BANCO DE ESPAÑA
Eurosistema

SOLVENCY AND PROFITABILITY ANALYSIS OF NON-BANK FINANCIAL INSTITUTIONS

Irene Pablos Nuevo

Banco de España

II COURSE ON FINANCIAL STABILITY, CEMLA

16 November 2020

DIRECTORATE GENERAL FINANCIAL STABILITY, REGULATION AND RESOLUTION

CONTENT

BANCO DE ESPAÑA
Eurosistema

CONTENT

ENTITY TYPES IN THE NON-BANK FINANCIAL SECTOR

➢ **The non-bank financial sector comprises all financial institutions that are not central banks, banks or public financial institutions.** In particular:

NON-BANK FINANCIAL INSTITUTIONS

- Specialised credit institutions (as part of S.122)
- Money market funds (S.123)
- NON-MONETARY FINANCIAL INSTITUTIONS
  - NON-MONETARY FINANCIAL INSTITUTIONS, EXCEPT INSURANCE CORPORATIONS AND PENSION FUNDS
    - Investment funds other than money market funds (S.124)
    - OTHER NON-MONETARY FINANCIAL INSTITUTIONS
      - Other financial intermediaries* (S.125)
      - Financial auxiliaries** (S.126)
      - Captive financial institutions and money lenders (S.127)
  - Insurance corporations (S.128)
  - Pension funds (S.129)

*Other financial intermediaries: securitisation vehicles, derivative and security dealers, treasury companies, REITs, CCP, among others.

**Financial auxiliaries: corporations providing infrastructure for financial markets, corporations that arrange derivative and hedging instruments, such as swaps, options and futures (without issuing them), mutual guarantee societies, appraisal companies, among others.

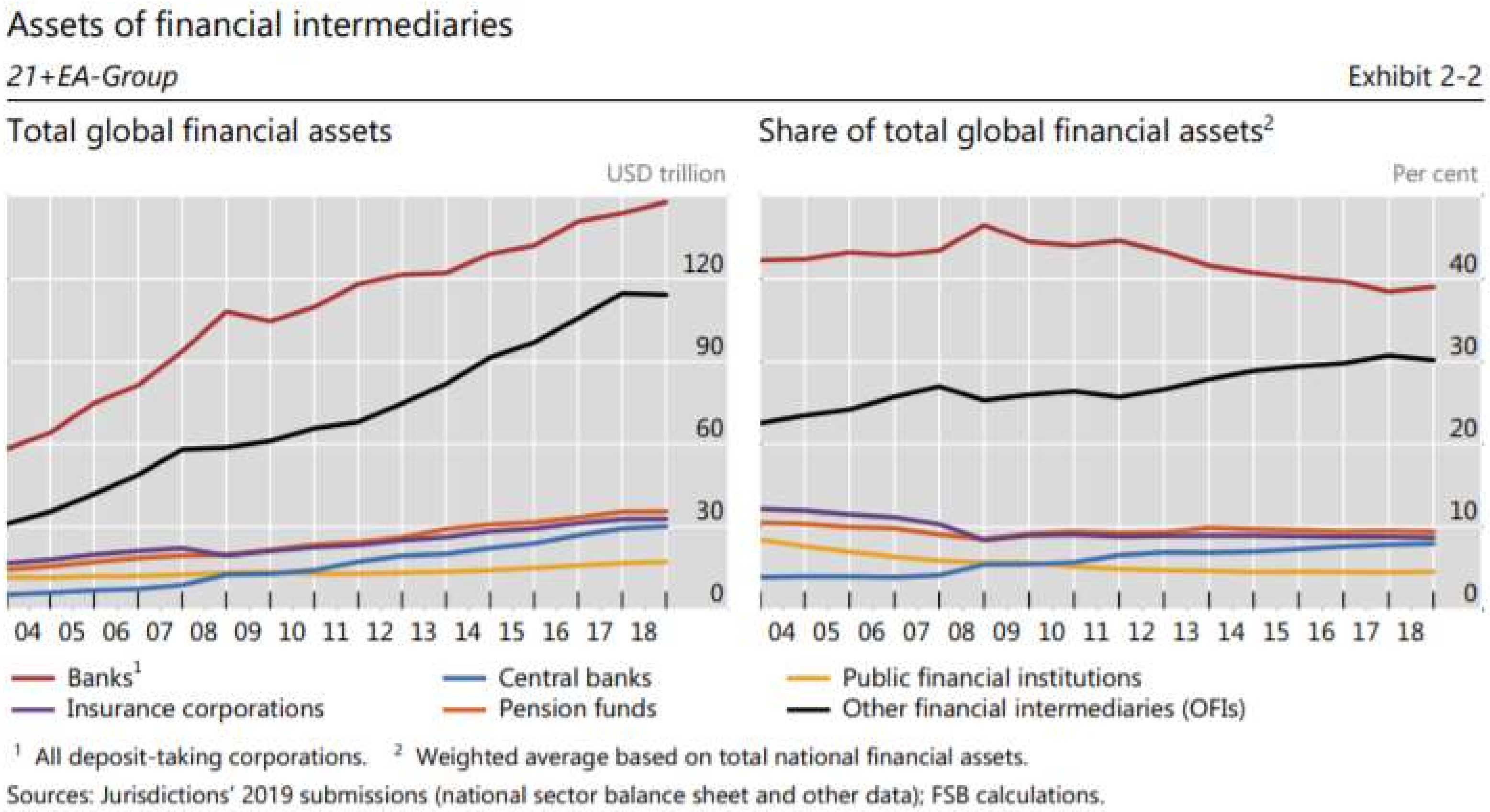
➢ **The narrow measure of non-bank financial intermediation:** non-bank financial institutions that are involved in credit intermediation activities that may pose bank-like financial stability risks (ie. credit intermediation that involves maturity/liquidity transformation, leverage or imperfect credit risk transfer).

- **The vulnerabilities faced during the global financial crisis and the challenges for financial stability that emerged in recent years (ie. low interest rates for long) have promoted the development of new regulation** in these sectors.
  - For instance, in the European Union, the most relevant regulatory advances are:

Insurance companies	Pension funds	Investment funds
Solvency II Directive	**IORP II** Directive + **national regulation**	**UCITS** Directive, **AIFMD** Directive for alternative investment funds Also **EMIR** regulation affects investment funds

- The financial crisis also revealed the **need to monitor the non-bank financial institutions when, under certain circumstances, they engage in credit intermediation activities that may pose bank-like financial stability risks.**
  - For this reason, the FSB developed a framework in 2013 to strengthen the surveillance of these entities
    - Annual report: *Global Monitoring Report on Non-Bank Financial Intermediation*
    - Other authorities also publish regularly their analysis using the FSB methodology. For instance: Report on *Non-bank financial intermediation in Spain,* published by the CNMV

- **The non-bank financial sector have risen steadily in the last 20 years, reaching 184 USD trillion of total assets in 2018.**



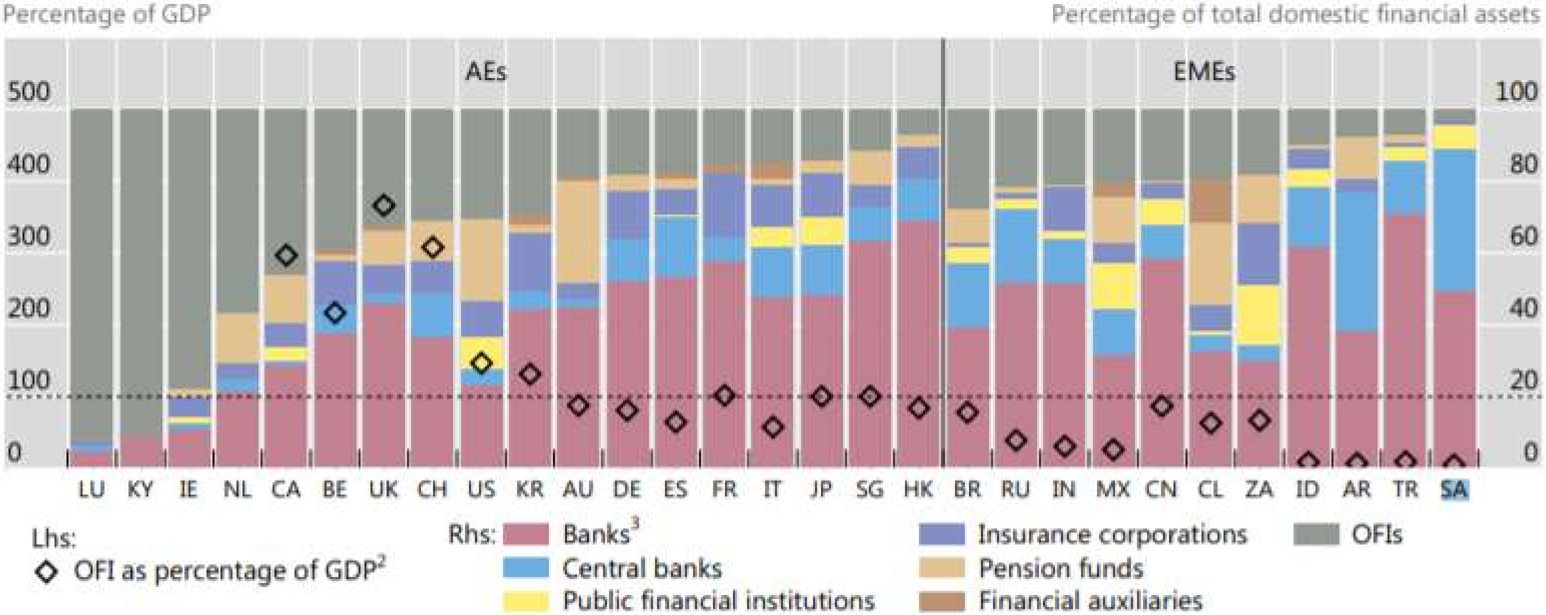
Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020)

- **The non-bank financial sector is very heterogeneous, and its size and composition varies across jurisdictions.**

Composition of financial systems[1]

29-Group at end-2018.

Exhibit 2-3



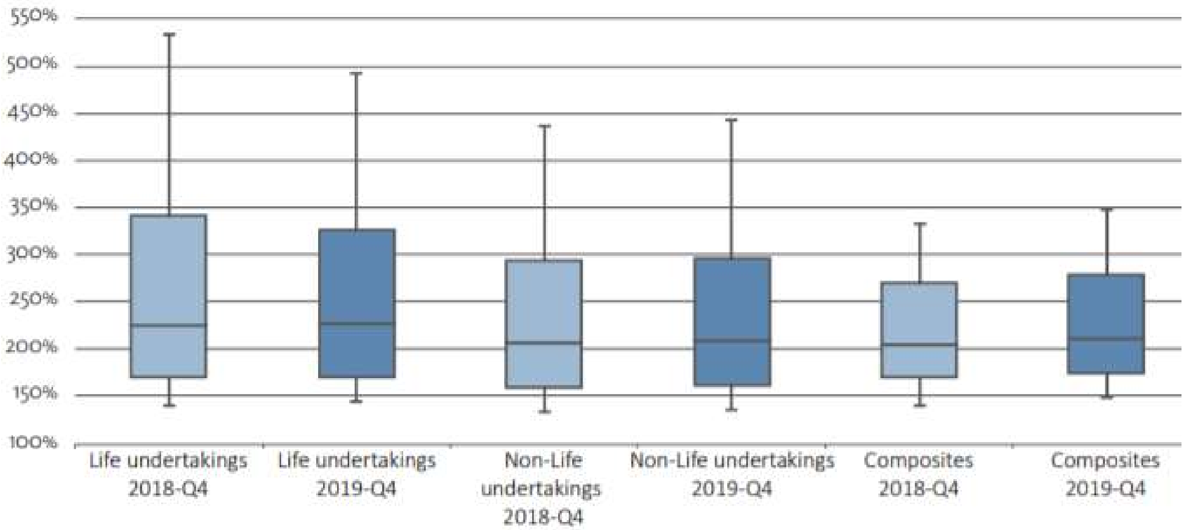
[1] Assets invested in foreign jurisdictions may distort these ratios. [2] Jurisdictions with OFIs assets greater (lower) than their GDP will be above (below) the horizontal dashed line. The ratio of OFI assets to GDP for Luxembourg (23,631), the Cayman Islands (148,540), Ireland (1323) and the Netherlands (760) are not shown since they are particularly high compared to the rest of the jurisdictions. [3] All deposit-taking corporations.

Sources: Jurisdictions' 2019 submissions (national sector balance sheet and other data); FSB calculations.

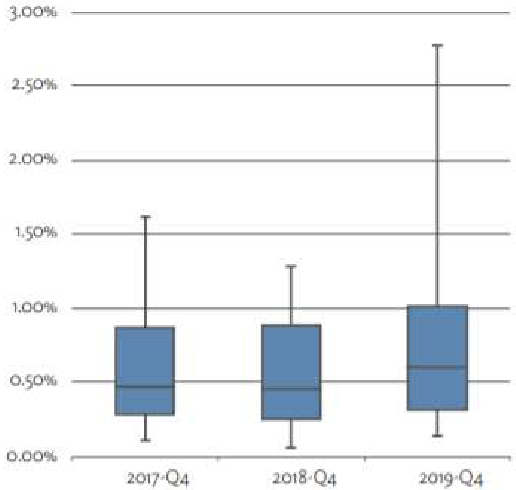
Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020)

➢ Solvency and profitability metrics of the insurance sector. EEE countries

Solvency II SRC ratio in 2019



ROA in 2019



Source: EIOPA Financial Stability Report July 2020
Note: The chart shows the median, the interquartile range and the percentiles 10 and 90. The acronym EEA stands for European Economic Area.

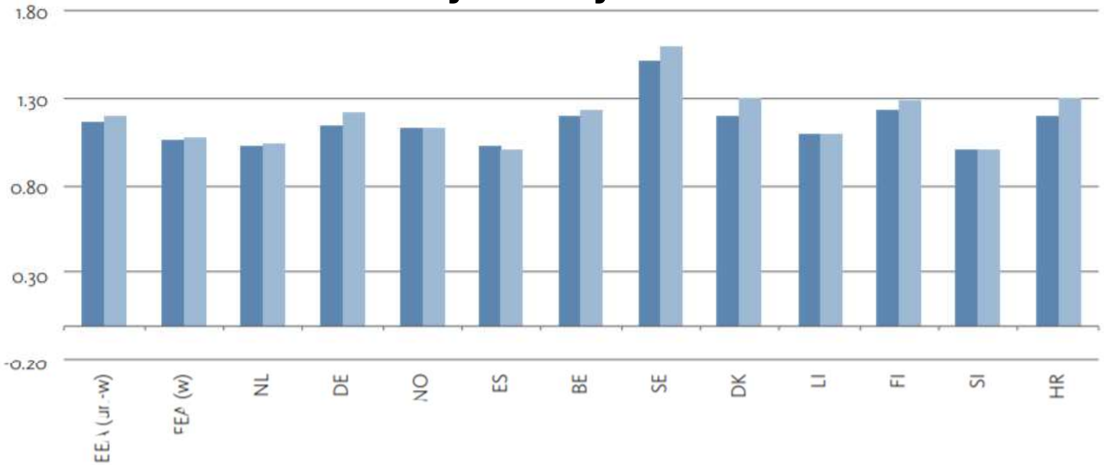
Solvency II measures are based on SCR metrics (solvency capital requirements) and MCR (minimum capital requirements) to cover and value the main inherent risks of each kind of insurance company.

SRC solvency ratio= $\frac{\text{Own funds}}{\text{Solvency capital requirement (SCR)}}$ → is set at a level that estimates that insurers and reinsurers can meet their obligations over the following 12 months with a 99.5% probability.

MCR: threshold below which a national regulatory agency would intervene.

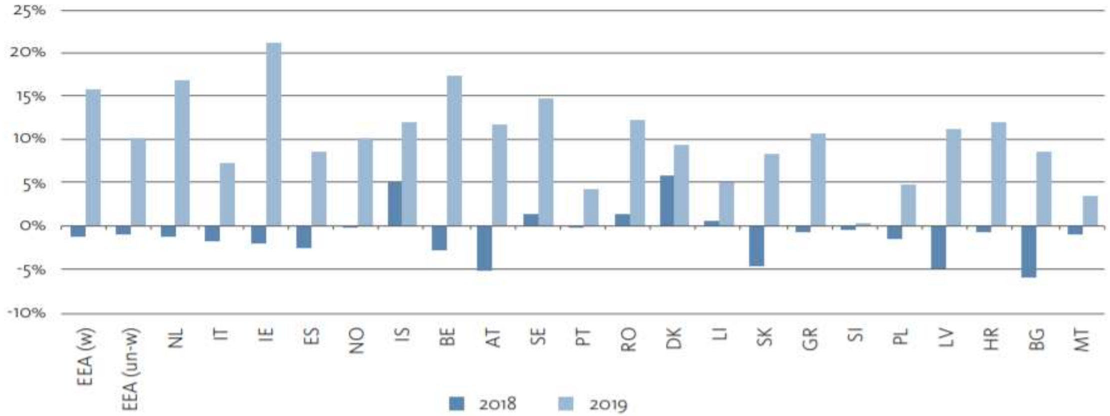
➢ Solvency and profitability metrics of pension funds

Cover ratios by country in 2019



$$\text{Cover ratio} = \frac{\text{net assets covering technical provisions}}{\text{technical provisions}}$$

ROA



Source: EIOPA Financial Stability Report July 2020
Notes: 2019 data are preliminary. Weighted data (w) and un-weighted data (un-w) are based on countries that report data. Weights based on total assets. Cover ratios refer only to DB schemes. Due to different calculation methods and legislation, the reported cover ratios are not fully comparable across jurisdictions..

The narrow measure of non-bank financial intermediation: activity of a group of heterogeneous institutions which, under certain circumstances, engage in a business with aspects similar to those of a regular bank business.

- In recent years, this sector has risen due to:
  - the contraction of bank credit
  - the prolonged environment of low interest rates

  → Development of new investment and funding activities aside from the banking channel

- Concerns about the suitability of its regulation gave it an unfavorable connotation (*shadow banking*). In many countries these entities are appropriately regulated and supervised, although their regulation differs from banking regulation and should possibly evolve to adapt to the risks posed by this new financial reality.

The FSB framework to estimate and monitor this narrow measure involves two steps:

1) Estimating an aggregate measure of the non-bank financial intermediation (MUNFI).

2) Narrowing the focus to non-bank financial entities that are involved in credit intermediation and have potential for posing risks to financial stability. To this end, the FSB classifies the entities into 5 economic functions (EF):

EF	Definition	Typical entity types
EF1	Management of collective investment vehicles with features that make them susceptible to runs	MMFs, fixed income funds, mixed funds, credit hedge funds, real estate funds
EF2	Loan provision that is dependent on short-term funding	Finance companies, leasing/factoring companies, consumer credit companies
EF3	Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets	Broker-dealers, securities finance companies
EF4	Facilitation of credit creation	Credit insurance companies, financial guarantors, monolines
EF5	Securitisation-based credit intermediation and funding of financial entities	Securitisation vehicles, structured finance vehicles, asset-backed securities

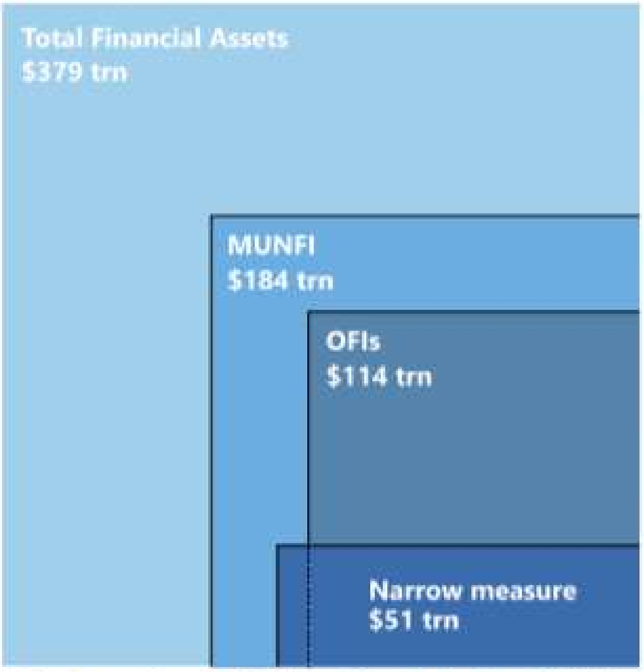
1.2 THE NARROW MEASURE OF NON-BANK FINANCIAL INTERMEDIATION

- The FSB, in its *Global Monitoring Report on Non-Bank Financial Intermediation 2019* estimated that the **total assets** of the narrow measure of non-bank financial intermediation reached **51USD trillion** in 2018.

Size of monitoring aggregates and composition of the narrow measure

At end-2018 Exhibit 0-1

Narrowing down[1]



Composition of the narrow measure[2]

Economic Functions	Size (USD trillion)	Share (%)	Change in 2018 (%)
EF1 (*collective investment vehicles with features that make them susceptible to runs*)	36.6	72.0	0.4
EF2 (*lending dependent on short-term funding*)	3.6	7.0	6.9
EF3 (*market intermediation dependent on short-term funding*)	4.5	8.8	8.7
EF4 (*facilitation of credit intermediation*)	0.3	0.6	5.0
EF5 (*securitisation-based credit intermediation*)	4.7	9.3	0.0
Unallocated	1.1	2.3	9.5
Total	**50.9**	**100**	**1.7**

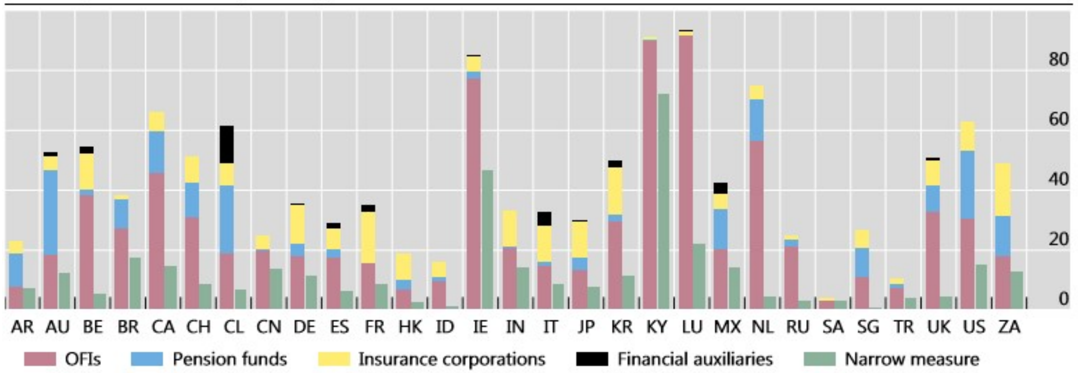
[1] Total financial assets, MUNFI and OFIs are based on 21+EA Group; Narrow measure is based on the 29-Group. [2] Net of prudential consolidation into banking groups. For additional details on these categories, see Section 4.

Source: Jurisdictions' 2019 submissions (national sector balance sheet and other data); FSB calculations.

- It is a very **heterogeneous sector, with a high relevance and growth of the investment funds**

Narrowing down by jurisdiction

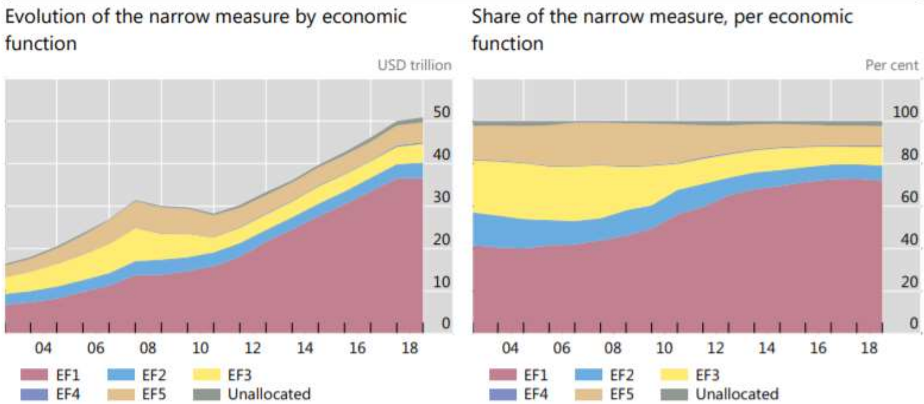
29-Group, end-2018; as a percentage of total financial assets — Exhibit 4-3



Sources: Jurisdictions' 2019 submissions (national sector balance sheet and other data); FSB calculations.

Classification by economic function[1]

29-Group — Exhibit 4-8



Unallocated = assets of entities that were assessed to be involved in NBFI, but which could not be assigned to a specific economic function.

[1] Net of entities prudentially consolidated into banking groups.

Sources: Jurisdictions' 2019 submissions (national sector balance sheet and other data); FSB calculations.

- **Financial stability measures** of the narrow measure of non-bank financial intermediation

Credit intermediation

$$CI1 = \frac{credit\ assets}{total\ financial\ assets}$$

$$CI2 = \frac{loans}{total\ financial\ assets}$$

Maturity transformation

$$MT1 = \frac{LT\ assets - equity - \quad liabilities}{total\ financial\ assets}$$

$$MT2 = \frac{ST\ liabilities}{ST\ assets}$$

Liquidity transformation

$$LT1 = \frac{total\ finanial\ assets - liquid\ assets(narrow) + ST\ liabilities}{total\ financial\ assets}$$

$$LT2 = \frac{total\ financial\ assets - liquid\ assets\ (broad) + ST\ liabilities}{total\ financial\ assets}$$

Leverage

$$L = \frac{total\ financial\ assets}{equity}$$

Main conclusions of the EF metrics analysis:

High credit intermediation of collective investment funds, finance companies (and other EF2 entities) and securitisation-based intermediation

Maturity and liquidity transformation risks management can be challenging for some funds during times of market stress

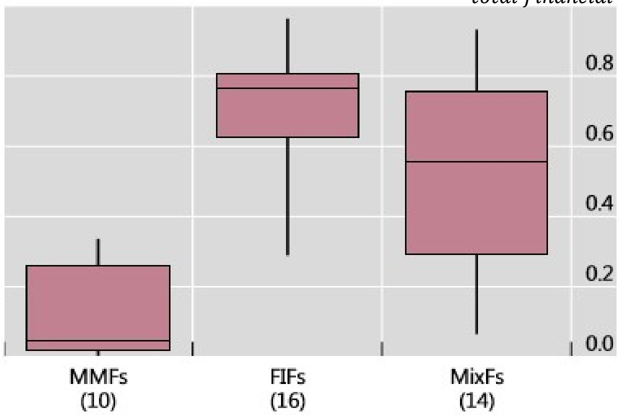
Significant and increased leverage in broker-dealers activities and in securitisation-based intermediation. Finance companies (and other EF2 entities) show relatively high leverage when off-balance sheet exposures are taken into account

Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020, and publications in previous years)

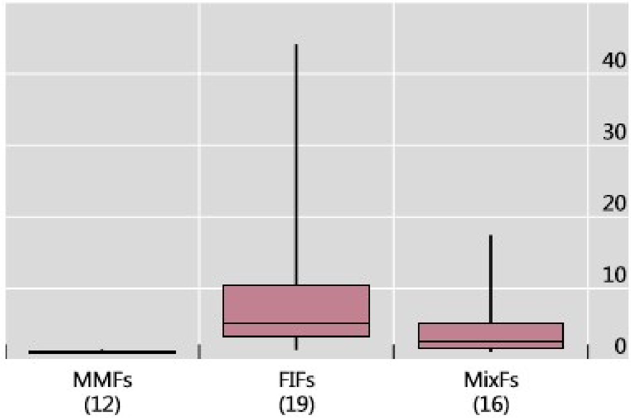
See annex for more details

- Maturity and liquidity transformation metrics of **EF1** intermediaries:

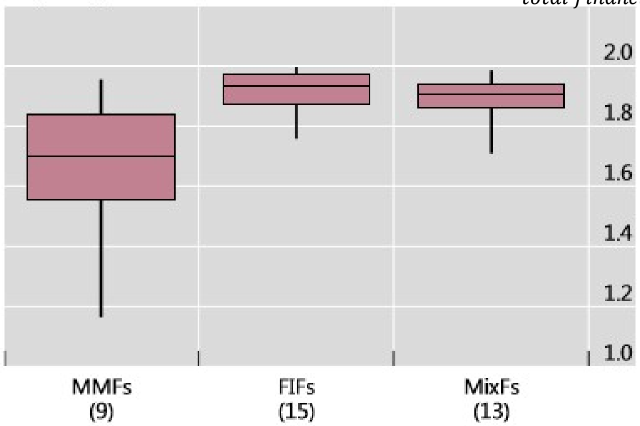
Maturity transformation 1 $MT1 = \frac{LT\ assets - equity - LT\ liabilities}{total\ financial\ assets}$



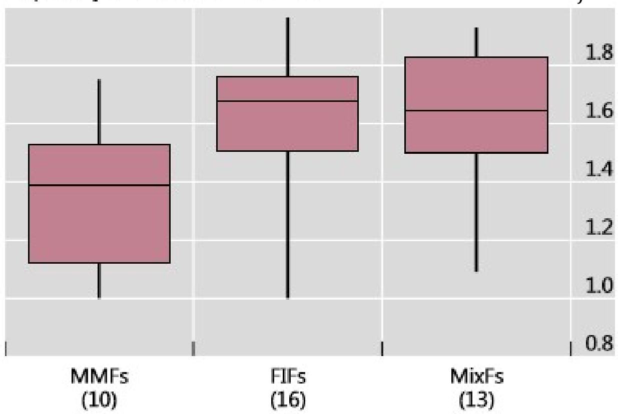
Maturity transformation 2 $MT2 = \frac{ST\ liabilities}{ST\ assets}$



Liquidity transformation 1 $LT1 = \frac{total\ finanial\ A - liquid\ A(narrow) + ST\ L}{total\ financial\ A}$



Liquidity transformation 2 $LT2 = \frac{total\ financial\ A - liquid\ A(broad) + ST\ L}{total\ financial\ A}$



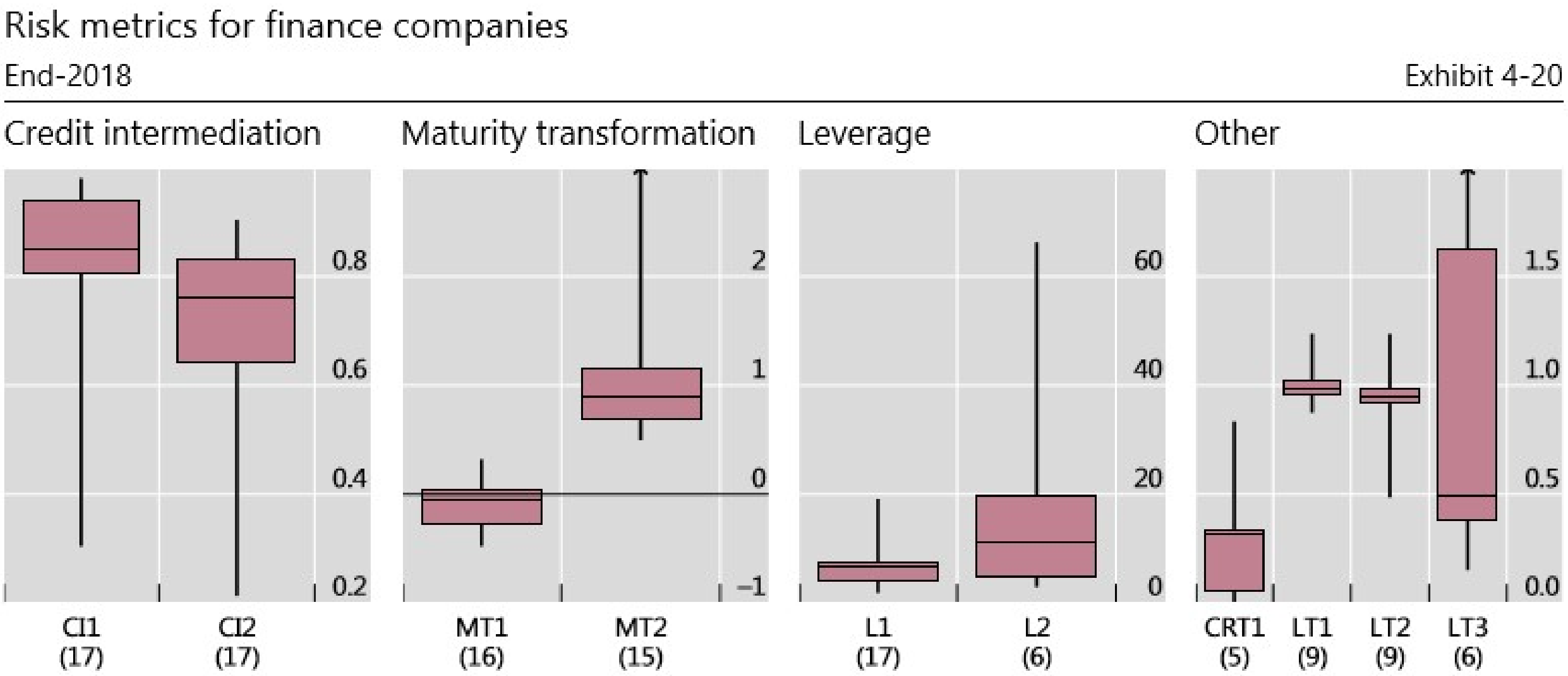
MMFs = money market funds; FIFs = fixed income funds; MixFs = mixed funds. In parenthesis, number of reporting jurisdictions. Charts show the median, the percentiles 25 and 75 (box) and the maximum and minimum values as end points of the thin vertical lines.

Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020, and publications in previous years)

See annex for more details

➢ Summary of metrics of **EF2** intermediaries:

(mainly finance companies)



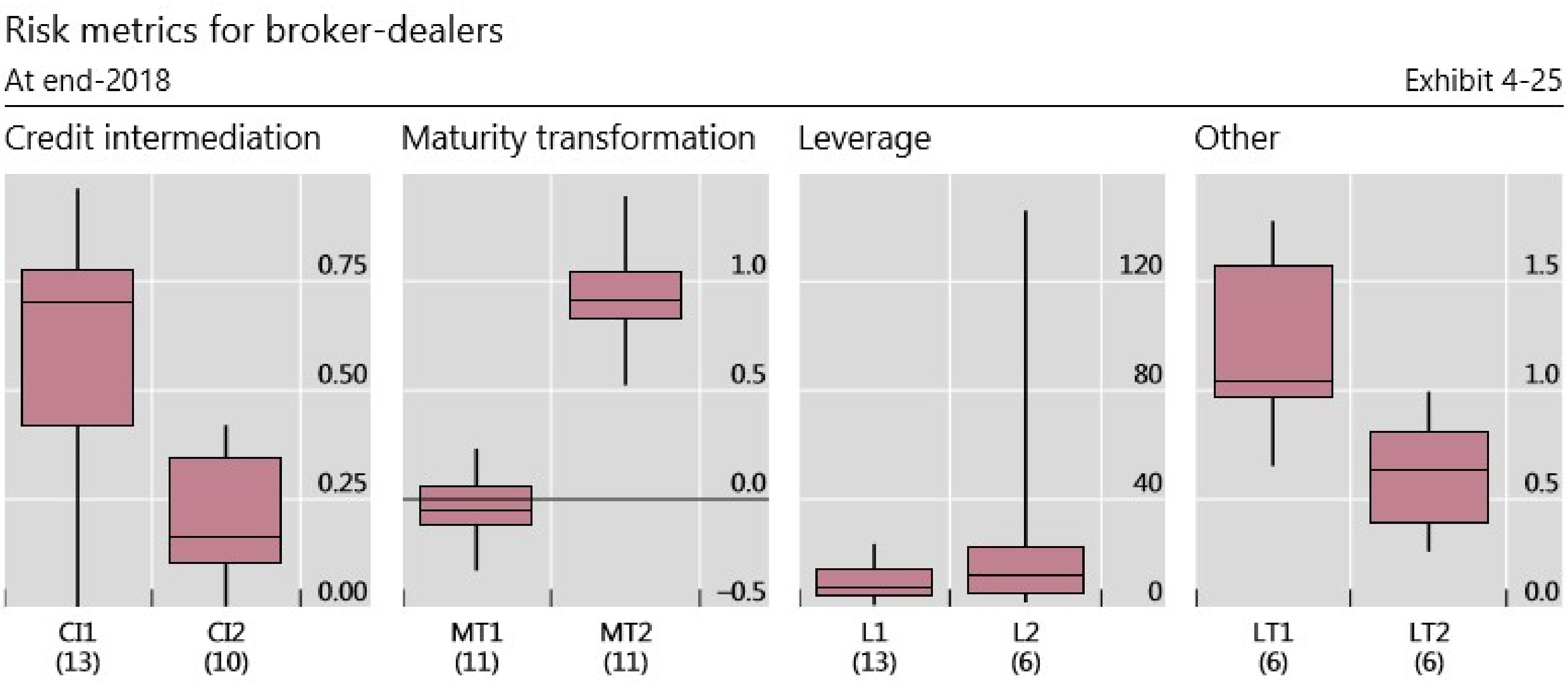
In parenthesis, number of reporting jurisdictions. Charts show the median, the percentiles 25 and 75 (box) and the maximum and minimum values as end points of the thin vertical lines.

Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020, and publications in previous years)

See annex for more details

➢ Summary of metrics of **EF2** intermediaries:

(mainly brokers-dealers)



In parenthesis, number of reporting jurisdictions. Charts show the median, the percentiles 25 and 75 (box) and the maximum and minimum values as end points of the thin vertical lines.

Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020, and publications in previous years)

See annex for more details

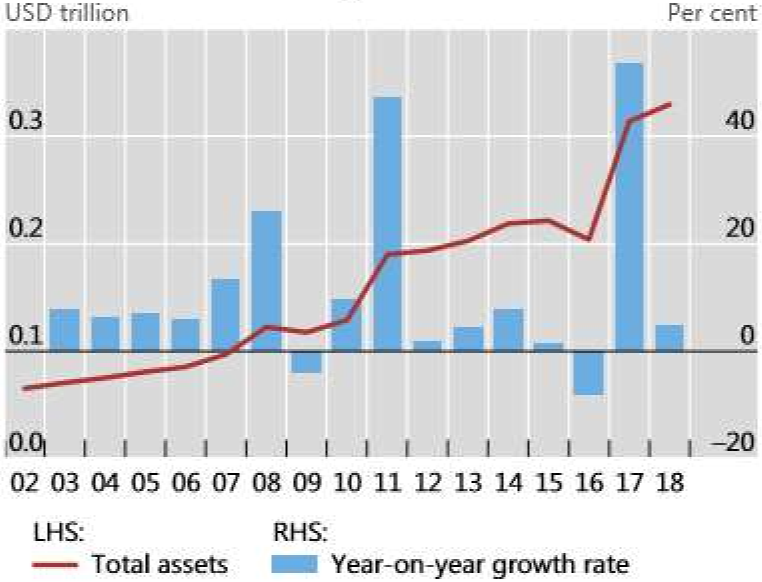
➢ Analysis of **EF4** intermediaries:

(entities that insure or guarantee financial products by writing insurance on structured securities, effectively providing credit enhancements to loans. Examples: credit insurance companies, financial guarantors or monolines)

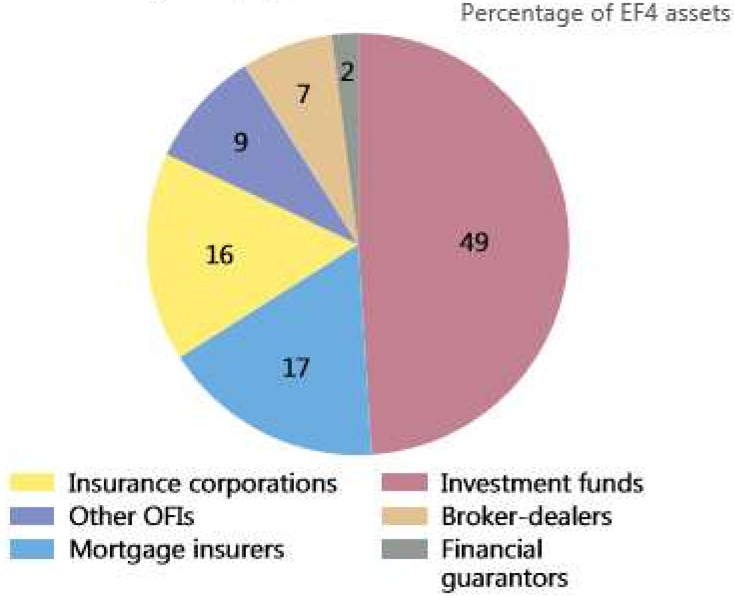
- Due to the small size of EF4 assets, the relatively sparse risk data provided by jurisdictions and the unique nature of EF4, it is currently difficult to interpret the risk metrics of EF4 (they are not published).

- EF4's impact and importance may be understated due to the difficulty of adequately capturing off-balance sheet exposures. Furthermore, EF4 entities may help create excessive risk-taking if risks are mispriced.

Financial assets level and growth



Breakdown by entity type

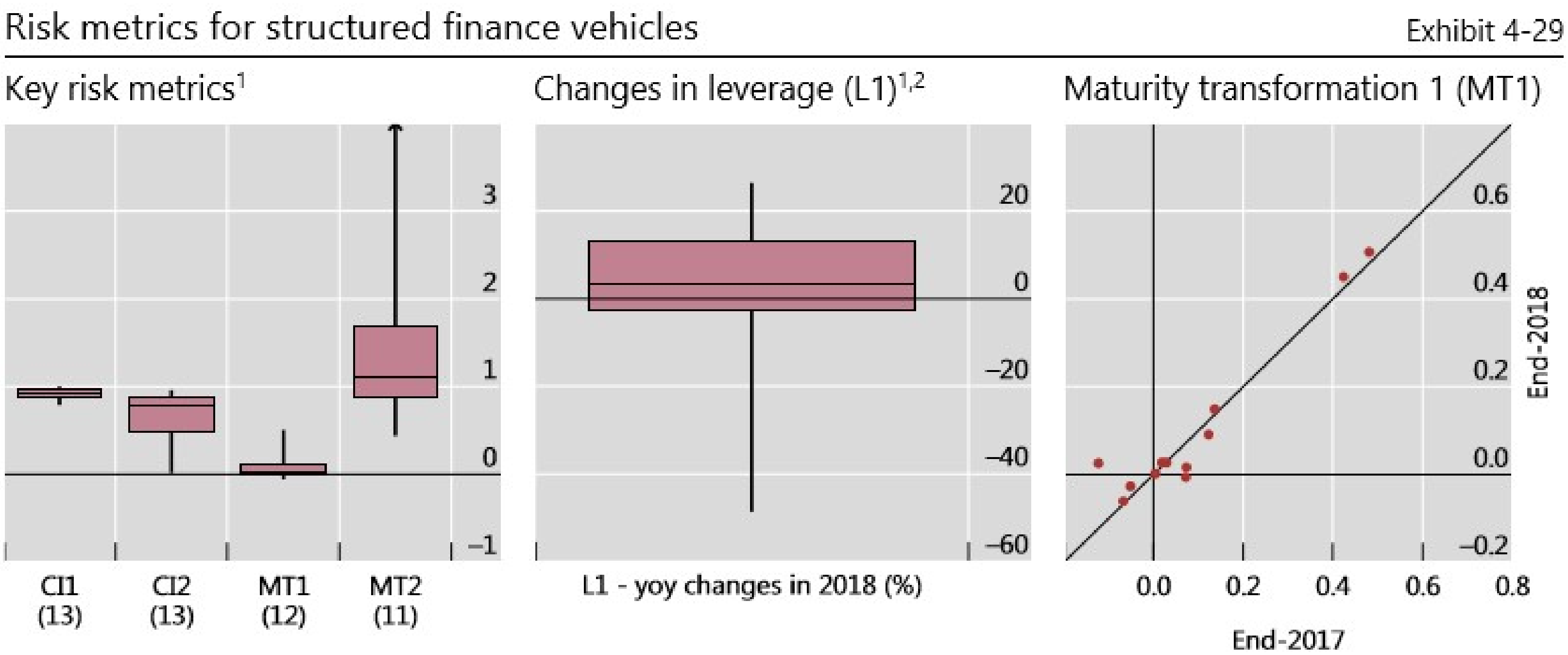


Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020, and publications in previous years)

See annex for more details

➢ Summary of metrics and analysis of **EF5** intermediaries:

(securitisation-based intermediation or funding of financial entities through investment funds to finance illiquid assets by raising funds from markets)



1 In parenthesis, number of reporting jurisdictions. Charts show the median, the percentiles 25 and 75 (box) and the maximum and minimum values as end points of the thin vertical lines. 2 y-o-y changes of reporting jurisdictions.

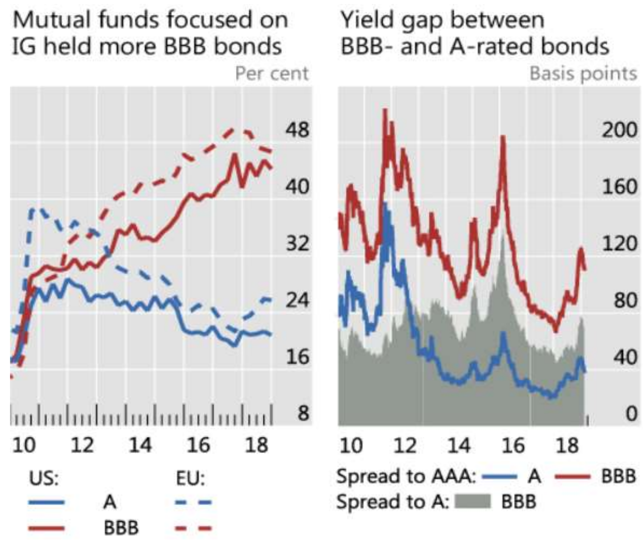
Source: Global Monitoring Report on Non-Bank Financial Intermediation 2019 (FSB 2020, and publications in previous years)

See annex for more details

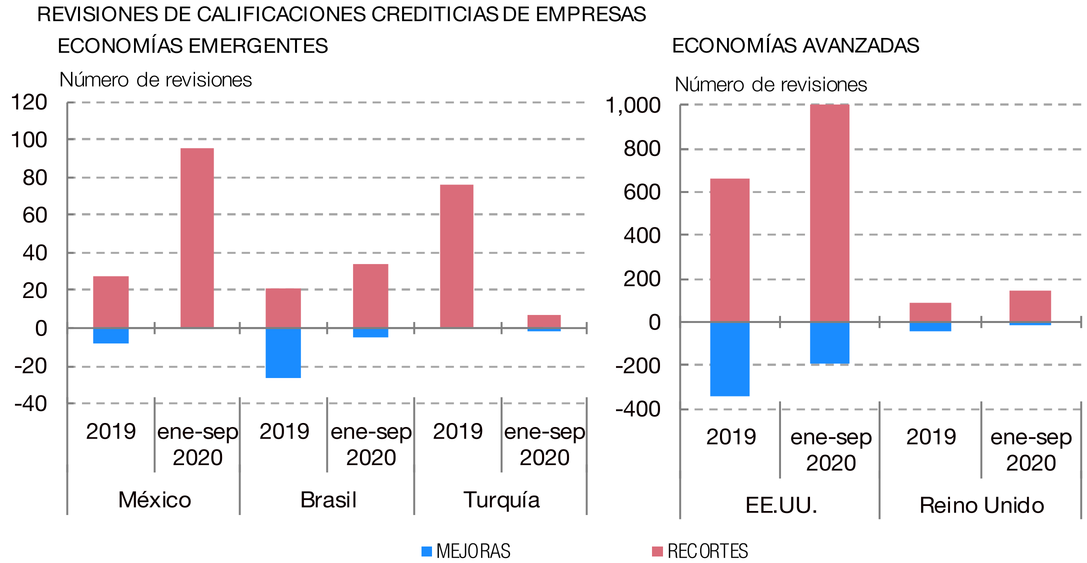
CONTENT

The investment mandates of certain financial intermediaries can amplify the negative effects for financial stability of credit rating downgrades

- Since the global financial crisis, collective investment funds classified as investment grade have increased the share of BBB securities (lowest investment grade) in their portfolio.
- In the case of credit rating downgrades, the effect could be especially acute if they represent a shift from investment grade to high yield.



Source: BIS Quarterly Review, March 2019



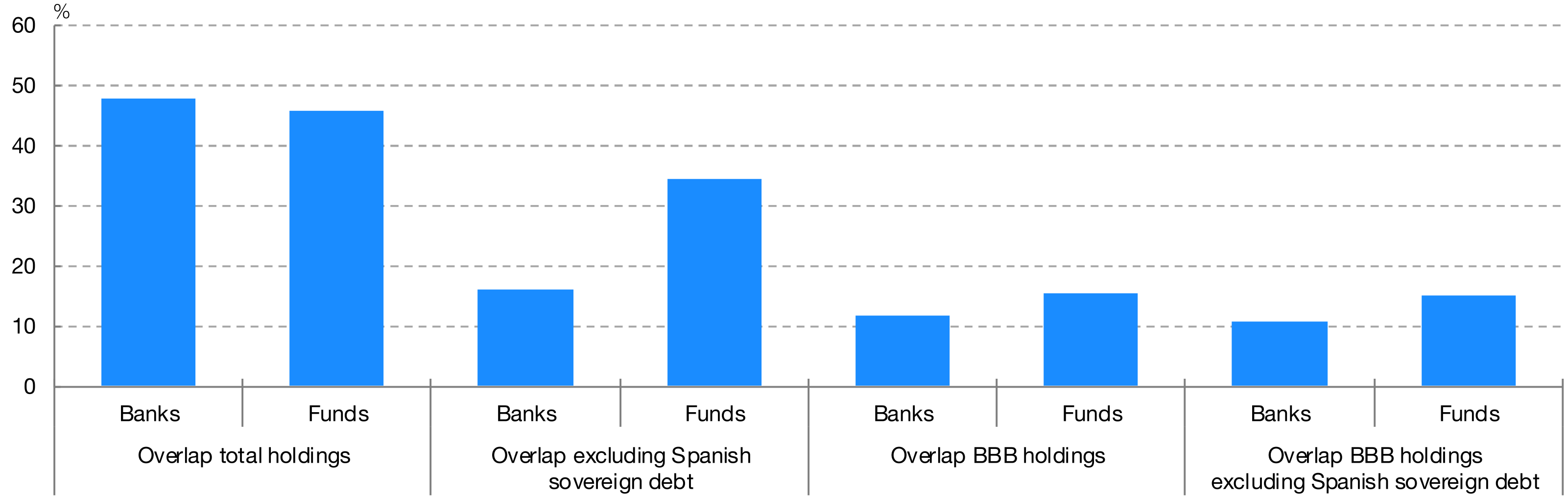
Source: Banco de España, Financial Stability Review, Autumn 2020

- The mandate of many funds would require them to sell securities that lose the investment grade status. As a result, the value of these securities could suddenly fall. Other financial intermediaries could suffer losses on their portfolios that included assets affected by the fall in value.

Interconnections among financial institutions through holdings of securities issued by a common issuers could amplify shocks

- A high percentage of banks' and investment funds' portfolios are invested in assets of the same issuers.
  - The effect of rating downgrades from investment grade to high yield could be amplified through holdings of securities issued by common issuers. (Ie.: fire sales and further reductions in prices affecting the value of portfolios of different financial institutions).

Share of portfolio invested in assets of the same issuers. Spanish entities



Source: Banco de España, Financial Stability Review, Autumn 2020.

Note: the vertical axis shows the weight of these holdings as a percentage of each sector's total securities portfolio or of certain segments in their portfolios. Holdings existing in June 2020 and credit ratings updated as of September 2020.

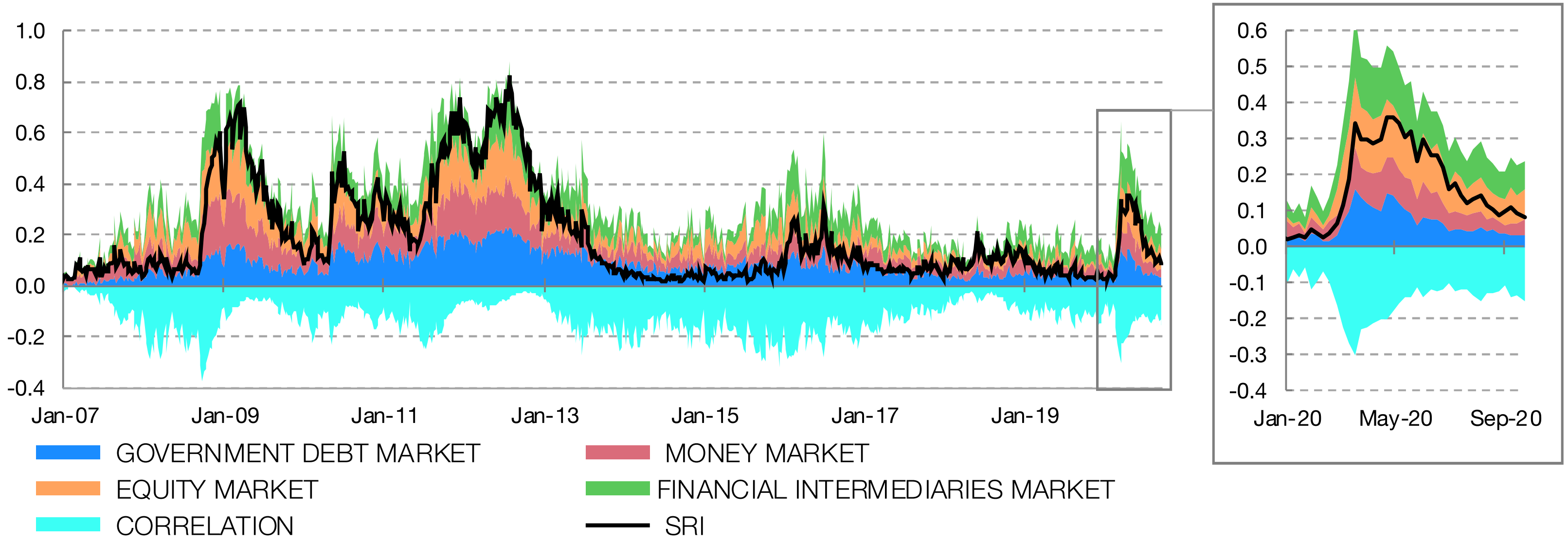
- In Spain however, a significant portion of the holdings they have in common are due to sovereign bond investments. At the same time, the overlap is considerably lower in assets whose rating is at the lower range of investment grade.

CONTENT

- The crisis caused by COVID-19 triggered a rapid and intense increase in the systemic risk indicator of the Spanish financial system.
  - Among the different segments, the level of stress of the non-bank financial intermediaries is particularly high, driven by strong decreases in asset prices and volatility spikes.

- These tensions have diminished considerably following intervention by economic and, in particular, monetary authorities.

Systemic risk indicator (SRI) of the Spanish financial system

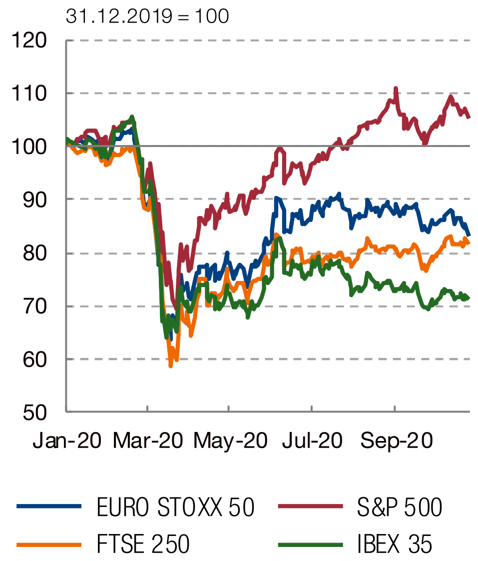


Source: Banco de España, Financial Stability Review, Autumn 2020.

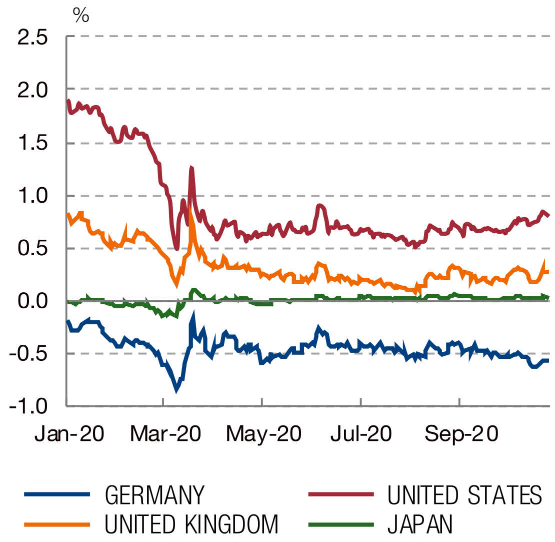
➢ How the risks to financial stability evolve will largely depend on the pandemic and its economic effects. Key areas of analysis are:

- **Market risk**
  - Falls in asset prices and volatility spikes, which took place mainly at the beginning of the pandemic.
  - In bond markets, central banks’ asset purchases have contained risk premiums, though there is a higher heterogeneity in corporate bond yields (high yield bonds were more affected).

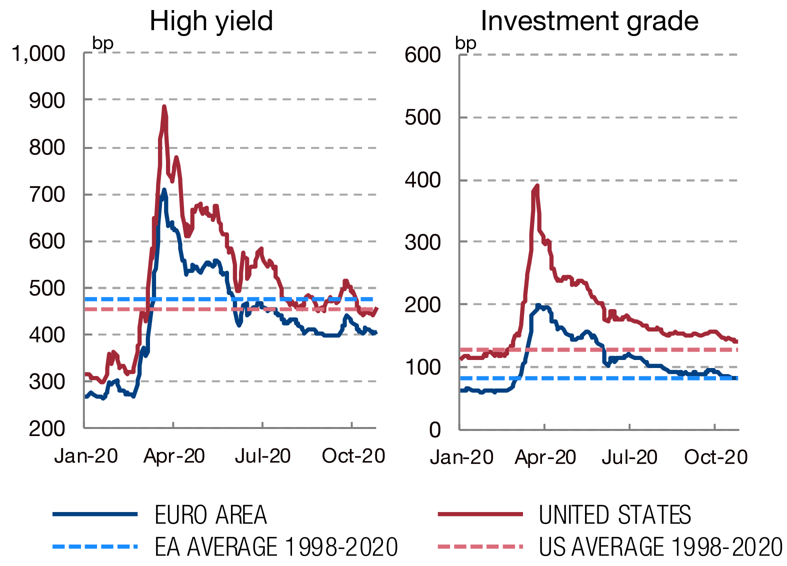
Stock market indices



10-year bond yields



Corporate bond yield spreads

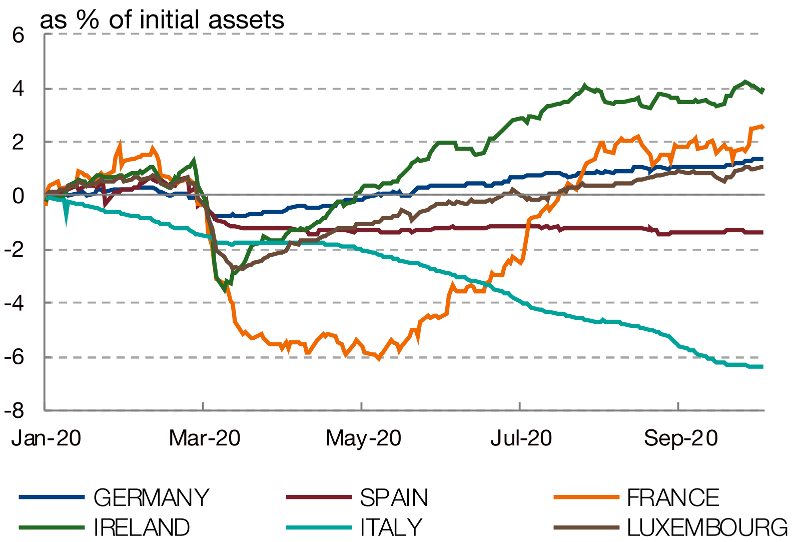


Note: spreads relative to swap curve

Source: Banco de España, Financial Stability Review, Autumn 2020.

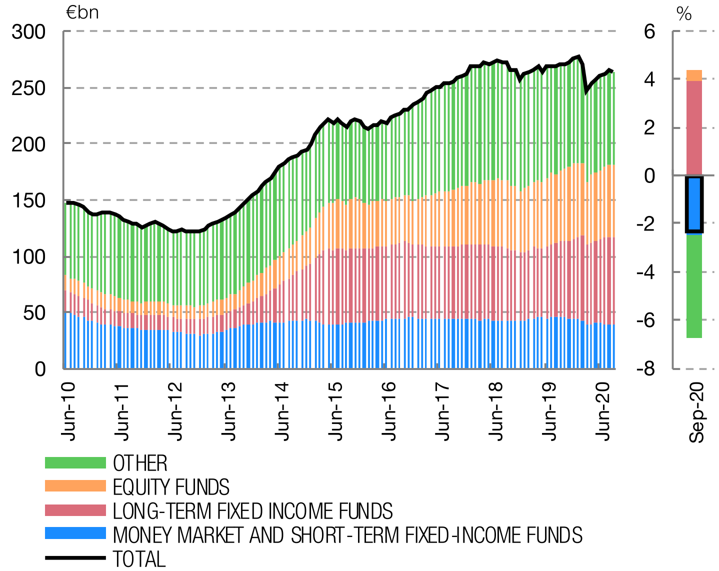
- **Liquidity risk and assets of investment funds**
  - Investment funds in several countries experienced net capital outflows at the beginning of the pandemic
    → Some funds had to sell part of their assets exerting a further downward pressure on prices in the markets.
  - Spanish funds contained the net outflows since the beginning of April, and the situation remains stable since then.
  - The sharp fall in investment funds' assets at the onset of the pandemic was subsequently reversed by their return to profitability owing to the more favorable performance of financial markets valuations.

Net inflows accumulated since 15 January 2020



Breakdown of investment funds by category

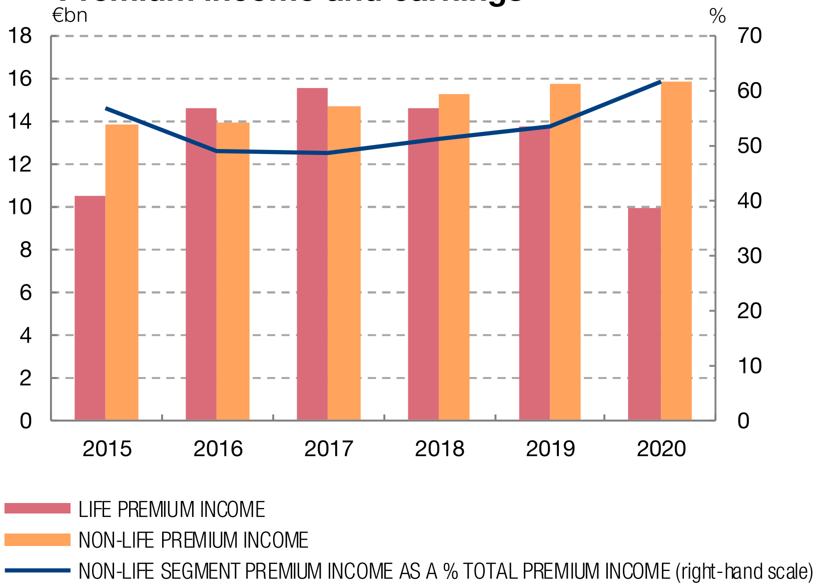
Volume (left-hand s.) and y-o-y growth at Sep. 2020 (right-hand sc.)



Source: Banco de España, Financial Stability Review, Autumn 2020.

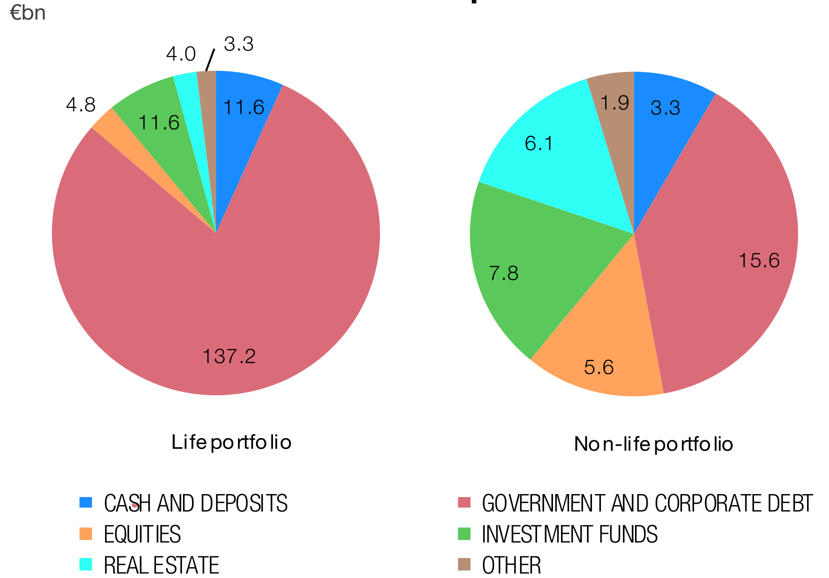
- **Low profitability of the insurance sector, mainly in the life segment, and risk profile of the portfolio in a low interest rate environment**
  - The life segment faces growing difficulties to attract savings, with an investment portfolio with a high weight of sovereign and corporate bonds with limited yields due to the low interest rate environment.
  - The non-life insurance segment's portfolio has a riskier profile, with higher probability → involves taking on greater risks.

Premium income and earnings



Source: Banco de España, Financial Stability Review, Autumn 2020.

Distribution of insurance companies' investment



Central bank intervention has contained the negative effect of the COVID-19 crisis on financial asset valuations to date. This is estimated to have limited balance sheet impairment related to the investment portfolio, in particular, of the riskier non-life segment.

THANKS FOR YOUR ATTENTION

Annex: analysis of financial stability metrics of the narrow measure of non-bank financial intermediation by economic function (EF).

Economic Function	Analysis of financial stability metrics by EF
EF1 Mainly, collective investment vehicles with features that make them susceptible to runs	High dispersion of the metrics depending on the entity type: - Elevated credit intermediation, particularly in the case of MMFs and fixed income funds. - Substantial maturity transformation for fixed income and mixed funds. - High liquidity transformation, in particular in the case of fixed income funds. - Low leverage, due to the fact that many jurisdictions have regulatory limits to leverage of these kind of institutions. Maturity and liquidity transformation risks management can be challenging for some funds during times of market stress.
EF2 Loan provision that is dependent on short-term funding (finance companies, leasing/factoring companies, consumption credit companies).	- High credit intermediation - relatively high leverage when off-balance sheet exposures are taken into account. - On average, maturity and liquidity transformation not significant. Finance companies often concentrate their lending in specific sectors (concentration risk). Regarding funding, in some jurisdictions these entities are heavily dependent on short-term funding or wholesale funding, or are dependent on parent companies for funding (also exposed to the same sectors).

Economic function	Analysis of financial stability metrics by EF (cont.)
EF3 Intermediation of market activities that is dependent on short-term funding or on secured funding of client assets. (mainly broker-dealers)	- Moderate credit intermediation, mainly though debt securities and reverse repos. - Low maturity and liquidity transformation. - Significant and growing leverage. However, still under the levels reached before the global financial crisis. Broker-dealers with high leverage and maturity and liquidity transformation can amplify shocks if market condition deteriorates or market prices decrease. They can be also subject to viability concerns if funding providers become concerned over the price deterioration of collateral supporting short-term borrowing.
EF4 Facilitation of credit creation Entities that insure or guarantee financial products by writing insurance on structured securities, effectively providing credit enhancements to loans (credit insurance companies, financial guarantors or monolines)	- Due to the small size of EF4 assets, the relatively sparse risk data provided by jurisdictions and the unique nature of EF4, it is currently difficult to interpret the risk metrics of EF4 (they are not published). EF4's impact and importance may be understated due to the difficulty of adequately capturing off-balance sheet exposures. Furthermore, EF4 entities may help create excessive risk-taking if risks are mispriced.
EF5 Securitisation-based credit intermediation and funding of financial entities	- High credit intermediation (more in loans than in bonds). - Low maturity transformation on average. - Significant and growing leverage. However, still under the levels reached before the global financial crisis. Securitisation could contribute to a build-up of excessive credit, maturity/liquidity transformation, leverage, or regulatory arbitrage in the system. This may be a greater risk in financial systems with relatively weak lending standards. The securitisation market is also sensitive to sudden reductions in market liquidity, particularly in the case of complex or opaque securitisations.