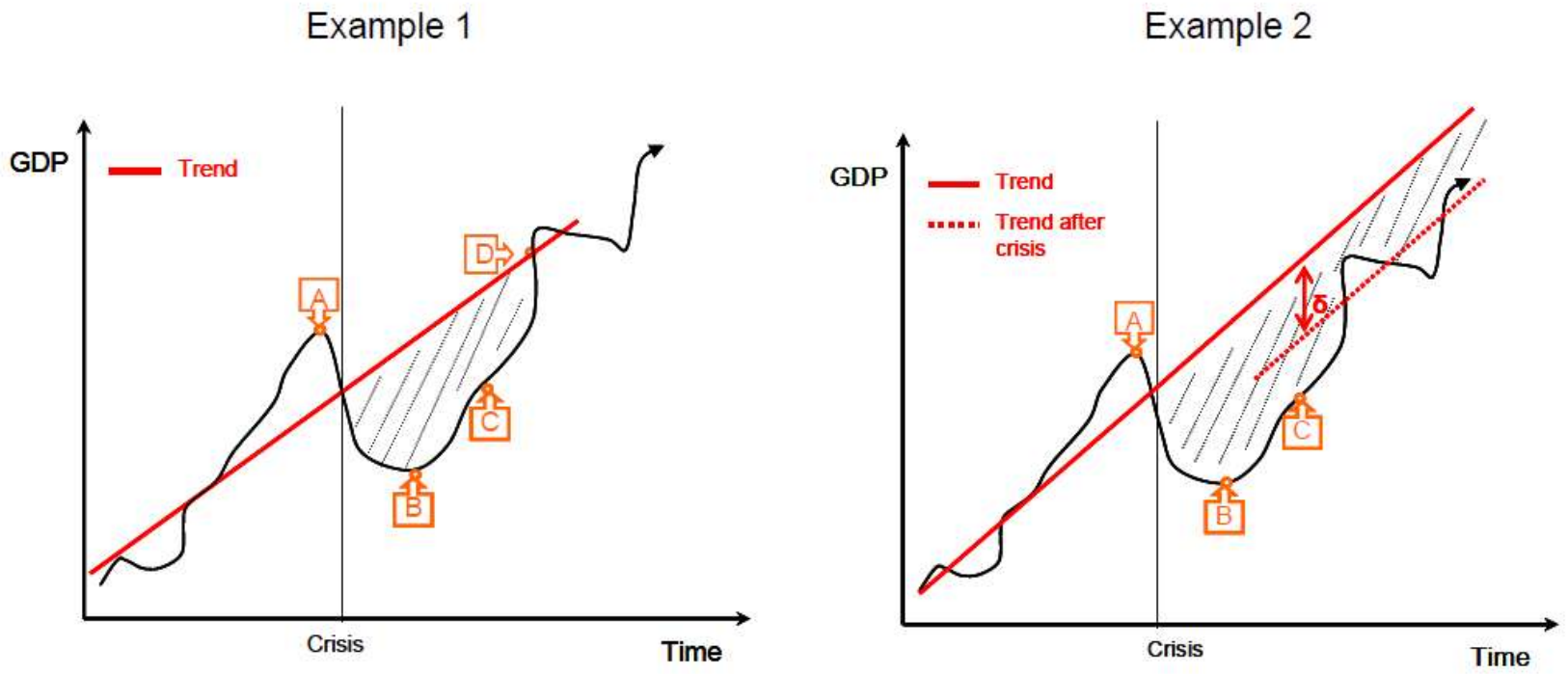
Source: BCBS (2016). Literature review on integration of regulatory capital and liquidity instruments. BCBS Working Paper 30

1. Estimating benefits: lower cost of crises 1/2

- The main justification for increasing capital requirements on banks is to reduce the likelihood of financial crises driven by the banking sector, while higher capital may also decrease **the cost of crises**.
- **Better capitalised banks are less vulnerable to shocks** (*vs. maximalization of ROAE)*. More bank capital reduces the probability (Objective 1 of regulation) and expected costs of future banking crises (Objective 2).
- There is evidence in the literature that better capitalised banks make the provision of credit more stable, even in a downturn by preserving long-term lending relationships

Source: BCBS (2016). Literature review on integration of regulatory capital and liquidity instruments. BCBS Working Paper 30

1. Estimating benefits: lower cost of crises 2/2



Point A: pre-crisis peak. Point B: post-crisis trough. Point C: GDP growth equals trend GDP growth for the first time after the crisis. Point D: the level of GDP returns to the pre-crisis level.

Source: BCBS (2010). An assessment of the long-term economic impact of stronger capital and liquidity requirements.

5. Assessment of regulation
2. Estimating costs: i) impact on the lending channel

Estimates for lending reduction due to an increase in capital requirements — Table 1

	Lending reduction (%)	Credit growth reduction (%)	Sample	Estimation period	Period of the accumulated effect (months)
MAG (2010)	1.4		Average 15 countries		24
Fraisse et al (2015)	1–8		France	2008–2011	12
Aiyar et al (2014b)		4.6	UK	1998–2007	<3
Bridges et al (2014)	3.5		UK	1990–2011	36
Messonier and Monks (2014)		1.2	France	2011–2012	9
Noss and Toffano (2014)	1.4		UK	1986–2010	Long run
Meeks (2014)	0.2 (mortgage) 0.5 (corporate)		UK	1989–2008	Long run
Mendicino et al (2015)2	0.15 (mortgage) 0.43 (corporate)		Euro area	2001–2013	Long run
Sutorova and Teply (2013)	1.4–3.5	1.2–4.6	Europe	2006–2011	Long run
De-Ramon et al (2012)	1.6		UK	1992–2010	Long run

[1] 1% at the intensive margin, 8% considering both the intensive and extensive margins. [2] Authors' calculations.

- The first step of the assessment focusses on the "pure" lending transmission channel, estimating directly the impact of capital requirements on either lending interest rates (or the spread between lending and deposit interest rates) or on lending growth (or both)

Source: BCBS (2016). Literature review on integration of regulatory capital and liquidity instruments. BCBS Working Paper 30

Source: Šútorová, B., Teplý, P. (2013), "The Impact of Basel III on Lending Rates of EU Banks." Czech Journal of Finance, Vol. 63, No. 3, pp. 226-243

5. Assessment of regulation

2. Estimating costs: ii) impacts on economic activity (lending / GDP)

Impact on steady-state GDP level of increasing the capital ratio of capital[1] Table 3

	Impact (median)	Range	Country	Size of change in capital ratio
LEI (2010)	0.09%	0.02–0.35%	13 OECD	1 percentage point in ratio of capital to RWAs
MAG (2010)	0.10%	Maximum 0.15% after 8 years	17 OECD	
Slovik and Cournède (2011)	0.20%	Impact achieved after 5 years	3 OECD	
Angelini and Gerali (2012)	0.05%	0–0.36%	Euro area	
Roger and Vitek (2012)	0.11	0.09–0.24	15 advanced and emerging economies	
Mendicino et al (2015)[2]	0.04%		Euro Area	
De-Ramon et al (2012)	0.30		UK	Full Basel III increase in ratio of capital to risk-weighted assets
Miles et al (2013)	0.25		UK	1% increase in cost of capital

[1] Table is taken from Rochet (2014) and augmented with relevant studies shown in the table [2] Authors' calculations.

- The second step in the assessment of the economic costs of higher capital requirements is to evaluate the impact of higher lending spreads on the long-run level of GDP

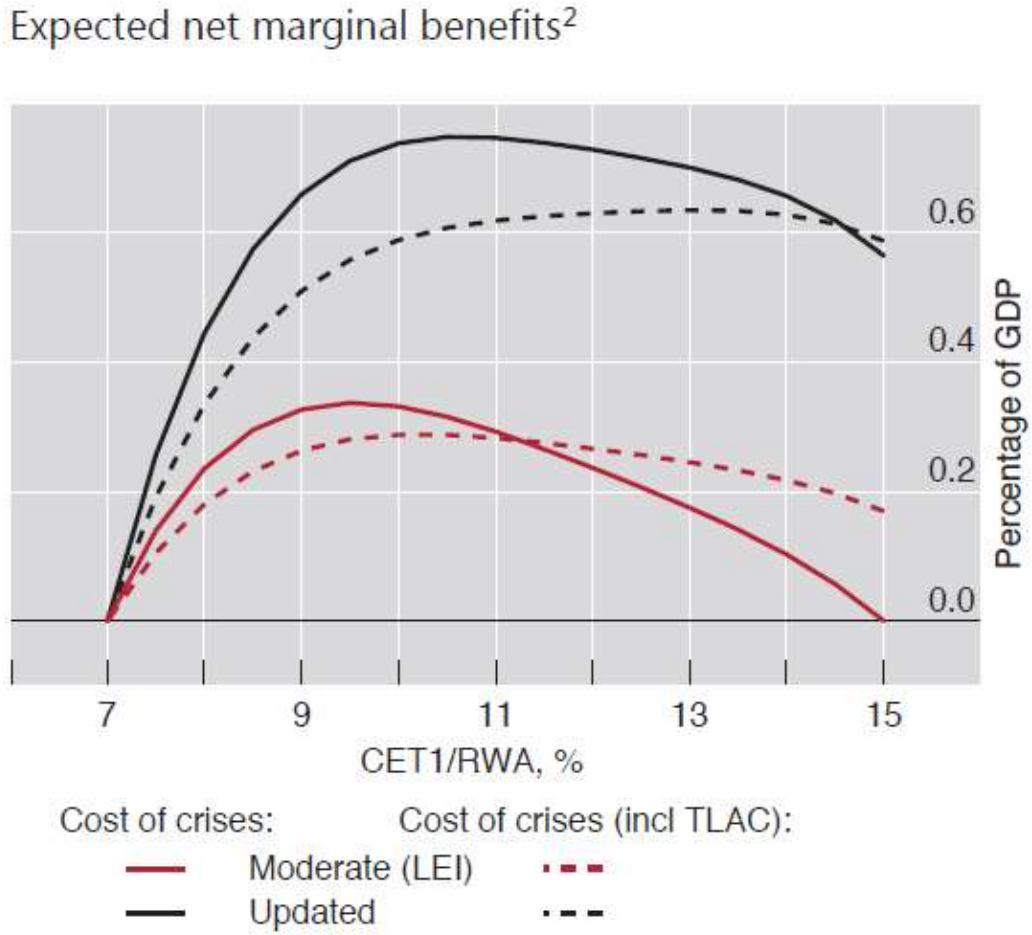
Source: BCBS (2016). Literature review on integration of regulatory capital and liquidity instruments. BCBS Working Paper 30

3. Net benefit calculations 1/2

- Only a small number of the 60 or so surveyed studies make a comparison between the estimated benefits and costs of heightened capital requirements. **All of these papers conclude that benefits of the Basel regulations exceed costs.**
- BCBS (2010) concludes the net benefits of doubling the capital ratio from 7% to 14% when banking crises may impose large and permanent effects is about 5.8% of the steady-state level of GDP.
- De-Ramon et al (2012) find that the benefits of Basel III are nearly three times as large as the costs.
- Junge and Kugler (2013) argue that the impact of doubling the capital ratio is large for the Swiss banking sector, and that the net benefit will be in the order of 12% of GDP.

Source: BCBS (2016). Literature review on integration of regulatory capital and liquidity instruments. BCBS Working Paper 30

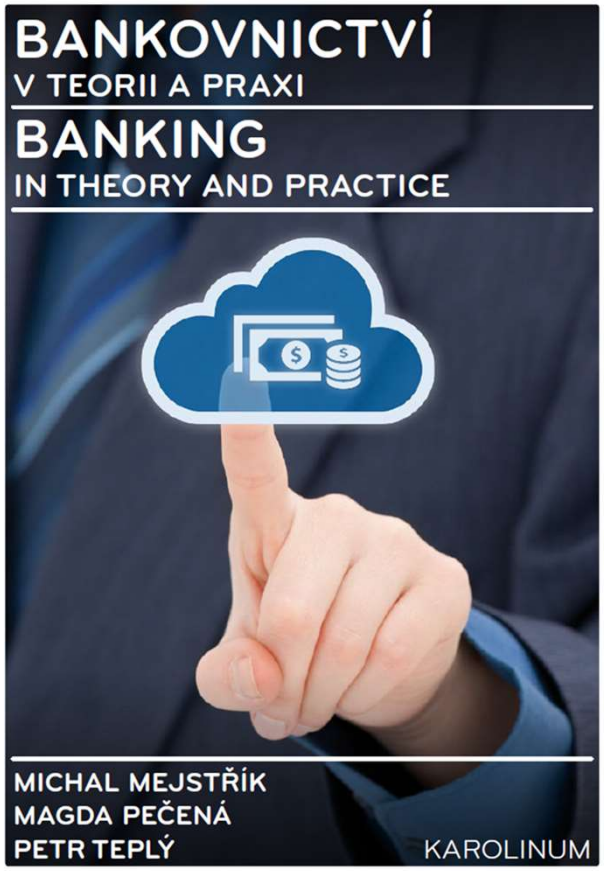
5. Assessment of regulation
3. Net benefit calculations 2/2



[2] The moderate crisis cost (LEI baseline) estimate assumes a cost of systemic crises equal to 63% of GDP, whereas the updated crisis cost estimate assumes a cost of 100% of GDP. The dashed lines show the corresponding estimates if the impact of introducing the new TLAC requirements and a 50% reduction in the cost of regulation ("Modigliani-Miller" offset) are taken into account.

Source: BIS (2016). Annual report 2015/2016. Bank for International Settlements

Reading for the this lecture



- ✓**Chapter V/Bank regulation**

Discussion

Thanks for your attention.
Let´s discuss it now!

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