



BANK FOR INTERNATIONAL SETTLEMENTS

Measuring the shadow banking sector

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Policy relevance of shadow banking

- Shadow banking system: *credit intermediation involving entities and activities outside the regular banking system*
- Importance of the expansion of credit provided by the non-bank sector
 - Monitoring broad financial intermediation
 - Linkages: transmission of stress in one sector to the other
 - Potential systemic risks: maturity/liquidity transformation, imperfect credit risk transfer, leverage
 - Influence of regulatory arbitrage

FSB work on shadow banks

- FSB Global Shadow Banking Monitoring Report, 2015
 - Data: 26 jurisdictions, covering 80% of global GDP and 90% of global financial system assets
 - Offshore centres not captured
- G20 Data Gaps Initiative Phase II (2016-20): Recommendation 5
 - *"The G-20 economies to enhance data collection on the shadow banking system by contributing to the FSB monitoring process, including through the provision of sectoral accounts data...*
 - *...FSB to work on further improvements of the conceptual framework and developing standards and processes for collecting and aggregating consistent data at the global level".*

From the broad measure...

- Broad “Macro-mapping”

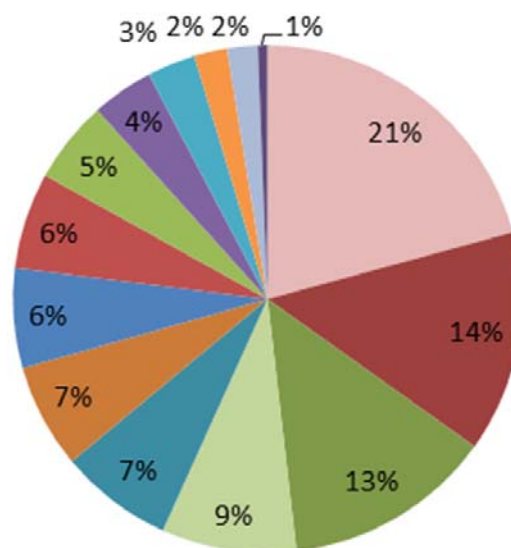
- Conservative estimate: Monitoring Universe of Nonbank Financial Intermediation (MUNFI)
- Based on national Flow of Funds (balance sheet data, on an entity residence basis)
- Focus on “Other Financial Intermediaries” (OFIs) and insurance companies and pension funds

- Purposes

- Monitoring trends outside of the banking sector
- Detecting where shadow banking risks may arise
- Detecting adaptations and cross-border regulatory arbitrage

... which primarily relies on OFIs...

Equity funds
Broker-dealers
Fixed income funds
Unidentified others
Structured finance vehicles
Dutch SFIs
MMFs
Other funds
Finance companies
Trust companies
Real estate investment funds/trusts
Identified others
US funding corporations
Hedge funds



- *Largest sector: other investment funds (eg equity, fixed income)*
- *Main others: Broker dealers, structured finance vehicles, finance companies and money market funds*
- *Hedge funds underestimated (limited granular FoF data, offshore centres)*

Share of subsector assets of OFIs in 2014 (26 jurisdictions)

Sources: National flow of funds data; other national sources; FSB calculations.

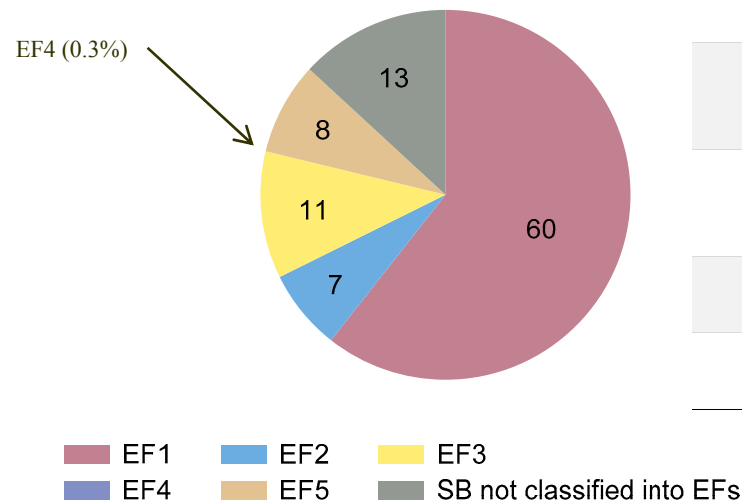
... narrowed down ...

- “Narrowing down” methodology involves the following deductions:
 - Pension funds (all) and those insurance companies not involved in the facilitation of credit creation
 - OFIs not directly engaged in credit intermediation or not exhibiting shadow banking risks (eg equity investment funds)
 - Entities already prudentially consolidated into banking groups: eg finance companies that are subsidiary of a banking group for which capital buffers are set on a consolidated basis, structured finance companies

... to the “economic function-based” narrow measure of shadow banking

- Identification of the sources of shadow banking risks in non-bank financial entities
- Based on 5 economic functions:
 - 1. Management of client cash pools with features that make them susceptible to runs
 - 2. Loan provision dependent on short-term funding
 - 3. Intermediation of market activities dependent on short-term funding / secured funding of client assets
 - 4. Facilitation of credit creation
 - 5. Securitisation-based credit intermediation and funding of financial entities

Shadow banking by economic function: Relative size

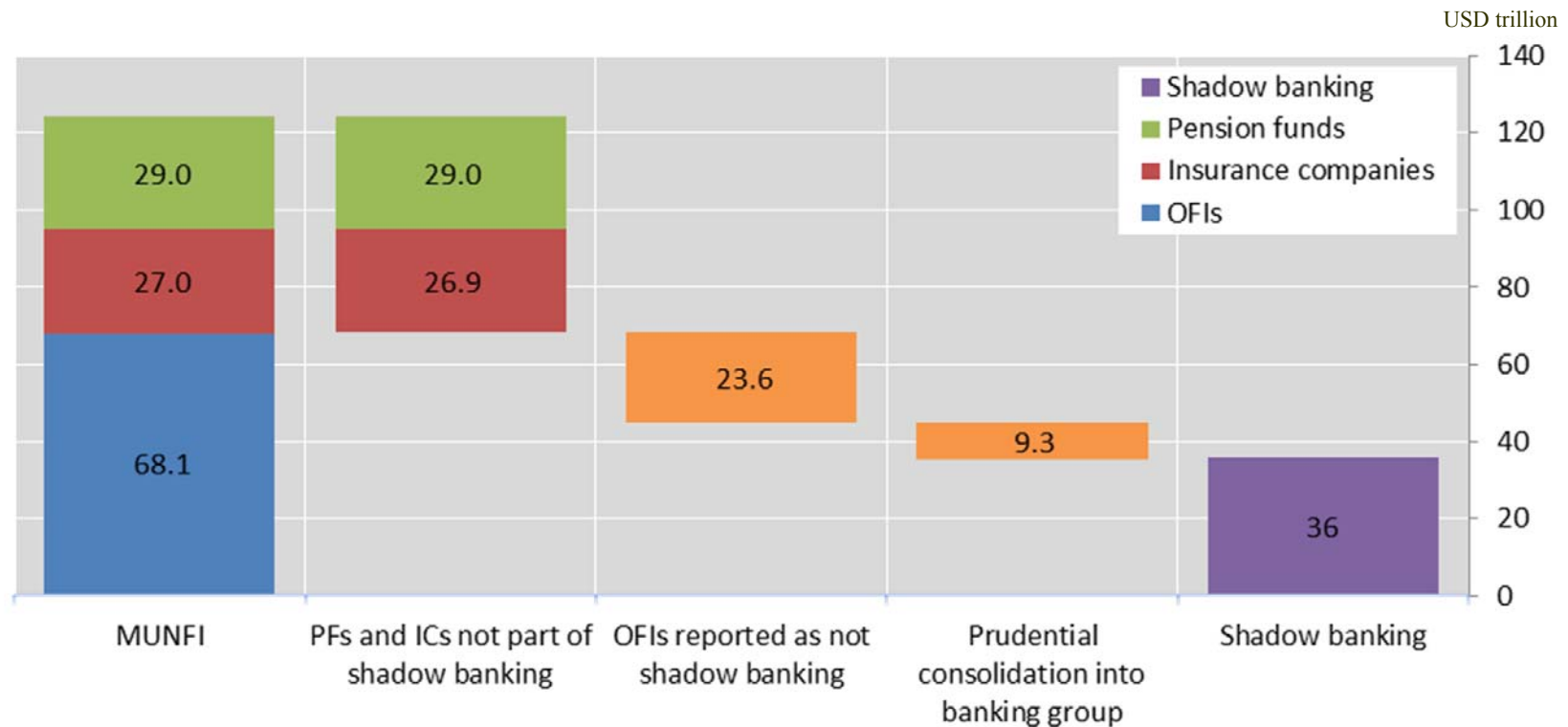


Economic Function	Definition	Typical entity types
EF1	Management of collective investment vehicles with features that make them susceptible to runs	Fixed income funds, mixed funds, credit hedge funds, real estate funds
EF2	Loan provision that is dependent on short-term funding	Finance companies, leasing companies, 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
EF4	Facilitation of credit creation	Credit insurance companies, financial guarantors, monolines
EF5	Securitisation-based credit intermediation and funding of financial entities	Securitisation vehicles

Size of economic functions, in % of total shadow banking (end-2014, 26 jurisdictions)

Sources: National financial accounts data; other national sources; FSB calculations.

Impact of the narrowing down exercise (end-2014)



Notes:

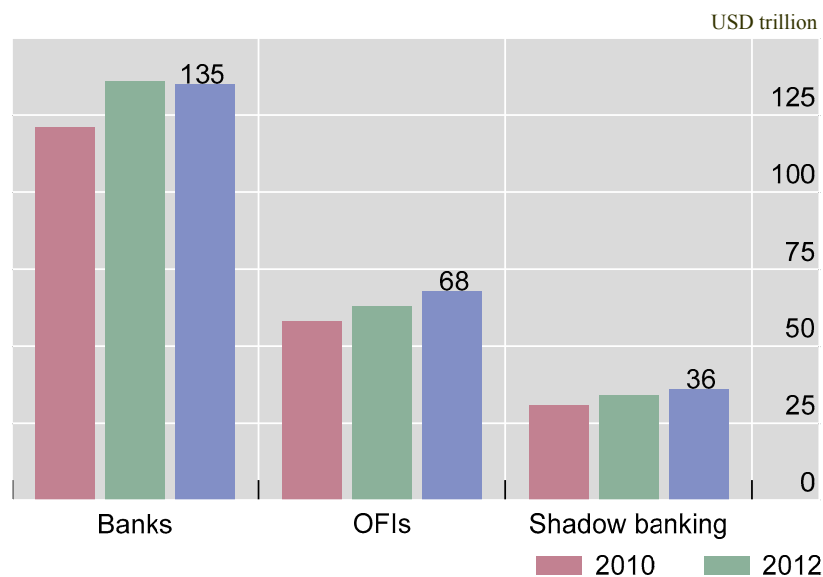
MUNFI = Monitoring Universe of Non-bank Financial Intermediation; PFs = Pension Funds; ICs = Insurance Companies; OFIs = Other Financial Intermediaries. Prudential consolidation into banking group = assets of classified entity types which are prudentially consolidated into a banking group; Shadow banking = shadow banking based on the economic functions.

26 jurisdictions

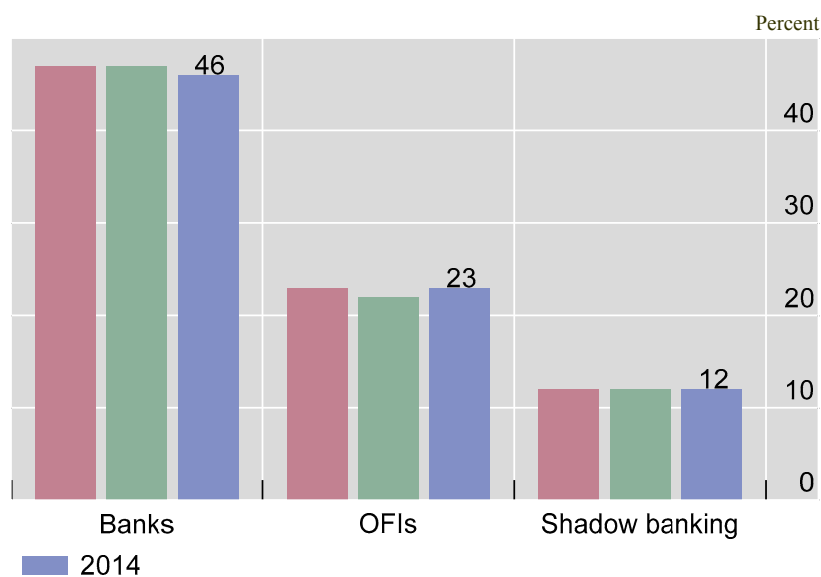
Sources: National financial accounts data; other national sources; FSB calculations.

Relative size of financial system sectors: banks, OFIs and shadow banking

Financial assets



Share of total financial assets

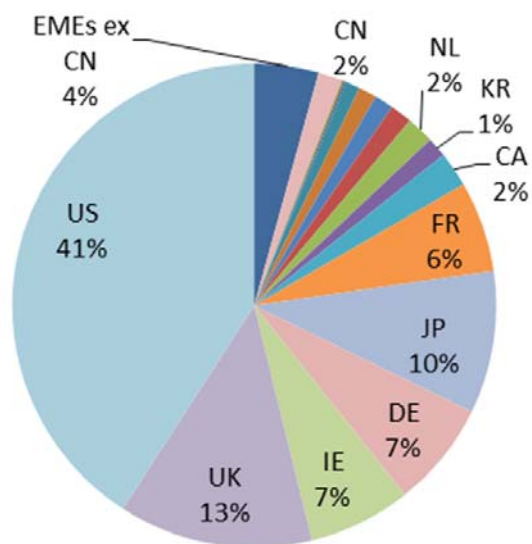


Notes: Banks = broader category of 'deposit-taking institutions'; OFIs = Other Financial Intermediaries; Shadow Banking = measure of shadow banking based on economic functions. These are not mutually exclusive categories, as shadow banking is largely contained in OFIs.
Sources: National financial accounts data; other national sources; FSB calculations.

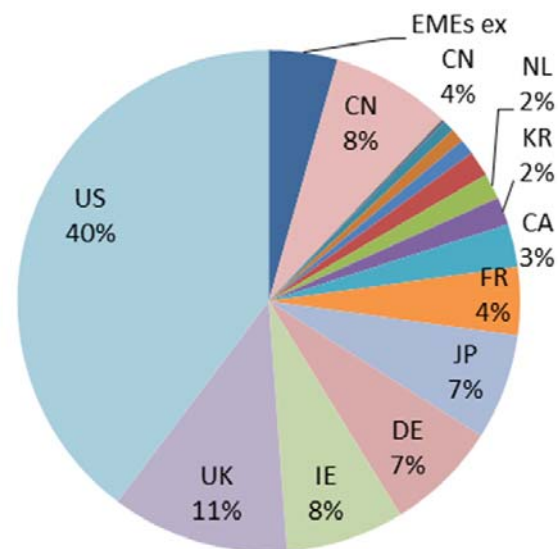
Assets of financial intermediaries (26 jurisdictions)

Shadow banking: geographic repartition

At end-2010



At end-2014

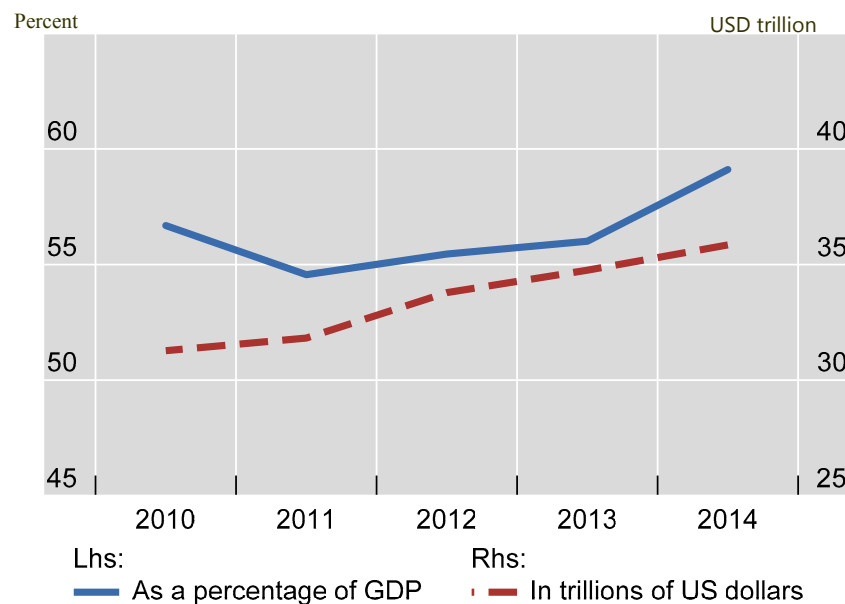


Note: CA = Canada; CN = China; DE = Germany; EMEs ex CN = Argentina, Brazil, Chile, India, Indonesia, Mexico, Russia, Turkey, Saudi Arabia, South Africa; FR = France; IE = Ireland; JP = Japan; KR = Korea; NL = Nederland; UK = United Kingdom; US = United States.

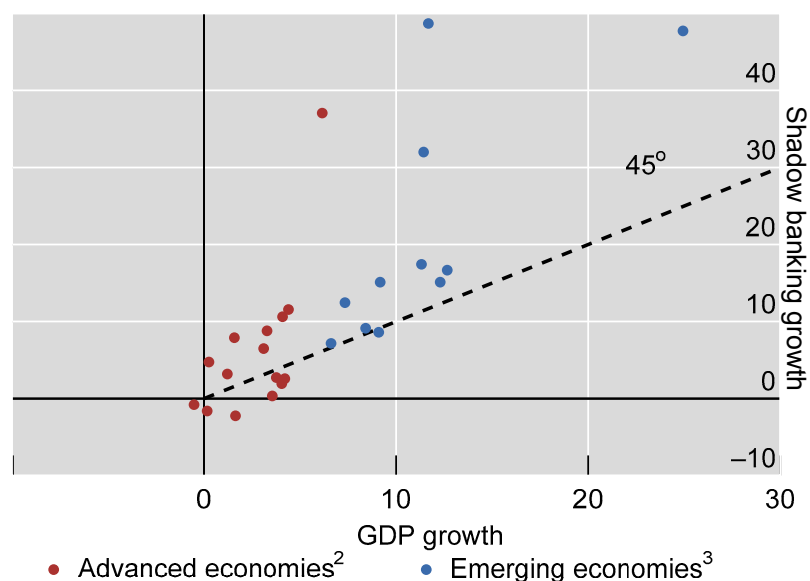
Sources: National financial accounts data; other national sources; FSB calculations.

Size of shadow banking relative to GDP

Shadow banking size relative to GDP



GDP versus shadow banking growth rates, 2011-2014¹



Notes:

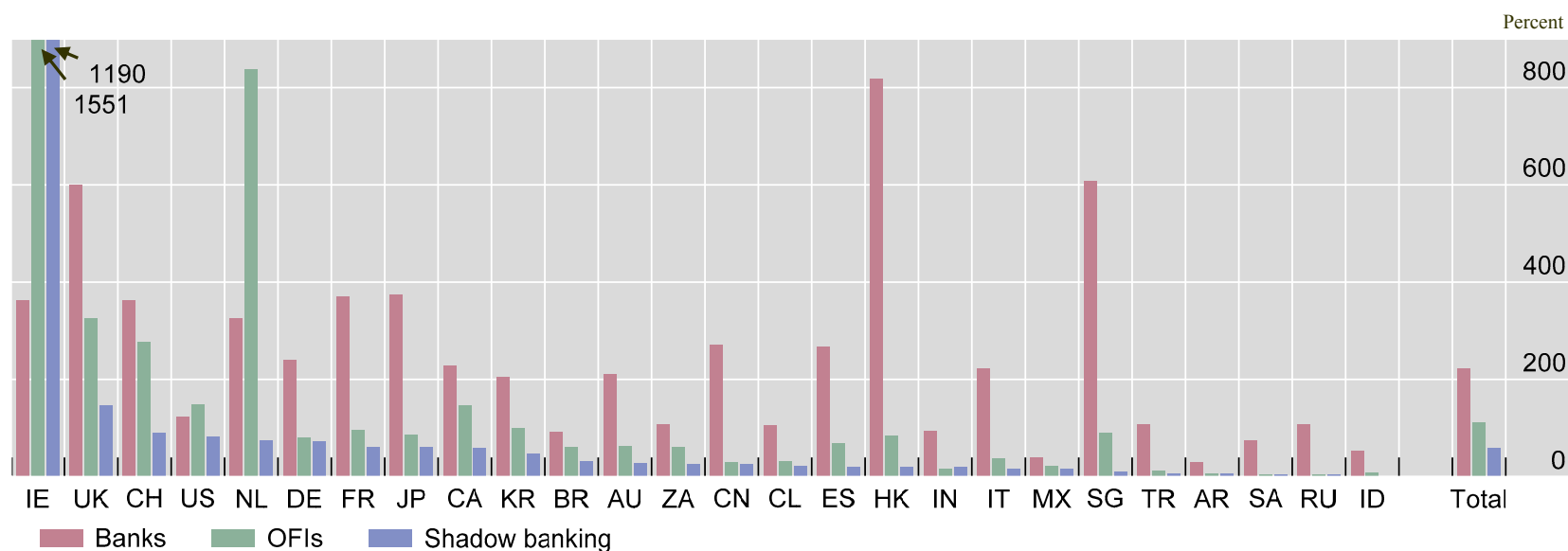
¹: Average annual growth rate during 2011-2014, adjusted for exchange rate effects, except for Singapore where growth rates from 2012-2014. >45° line indicates shadow banking assets growing faster than nominal GDP in local currency.

²: Advanced economies = Australia, Canada, Germany, Euro area, France, Hong Kong, Ireland, Italy, Japan, Korea, Netherlands, Singapore, Spain, Switzerland, United Kingdom, United States.

³: Emerging economies = Argentina, Brazil, Chile, China, India, Indonesia, Mexico, Russia, Turkey, Saudi Arabia, South Africa.

Sources: National financial accounts data; other national sources; FSB calculations.

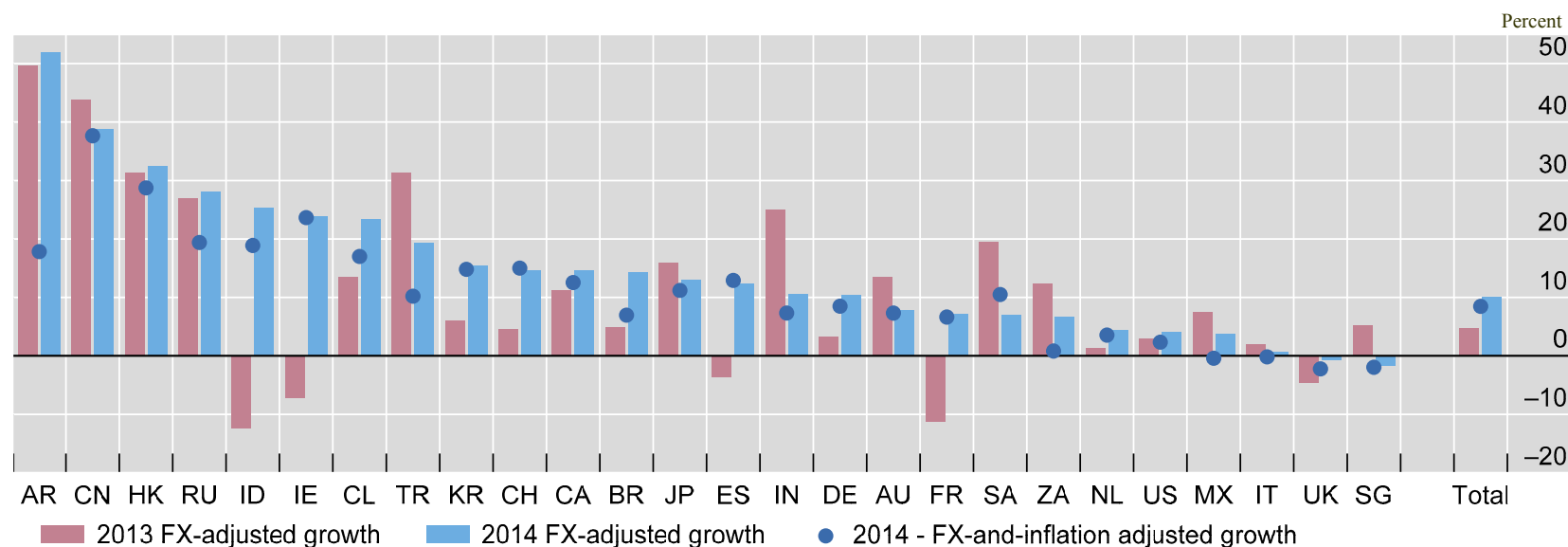
Shadow banking, OFIs and banks as a percent of GDP, by country



Note: Banks = broader category of 'deposit-taking institutions'; OFIs = Other Financial Intermediaries; Shadow Banking = economic function-based measure of shadow banking. AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CN = China; CL = Chile; DE = Germany; ES = Spain; FR = France; HK = Hong Kong; IE = Ireland; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; UK = United Kingdom; US = United States; ZA = South Africa.

Sources: National financial accounts data; other national sources; IMF; FSB calculations.

Annual growth of shadow banking: rapid increases in major EMEs recently



Note: Bars show year-over-year growth rate, controlling for exchange rate effects. Dots show year-over-year growth rates, controlling for exchange rate and inflation effects.

AR = Argentina; AU = Australia; BR = Brazil; CA = Canada; CH = Switzerland; CN = China; CL = Chile; DE = Germany; ES = Spain; FR = France; HK = Hong Kong; IE = Ireland; ID = Indonesia; IN = India; IT = Italy; JP = Japan; KR = Korea; MX = Mexico; NL = Netherlands; RU = Russia; SA = Saudi Arabia; SG = Singapore; TR = Turkey; UK = United Kingdom; US = United States; ZA = South Africa.

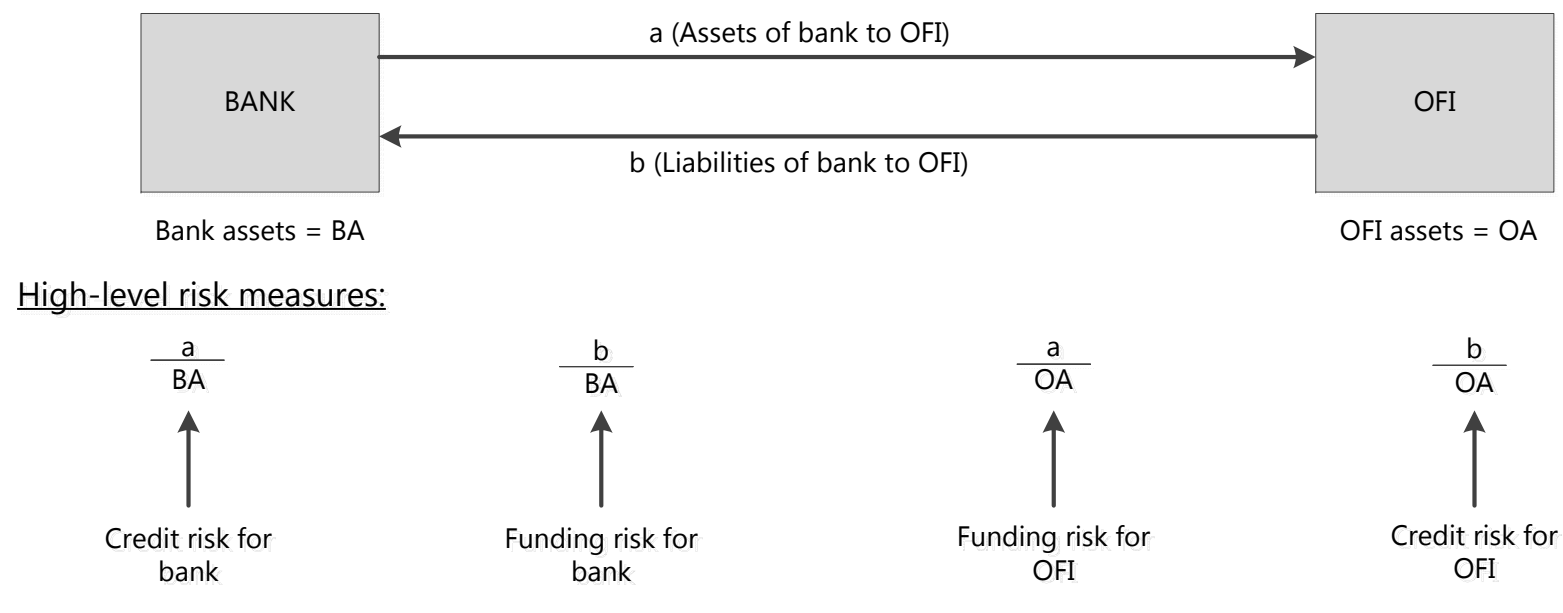
Sources: National financial accounts data; other national sources; IMF; FSB calculations.

Looking at interconnections

- Direct linkages when:
 - shadow banking entities form part of the bank intermediation chain
 - are directly owned by banks
 - benefit directly from bank support (explicit or implicit)
 - there is funding interdependence (eg holding of each other's assets such as debt securities)
- Indirect linkages
 - Investment in similar assets
 - Exposure to common counterparties

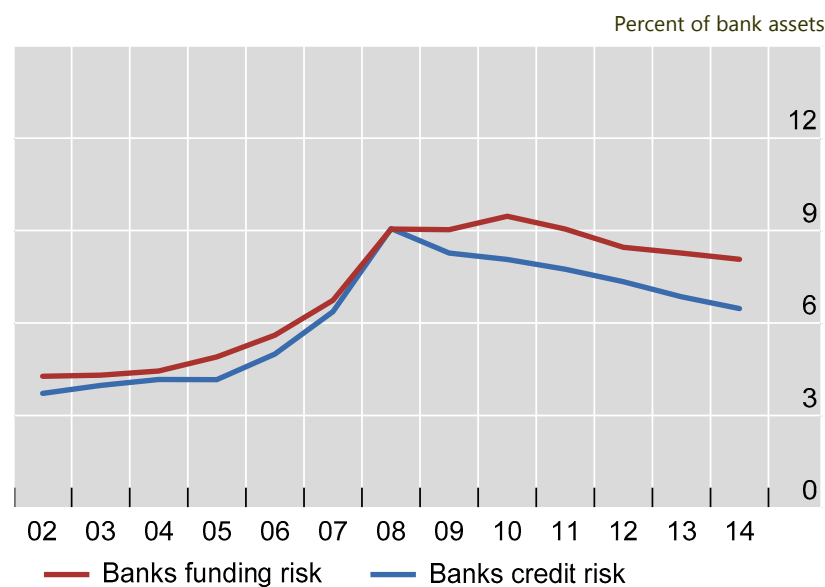
➔ These connections create a contagion channel, and can be amplified through feedback loop

A risk analysis framework of interconnectedness between banks and OFIs

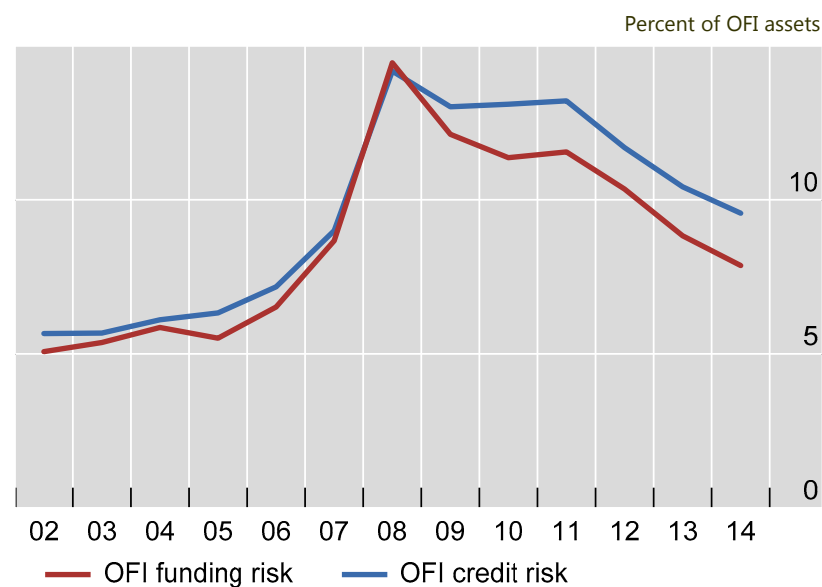


Banks' assets and liabilities to OFIs

Interconnectedness risks for banks



Interconnectedness risks for OFIs



Notes:

Average for 20 jurisdictions and the euro area (China, Japan, Korea, and Singapore did not report data on banks' assets and liabilities to OFIs, Hong Kong did not report banks' liabilities to OFIs).

Source: National financial accounts data; other national sources, FSB calculations.