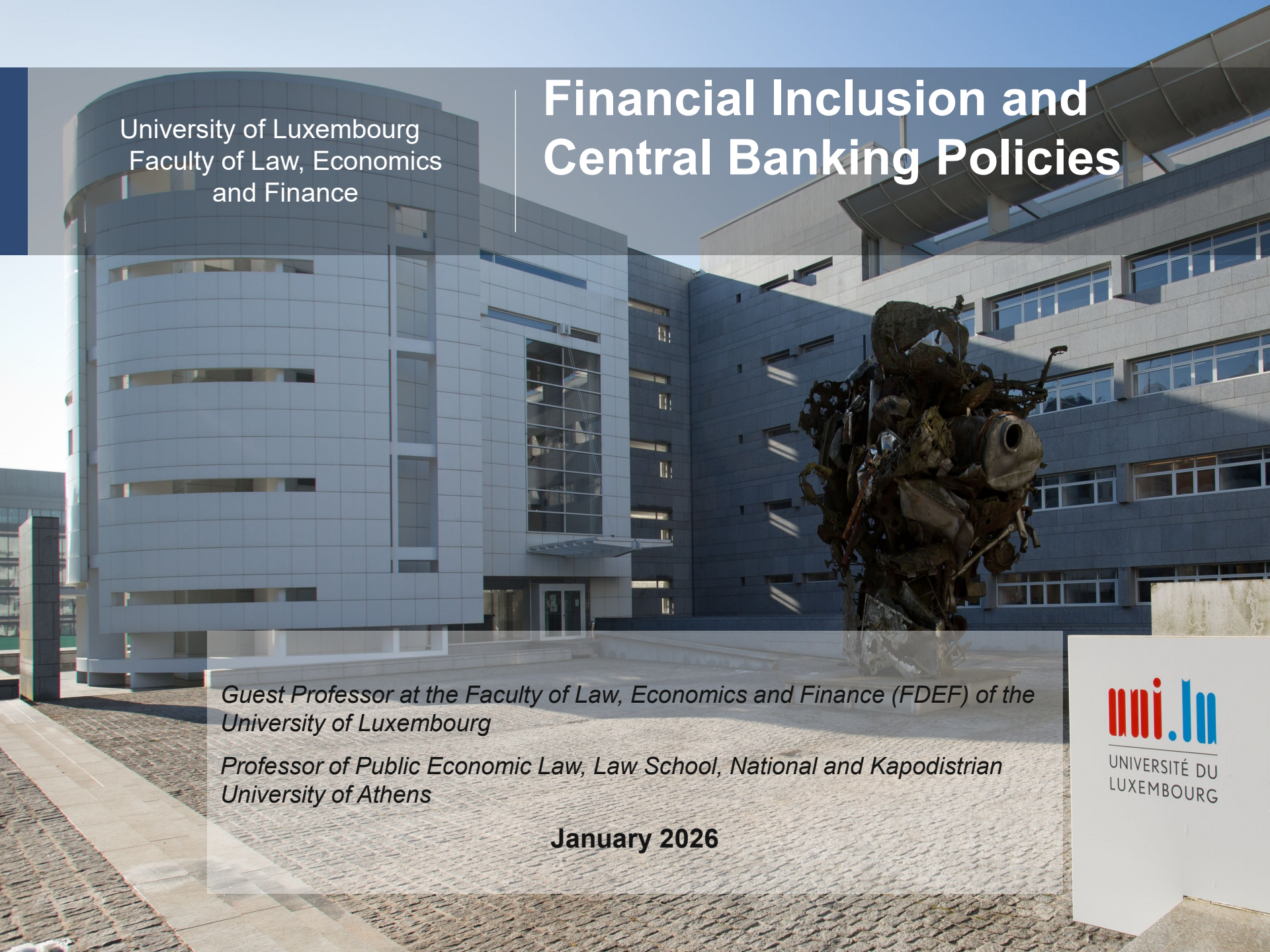

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Financial Inclusion and Central Banking Policies

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TABLE OF CONTENTS

I. A definition of financial inclusion (FI) and "financial health" – barriers to FI (drivers of financial exclusion)

II. Cost – benefit analysis of FI

III. The multi-dimensional role of central banks

Appendix: Key concepts on the financial and monetary system

I. A definition of financial inclusion (FI) and “financial health” – barriers to FI (drivers of financial exclusion)

A. Definitions and certain initial considerations

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1. Definitions

- **FI**: the ownership and use of financial products by individuals (households) and firms to enable personal financial well-being
- **Financial health**: successful **management** of financial obligations and **confidence** in financial future – it can be measured using specific indicators (see Financial Health Network);

2. Initial considerations

(a) There is an observed tendency for simultaneous resort to formal and informal financial services:

- higher degrees of formal FI may not necessarily reduce use of informal financial services (see Deléchat *et al*. (2020))

A. Definitions and certain initial considerations

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2. Initial considerations

(b) The role of **FinTech firms**:

- provision of a variety of financial services (facilitated by innovation-friendly regulations): payments and transfers; personal and alternative finance;
- risks for FinTech users: phishing; pharming; spyware

(c) FI has become a public policy objective, which typically aims at reducing financial exclusion and resort to informal financial services:

- according to a study (Klapper and Singer (2015)), about 67% of bank regulators (including central banks) were (at that time) tasked with promoting FI; this number must have significantly increased (no current data available)

(d) Collection of data on FI is indispensable; however, due to inconsistency of such data, **harmonised methods to measure FI** is necessary (see Halling, Sinnig, Zetzsche (2026))

B. Barriers to FI (drivers of financial exclusion)

1. **Supply-side barriers (involuntary exclusion)**, due to:

- efficiency criteria (inadequate income, high credit risk);
- regulatory constraints (e.g., banking prudential rules, AML/CTF legislation);
- market-driven factors (due to relatively higher costs for financial intermediaries) – and restrictive market practices;
- insufficient infrastructures

B. Barriers to FI (drivers of financial exclusion)

2. Demand-side barriers (voluntary exclusion), due to:

- lack of resources, unemployment, cultural and religious needs and beliefs;
- lack of trust in the financial system (due, *inter alia*, to weak consumer protection rules and their implementation, as well as distrust in the financial supervisory framework);
- lack of knowledge of financial products due to low level of financial literacy;
- inability to use new technologies;
- language barriers;
- escape of regulatory constraints;
- over-indebtedness

II. Cost – benefit analysis of FI

A. Benefits of FI

- FI is beneficial for those who will become financially included, the financial system and the economy at large:

1. Social aspects (*inter alia*)

- lowering of income inequality (income gap narrowing) and poverty reduction;
- enhancement of happiness and psychological health;
- favoring of schooling and learning

A. Benefits of FI

2. General economic aspects

(a) "Banking" of large unbanked populations, thus:

- broader access and a more diversified base of retail payment and savings deposits;
- easier making of payments

(b) Enhanced entrepreneurial risk-taking and investments – promotion of employment, long-term economic growth and economic development

A. Benefits of FI

2. General economic aspects

(c) Development of the financial system – *inter alia*:

- deepening and diversification of the financial system by the widening of banks' deposit bases;
- conditionally, higher risk diversification due to broadened lending activities;
- conditionally as well, increase of banks' profitability to the benefit of their own funds' robustness, shareholders and tax revenues;
- lower information asymmetries between borrowers and lenders;
- development of supportive payment infrastructures

(d) Containment of money laundering and tax evasion

A. Benefits of FI

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3. In particular: monetary policy effects

(a) "**Consumption smoothing**" over time – lower volatility of aggregate consumption growth over output growth (according to the business cycle)

(b) FI in terms of savings in the financial system – less use of cash by financially "included" persons:

- positive implications for monetary policy operations – strengthening the case for using interest rates as a primary monetary policy tool and increasing the efficiency of the **mechanism for the transmission of monetary policy effects** (see Box in the **Appendix** below);
- use of monetary aggregates as intermediate policy targets

A. Benefits of FI

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3. In particular: monetary policy effects

(c) Overall, facilitation of central banks' objective to preserve monetary/price stability:

- The standardised relationship between money, real economic activity, prices, and **money velocity** is described in the quantity theory of money equation (the so-called **"Fischer equation"**). This shows that the growth rate of money supply (ΔM) is equal to the following: the output growth rate (ΔY) and the inflation rate (ΔP), minus the growth rate of money velocity (ΔV). Therefore, the reference value is illustrated by the formula: $\Delta M = \Delta Y + \Delta P - \Delta V$
- Higher FI leads to higher decreases in money velocity. Thus, with low money velocity and stable economic activity, the growth rate of money supply is mainly determined by the inflation rate (which the central bank typically controls by its monetary policy)

(d) However, the above do not fully apply to the extent that FI is effected via the use of, *inter alia*, **mobile money accounts** which are not deposit accounts at banks

A. Benefits of FI

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4. In particular: financial stability effects:

- **key assumption**: financially excluded persons lack "credit history" = increase of screening cost ("credit scoring") and exposure to credit risk;
- on whether FI decreases the likelihood of a financial crisis (as suggested by several studies), this heavily depends on efficient prudential supervision and implementation of macroprudential policies (see further, Section III below);
- FI may correspond to a (favourable) shift of the ratio of depositors and borrowers which would be conductive to a greater level of financial stability;
- high non-performing loans (**NPLs**) and high capital adequacy ratios are associated with lower FI (see Sarma and Pais (2011));
- the improvement of the transmission of monetary policy (as discussed) contributes to greater financial stability (see Khan 2011))

B. Potential negative consequences of FI on financial stability

- financial instability from excessive credit expansion – the tradeoff between promoting FI and avoiding such a credit expansion caused by lending to newly "included" persons;

- key distinction: increase in loans and credit *vs*. an increase in NPLs (see Halling, Sinnig, Zetzsche (2026))

III. The multi-dimensional role of central banks

A. General considerations

1. In relation to central banks' key tasks

(1) The role of **strong institutions**, in general, is a condition for economic development (**"institutional economics"**)

- the significance of central banks operating in an **adequately designed institutional framework** (including central bank independence);
- improved institutional quality increases both financial access, and usage, with limited adverse effects either on usage or access (see Emara *et al*. (2019))

A. General considerations

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1. In relation to central banks' key tasks

(2) Appropriate **definition** – and implementation – **of monetary policy** depending on the level of FI:

(a) Key assumption: as the degree of FI increases, central banks can better focus on monetary/price stability (as discussed)

(b) Choice of the **appropriate price index** (such as, in the euro area, the Harmonised Index of Consumer Prices (**HICP**) to define the price stability objective:

- **"headline"** *vs*. **"core"** inflation: core inflation removes the components that may exhibit large short-term volatility (e.g., energy and food prices);
- in case of low FI states, core inflation may be ineffective since it underestimates the role of food prices in monetary developments (which in rural and agricultural regions are particularly important) (see Mehrotra and Yetman (2015))

(3) Promotion and adequate oversight of efficient **retail payment systems**

A. General considerations

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1. In relation to central banks' key tasks

(4) Development and due implementation of:

- **financial literacy programs** within national (or, in the case of the EU, supranational) **FI strategies**; and
- **digital financial literacy programs** taking into account the (exponentially increasing) importance of FinTech (see Morgan (2022)
- Common denominator: building **"financial capability"** to address (some of) the demand-side barriers to FI – including trust (as discussed)

(5) Introduction of central bank digital currencies (CBDCs): in developing economies in particular, CBDCs have the potential to boost FI, which can increase overall lending and reduce bank disintermediation risks (see Tan (2023))

A. General considerations

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2. In relation to tasks that may have been conferred upon central banks

(1) Effective implementation of **anti-money laundering regulations**

(2) Effective implementation of **consumer protection legislation** (disclosures and pricing transparency, see Giné *et al.* (2017) and Ansar *et al.* (2025))

B. The role of international organisations and fora with the participation of central banks

1. **International Monetary Fund (IMF)**:
   - Promotion of FI by providing **policy guidance and technical assistance** to its member states (especially developing economies)

2. **Bank for International Settlements (BIS)**: 2024 Study "From financial inclusion to **financial health**":
   - financial health is sub-optimal **if the quality of use of financial services is poor** (e.g., lack of **financial and digital literacy** and know-how on the part of the consumers);
   - role of public policy: support financial health by promoting financial consumer protection, advancing financial and digital literacy and enacting foundational policies like sound regulation and open finance

B. The role of international organisations and fora with the participation of central banks

3. **Basel Committee on Banking Supervision (BCBS)** (at the BIS):

(a) Emphasis on the review of national practices in **banking regulation and supervision** relevant to FI

(b) Guidance on the application of the "Core Principles for Effective Banking Supervision" to the regulation and supervision of institutions relevant to financial inclusion (2016):

- this Guidance identifies 19 of the total 29 Core Principles where additional guidance is needed, and both Essential Criteria and Additional Criteria which have specific relevance in the FI context

B. The role of international organisations and fora with the participation of central banks

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4. **Committee on Payments and Market Infrastructures (CMPI)**: 2016 Report on "Payment aspects of financial inclusion":

(a) guiding principles to help countries advance FI;

(b) proposed key actions, including:

- providing **basic accounts** at little or no cost;
- leveraging large-volume payment programmes, such as government payments, by adopting **electronic payment services**

5. **Global Partnership for Financial Inclusion (GPFI)**:

- G20-initiated international forum (also participated in by the World Bank and the OECD) providing a systematic coordination and implementation structure for the 2010 FI Action Plan;
- the 2023 FI Action Plan contains the GPFI's "Aspirations 2026"

C. In particular: measures to preserve financial stability in view of enhanced FI

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1. The link between micro- and macro-prudential measures (in general):

- micro-prudential regulation and supervision cannot effectively safeguard financial stability without adequately taking account of macro-level aspect; while, concurrently
- macroprudential oversight is meaningful only when it can somehow impact on micro-prudential supervision

2. Micro-prudential measures

(1) Primary importance of **credit risk assessment** by banks (to determine probability of default) – taking into account **collateral arrangements** (to determine loss given default) – impact on lending rates

C. In particular: measures to preserve financial stability in view of enhanced FI

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2. Micro-prudential measures

(2) The role of banking supervisors (and banking regulation):

- Due implementation by supervisors of regulatory capital adequacy requirements in relation to exposures to credit risk (which, though, are risk sensitive since the denominator of the capital adequacy ratio is calculated on the basis of risk-weighted assets (**RWAs**))
- Three key considerations in this respect:
  - capital requirements, a necessary tool applied to preserve financial stability, act as a constraint to banks' lending activity;
  - monitoring systems to identify financial risks and measure their frequency and impact need to be updated (see Ansar *et al.* (2025));
  - the prudential regulatory framework applied should be based upon the "**principle of proportionality**"

C. In particular: measures to preserve financial stability in view of enhanced FI

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3. Macro-prudential measures

(a) General considerations:

- **macro-prudential oversight** is essential to limit any potential distress to the financial system as a whole in order to protect the overall economy against significant losses in real output;
- even though financial development helps macroprudential policies improve usage of financial services (both borrowing and depositing), it does not significantly help in increase in financial access (see Emara *et al*. (2019))

C. In particular: measures to preserve financial stability in view of enhanced FI

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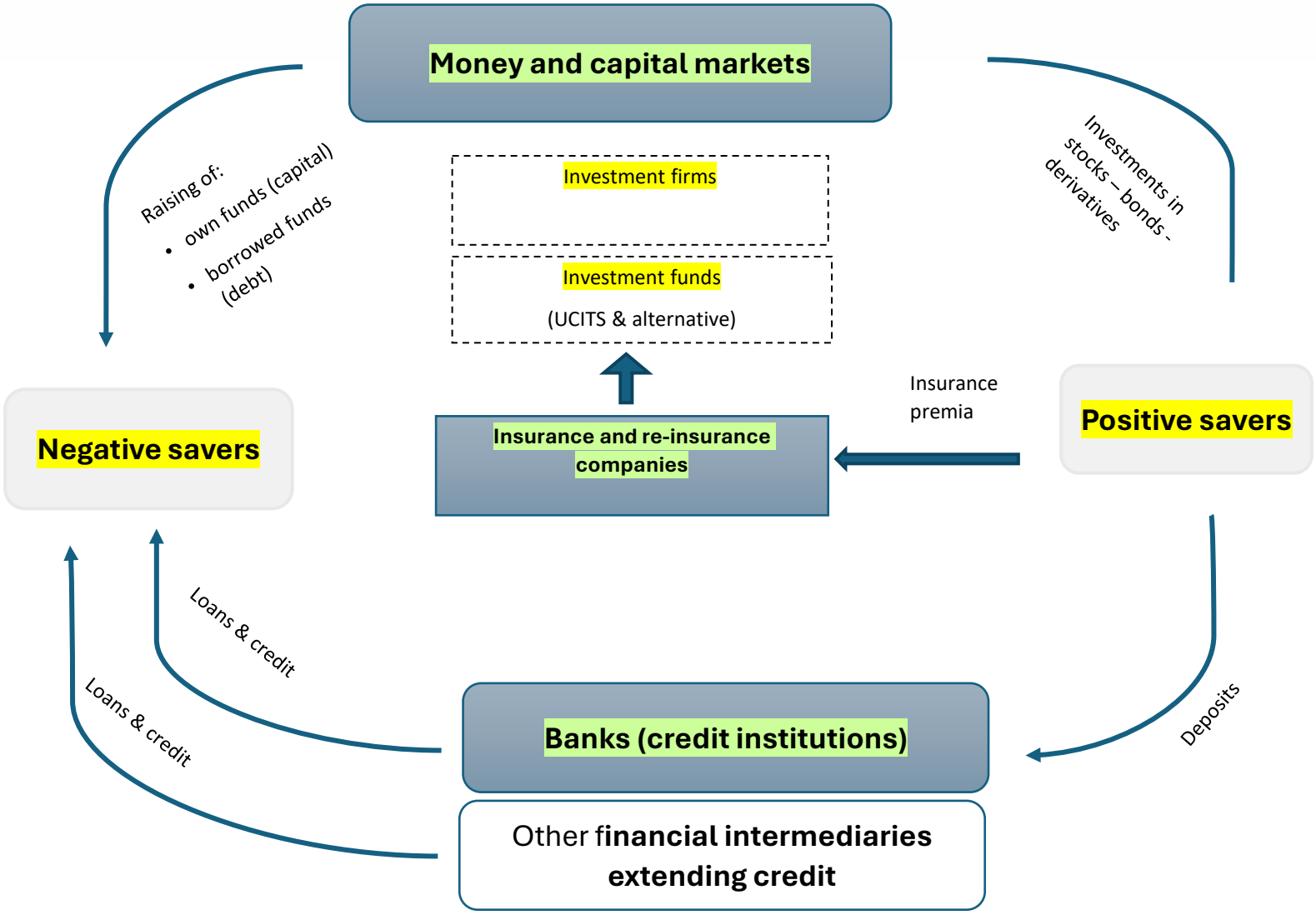
3. Macro-prudential measures

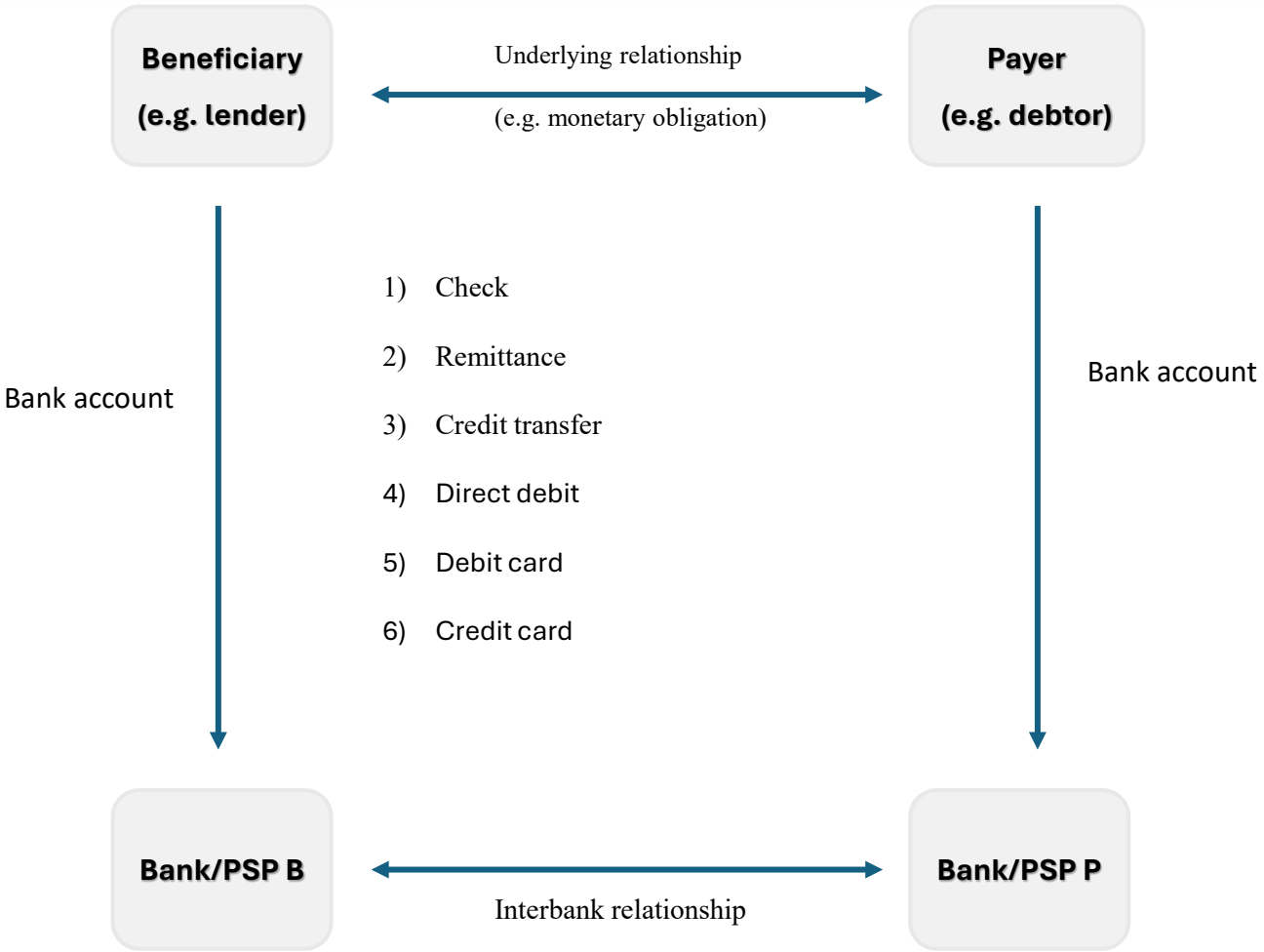
(b) Macro-prudential regulations:

- there is empirical evidence that macroprudential policies create incentives for individuals or firms to move away from formal toward informal or unregulated financial services (see Aiyar, Calomiris and Wieladek, 2014);
- institution-based macroprudential policies seem to be associated with more use of informal finance and with less use of formal and mobile services – the association between limits on credit growth, and greater use of informal financial services, relative to formal ones is particularly strong (see Deléchat *et al*. (2020));
- provisioning appears to have a consistently positive impact on FI, both in terms of access, and usage of financial services – on the other hand, debt to income (DTI) and loan to value (LTV) ratios reduce it (see Emara *et al*. (2019))

APPENDIX

Key concepts on the financial and monetary system


Money and capital markets
Raising of:
• own funds (capital)
• borrowed funds (debt)
Investment firms
Investment funds
(UCITS & alternative)
Investments in stocks – bonds - derivatives
Negative savers
Insurance and re-insurance companies
Insurance premia
Positive savers
Loans & credit
Loans & credit
Banks (credit institutions)
Deposits
Other financial intermediaries extending credit


Beneficiary
(e.g. lender)
Underlying relationship
(e.g. monetary obligation)
Payer
(e.g. debtor)
Bank account
1) Check
2) Remittance
3) Credit transfer
4) Direct debit
5) Debit card
6) Credit card
Bank account
Bank/PSP B
Interbank relationship
Bank/PSP P

A simplified, typical bank balance sheet

Assets		Liabilities	
Cash holdings	5	**CB funds:** monetary policy – **LLR**	5
Loans – performing	65	**Retail deposits**	55
Loans – non-performing	5	**Corporate deposits – Government deposits**	15
Interbank deposits	***0***	***Interbank deposits***	***5***
Securities (issued by Governments and corporates)	15	Senior bonds	10
Other	10	**OF - Subordinated bonds (AT 1 + Tier 2 capital)**	5
		OF - Capital (CET 1 capital)	5
	100		100

Objectives of central banks

1. In all cases:

- provision of **means of payments** to the economy (banknotes – digital cash)
- preservation of **monetary stability (an objective that can be defined)**
- preservation of **financial stability (an objective that cannot be easily defined)**
- in particular: preservation of the stability of payment systems (typically, large-value ones)

2. On a case-by-case basis: distinction between primary and secondary objectives(?):

- contribution to other **macroeconomic objectives** (e.g., economic growth and employment)
- contribution to other **microeconomic objectives**
- in particular: contribution to **environmental sustainability**

Tasks conferred upon central banks

1. In all cases (traditionally):

- **issuance of banknotes** (a legal monopoly and *quasi de facto* monopoly as well) – control of the amounts of coins in circulation produced by the Government (note: banknotes and coins (cash = **"public money"**) are the only money form accessible to the general public)
- definition and **implementation of monetary policy** to achieve specific, well defined macro-economic objectives
- **provision of last resort lending** to solvent banks exposed to liquidity risk (but no deposit guarantee when a bank is exposed to insolvency = fails)
- **conduct of foreign-exchange policy** – holding of official foreign reserves
- **oversight of** large-value and small-value **payment systems**
- contribution to the preservation of **financial stability**

Tasks conferred upon central banks (*cont'd*)

2. In all cases (mainly after the GFC):

- **macroprudential financial oversight**

3. In certain cases:

- **microprudential supervision of banks** and other categories of financial firms: conflicts of interest (?);
- **resolution of banks** and other categories of financial firms;
- **protection of consumers** of financial services;
- promotion of **"financial inclusion"** and of **"financial literacy"**;
- combatting of **money laundering and terrorist financing** through the financial system;
- issuance of **digital currencies** (CBDCs);
- contribution to government debt management
- management of capital controls (if and when imposed)

A simplified central bank balance sheet

Assets	Liabilities
1. Gold and reserves	1. Banknotes in circulation **& CBDCs**
2. Claims on banks related to monetary policy operations (“open market operations” & “marginal lending facility”)	2. Liabilities to banks related to monetary policy operations (“reserve accounts” and “deposit facility”)
3. Other claims on banks	3. Liabilities to other parties (in domestic or foreign currencies)
4. Securities issued by Governments – firms – financial firms	4. Other liabilities
5. Other claims (in domestic or foreign currencies)	5. Revaluation reserves
6. Other assets	**6. Capital and reserves**

The case for financial regulation

Category of measures	Competent institution
Prudential and crisis prevention measures	
Structural regulations	Universal banking system (in principle)
Authorisation requirements	Supervisory authority
Micro-prudential regulation	Regulators
Macro-prudential regulation	Regulators
Micro-prudential supervision	Supervisory authorities
Macro-prudential financial oversight	Central banks (typically)
Measures in case of impending insolvency (including early intervention measures)	Supervisory authorities

The case for financial regulation

Prudential regulation measures

1. Selected micro-prudential measures

(1) **'Capital adequacy ratio'** means (in principle) the minimum amount of regulatory own funds as a percentage of total assets and off-balance sheet exposures weighted by specific risk factors ('risk-weighted assets', **'RWAs'**).

(2) **'Leverage ratio'** means the minimum amount of regulatory own funds (usually CET1) as a percentage of total assets and off-balance sheet items *without weighting*.

(3) There are two (main) liquidity ratios:

- the **'liquidity coverage ratio'** (**'LCR'**), meaning the ratio of the stock of high-quality liquid assets to total net cash flows over a short period of time (e.g., the next 30 calendar days), and
- the **'net stable funding ratio'** (**'NSFR'**), meaning the ratio of the:
  - *available* amount of stable funding *via* customer deposits, long-term wholesale funding (from the interbank lending market), and equity to a
  - *required* amount of stable funding *via* the assets

Prudential regulation measures *(cont'd)*

2. Macro-prudential measures

2.1 General overview

A mix of macroprudential policy instruments, collectively known as the **'macroprudential toolkit'**, is introduced to address cyclical and structural systemic risks:

First, it is necessary to set up institutions and procedures for ensuring the **'macroprudential oversight of the financial system'**, enabling thus the identification, measurement and assessment of systemic risk. The objective is to limit any potential distress to the financial system as a whole in order to protect the overall economy against significant losses in real output.

Second, it is necessary to adopt **'macroprudential policy measures'**, often in the form of regulations addressed to banks and/or other financial firms, as well as money and capital markets, and are differentiated depending on the systemic risk dimension they are called upon to address.

Prudential regulation measures *(cont'd)*

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2. Macro-prudential measures *(cont'd)*

2.2 Measures to address cyclical systemic risk (time dimension)

The policy instruments used to achieve the objective of addressing the systemic risk's time dimension, and notably financial system procyclicality, mainly include the following:

First, imposing an obligation on banks to set a **'capital conservation buffer'** (that must be continuously fulfilled and may be used to absorb losses in times of stress) and a **'countercyclical capital buffer'** (built up in times of economic growth and credit expansion to ensure that the macrofinancial environment in which banks operate is taken into account) – both composed of Common Equity Tier 1 (**'CET1**') capital), as well as take **'forward-looking' measures** (e.g., provisions)

Prudential regulation measures *(cont'd)*

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2. Macro-prudential measures *(cont'd)*

2.2 Measures to address cyclical systemic risk (time dimension) *(cont'd)*

Second, measures which affect:

- *either* the prices of services provided by banks (**'price-based prudential tools'**), e.g., stricter risk weights on the upside of the financial cycle when calculating the capital adequacy ratio on specific exposures (mainly those secured by immovable property, or loans for the purchase of securities and positions in derivatives); *or*
- the quantity of their services (**'quantity-based prudential tools'**), such as time variation tools, deployed depending on the financial cycle's phase, and borrower-based measures, such as limits on loan-to-value ratios for mortgage loans secured by immovable property, limits on debt-to-income, or debt-service-to-income ratios in mortgage and consumer loans.

Prudential regulation measures *(cont'd)*

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2. Macro-prudential measures *(cont'd)*

2.3 Measures to address structural systemic risk (cross-sectional dimension)

First, measures in the form of higher loss absorbency requirements for global and domestic systemically important banks to reduce the likelihood and severity of failure of such banks and mitigate its potential impact on taxpayers and the domestic economy respectively. Macroprudential capital surcharges imposed are calculated as a percentage of these institutions' total RWAs. Also composed of **CET1** capital, their amount is commensurate with the degree of their systemic importance.

Second, additional CET1 capital requirements, known as **'systemic risk buffers'**

Box: The mechanism for the transmission of monetary policy effects