NBFI Vulnerabilities Amid Tighter Financial Conditions

April 2023 GFSR Chapter 2

F. Cortes, C. Cuervo, T. Ehlers, A. Garcia Pascual (Team Co-lead),
P. Jeasakul, E. Kemp, D. King, N. Khanolkar,
T. Piontek (Team Co-lead), N. Sugimoto, F. Suntheim, R. Veyrune

Motivation and Chapter Structure

- Growing vulnerabilities in NBFIs since the global financial crisis may amplify financial strains

- Extent & pace of global monetary tightening to tackle decades-high inflation may have unintended consequences for financial markets

- The chapter discusses:
  - Challenges in monitoring these vulnerabilities (e.g., data gaps)
  - NBFI vulnerabilities related to leverage, liquidity and interconnectedness
  - Case studies to illustrate the interaction of NBFI vulnerabilities
  - Policy challenges & tradeoffs (price and financial stability) in the high-inflation environment

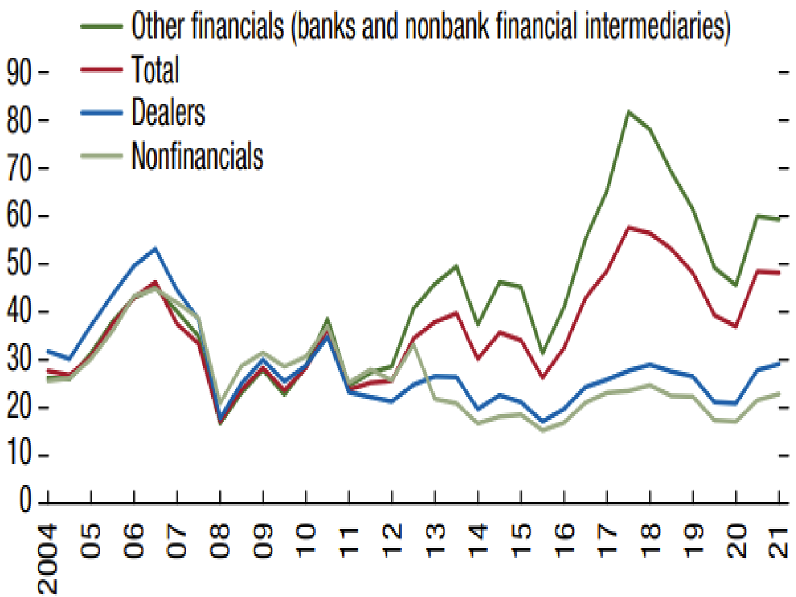
Regulatory Data Gaps

NBFI (GFA)	Financial Leverage	Liquidity	Interconnectedness	Currency Mismatches
Investment funds (excluding money market funds and hedge funds) ($58 trillion, 12% of GFA)				
Insurance companies ($40 trillion, 9% of GFA)				
Pension funds ($43 trillion, 9% of GFA)				
Money market funds ($8.5 trillion, 2% of GFA)	N/A			N/A
Structured finance vehicles ($6 trillion, 1% of GFA)				
Hedge funds ($6 trillion, 1% of GFA)				
CCPs ($0.7 trillion, 0.1% of GFA)	N/A			N/A

Leverage

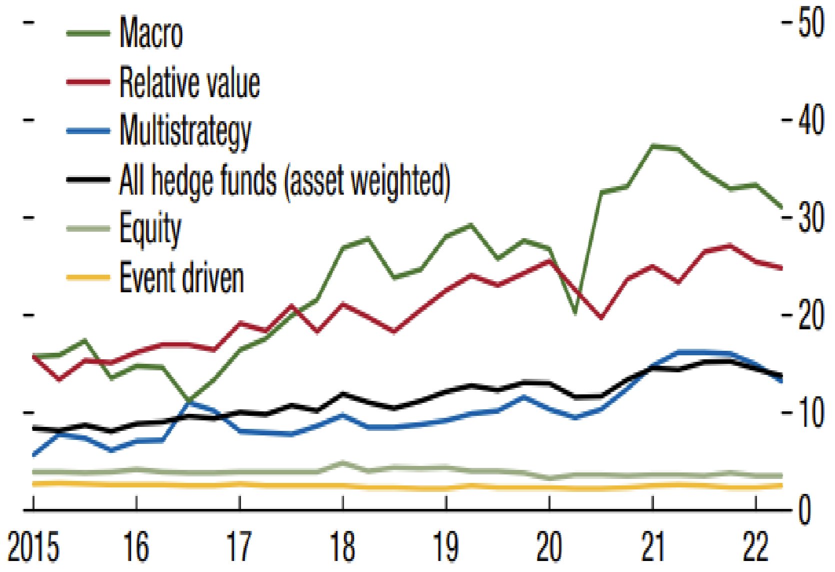
Other financials, such as banks and NBFIs, take on more leverage than others

Proxy For Derivatives-Based Leverage by Counterparty
(Notional amount to gross market value)



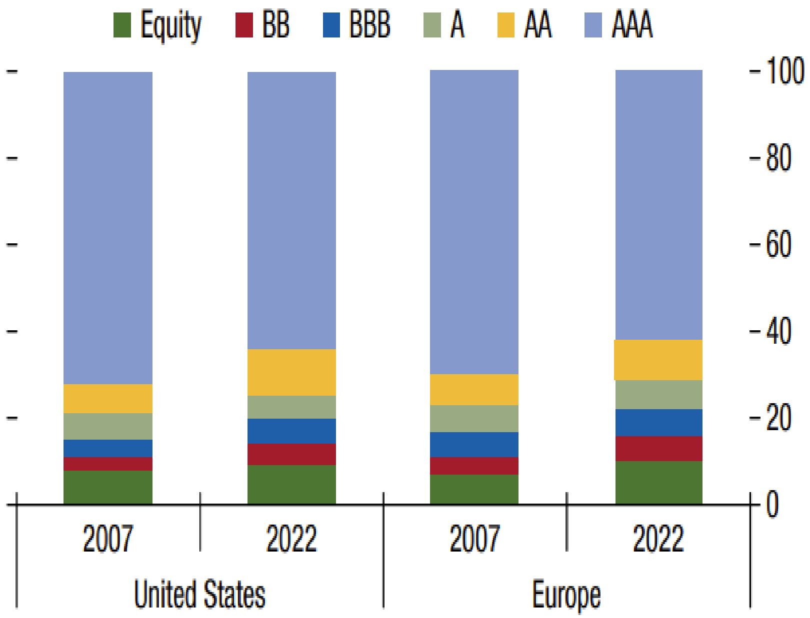
Hedge fund leverage can vary greatly by investment strategy

Hedge Fund Derivatives-Based Leverage
(Gross notional exposure to NAV)



New CLOs have a larger equity cushion than pre-GFC

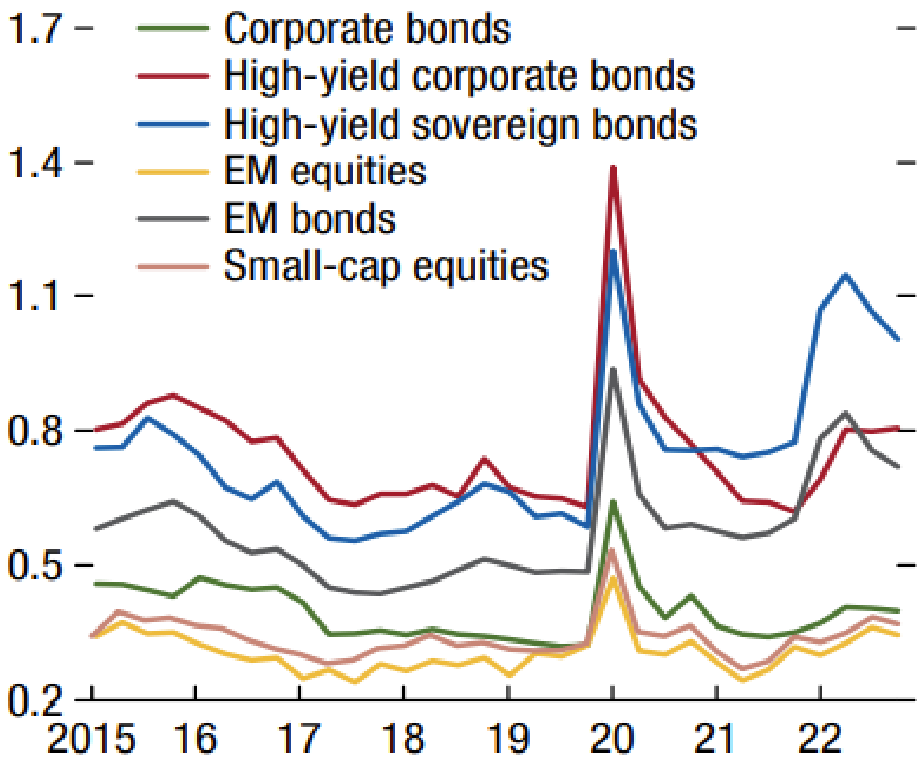
Average US and European CLO Liabilities, by Type and Credit Rating (Percent)



Liquidity

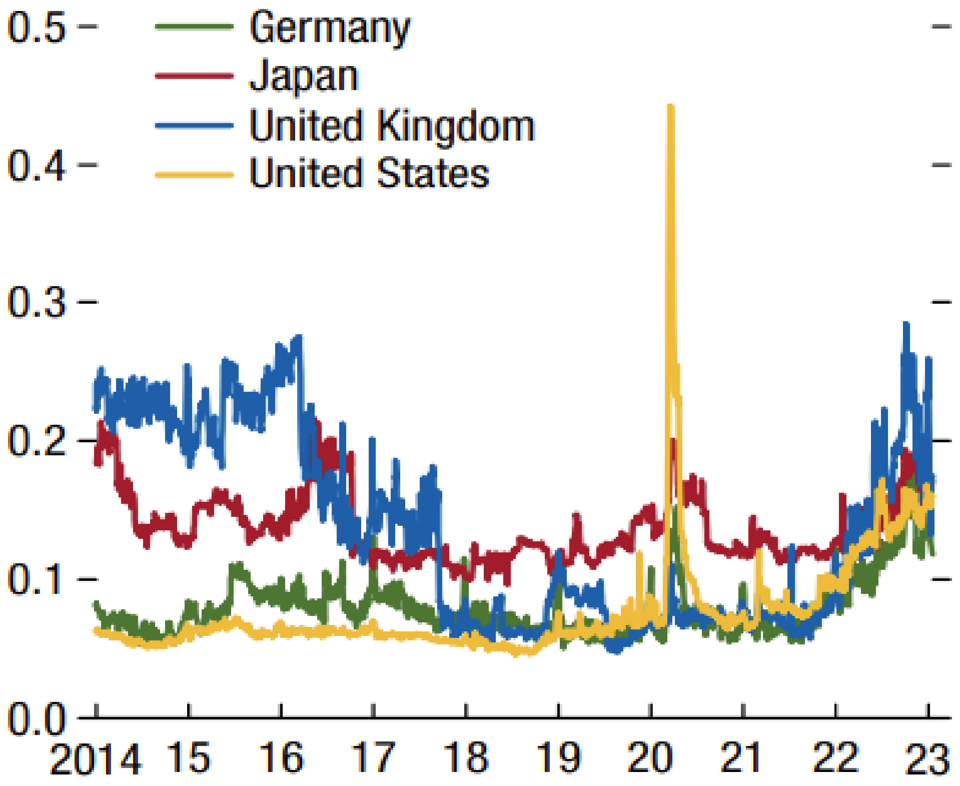
Liquidity mismatches in open-ended funds have been increasing again…

Asset-Level Vulnerability Due to Funds' Illiquidity for Different Asset Types
(Median, index value)



…against a backdrop of deteriorating market liquidity

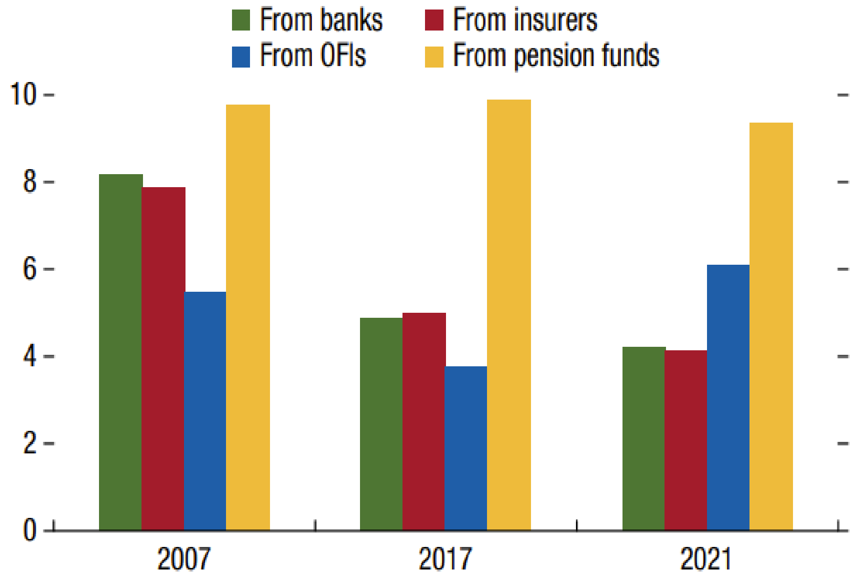
Median Bid-Ask Spreads on Government Bonds
(Percent)



Interconnectedness

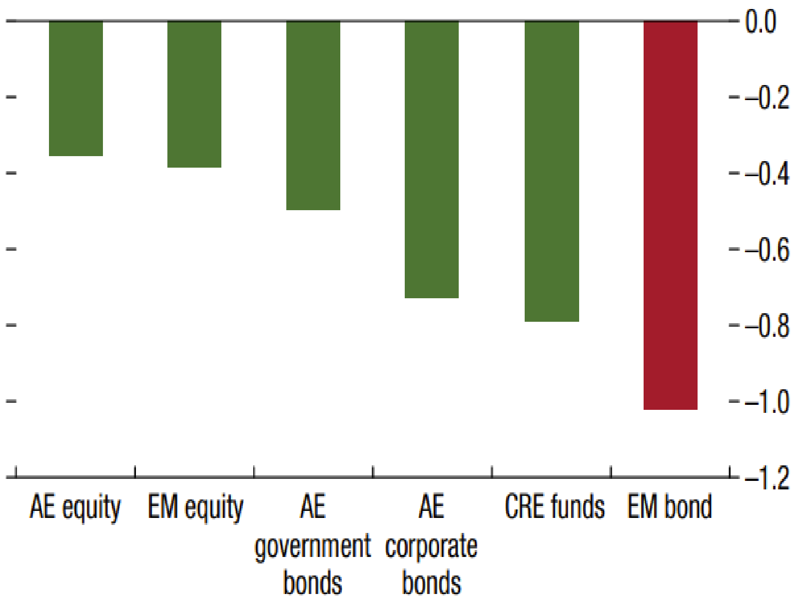
In aggregate, OFI funding has shifted away from banks

Aggregate Source of Funding for OFIs
(Percent of OFI assets)

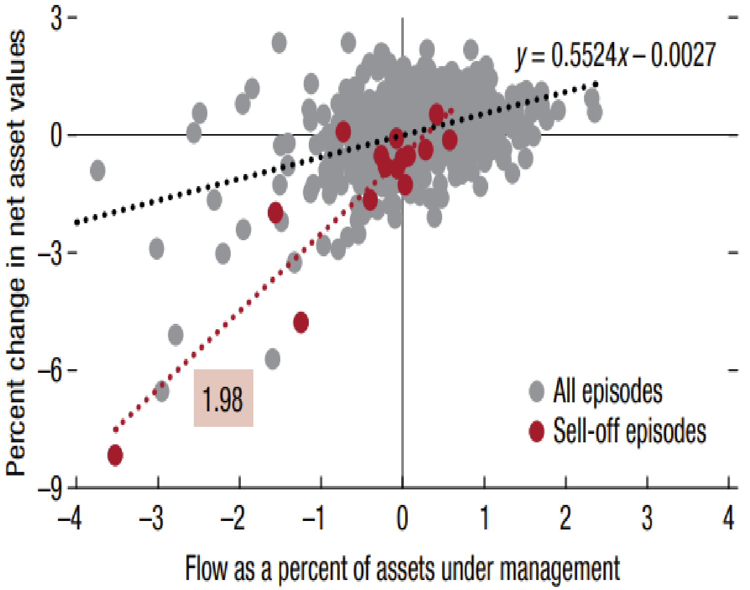


Procyclicality: Outflows from EM bond funds have been higher than other assets during stress events

Historical Estimates of Fund Outflows Following a Five Percent Fall in Monthly Fund Returns (Percent of AUM)



EM Bond Fund Outflows and Changes in Net Asset Values
(Percent)



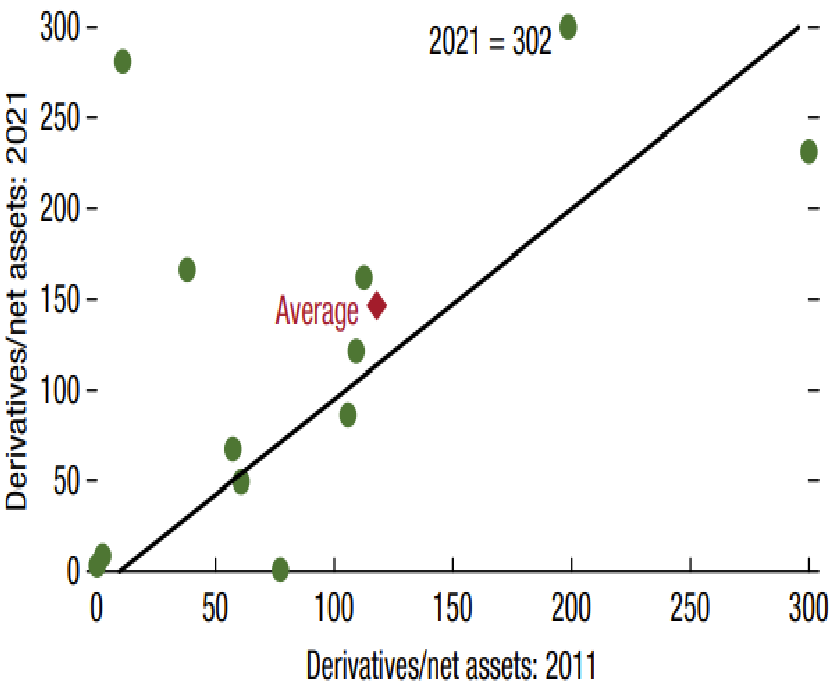
Case Studies

- **LDI Stress in the UK, Could it Happen Elsewhere?**
- **Stress in Korean Local Debt Markets**
- Commodity Trading Firms and Derivative Markets
- Private Debt and Structured Finance: Hidden Leverage and Interconnectedness

LDI Stress in the UK: Could It Happen Elsewhere?

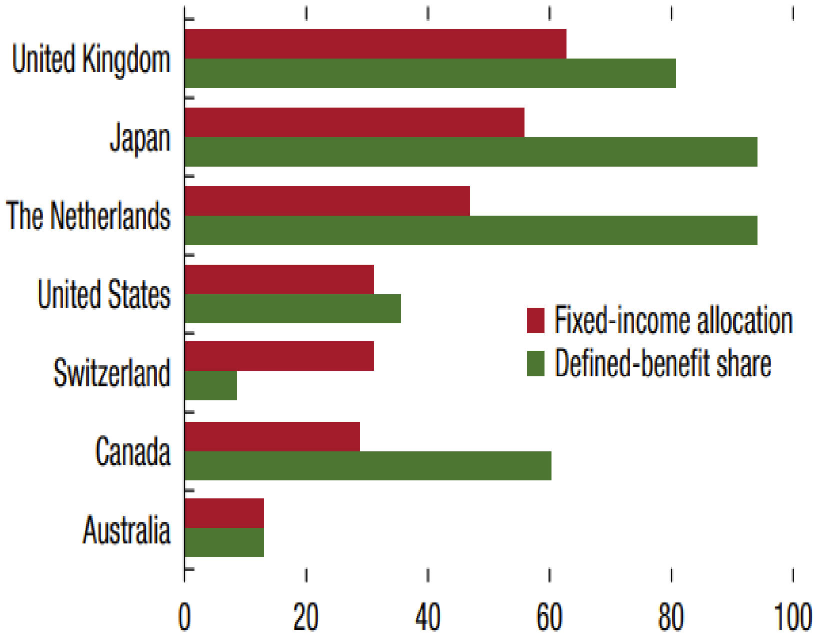
Derivatives-based leverage for selected pension funds have risen over the past decade

Derivatives-based Leverage of Selected Pension Funds
(Percent)



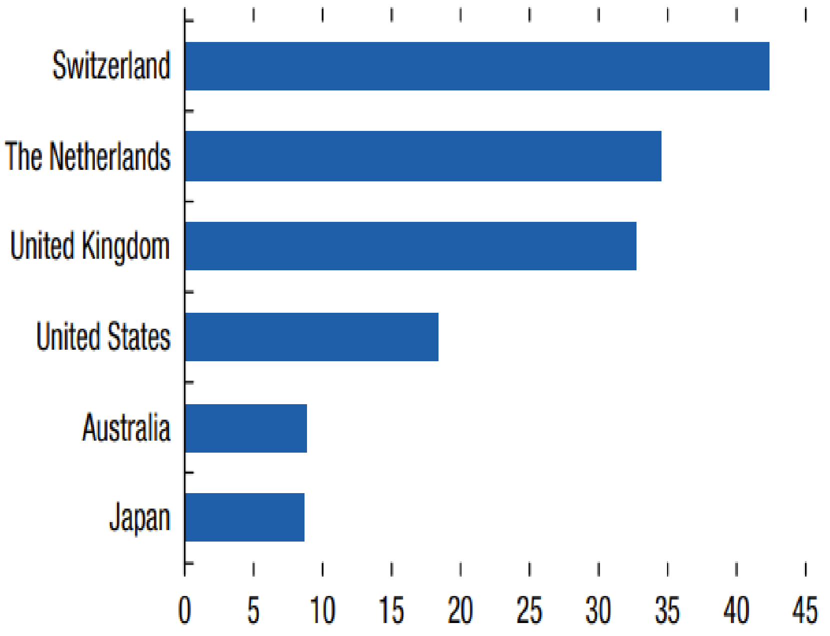
UK pension funds had less diversified portfolios and an elevated share of DB plans

Pension Fund Fixed Income Allocation and Share of Defined Benefit Plans
(Percent)



UK pension funds own a sizable share of domestic sovereign and corporate bonds

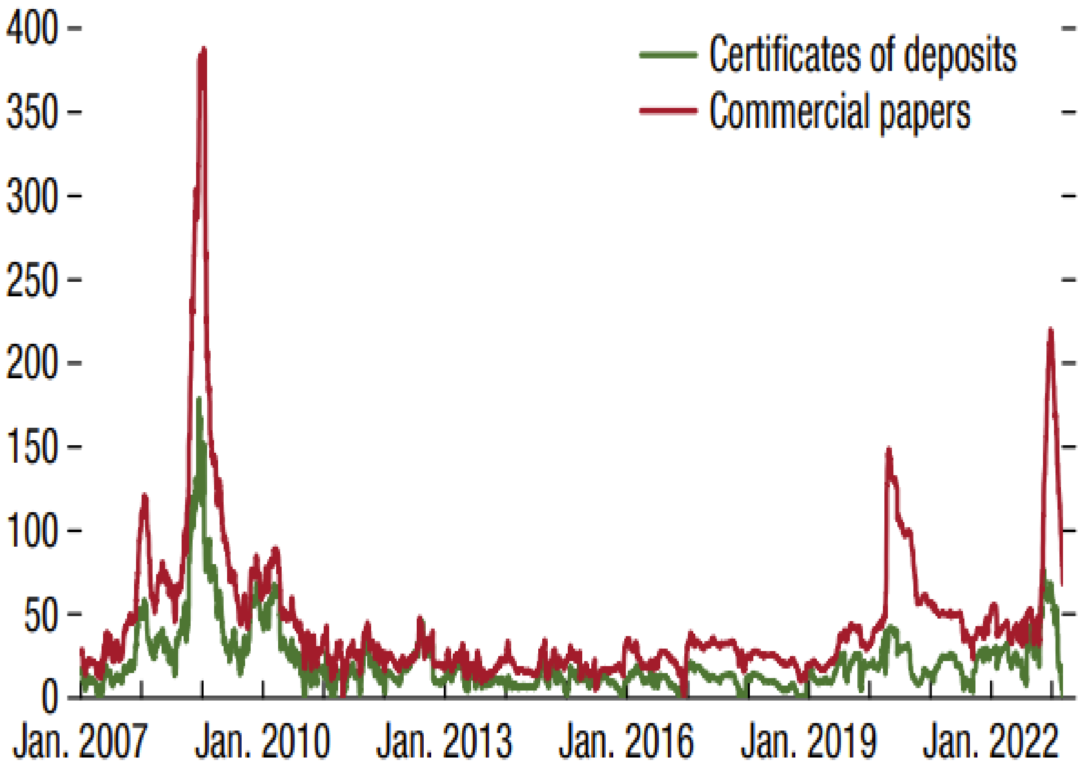
Pension Fund Share of Domestic Sovereign and Corporate Bond Market Ownership
(Percent)



Stress in Korean Local Debt Markets

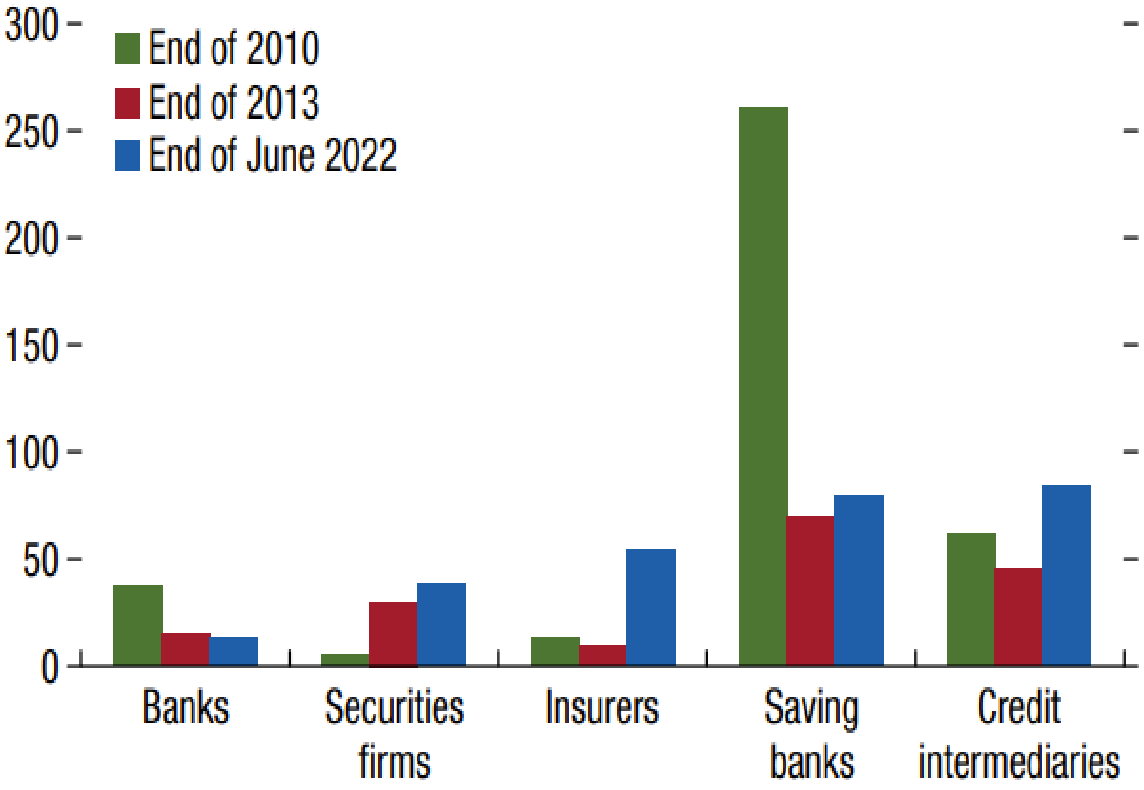
Financial stress spiked and conditions remain tight in money market instruments

Korean Three-Month Money Market Spreads
(Bps, spread to BoK's monetary stabilization bonds)



NBFIs have a sizable exposure to real estate project finance loans relative to their own capital

Financial Institution's Exposure to Real Estate Project Finance Loans
(Percent of capital)



Policy Issues: Tension Between Objectives

Decades-high inflation is generating tensions between price and financial stability objectives

- In a low inflation environment, CBs could simply ease monetary policy in response to financial stress
- With high inflation, CBs may have to continue to tighten monetary policy aggressively even if this may generate financial stability risks

NBFIs may be exposed to and amplify tightening of financial conditions

- Especially those with significant liquidity and maturity mismatches, credit exposures, and FX mismatches
- Strategies implemented for "lower-for-long" may backfire—use of financial leverage predicated on low vol
- Extent of interconnectedness (NBFIs & banks) may result in spillovers to broader financial system
- EMs may face an intensification of cross-border portfolio outflows
- Data gaps (on positions/portfolios /interconnectedness) handicap surveillance and risk management

Robust Surveillance, Regulation and Supervision of NBFIs Are Vital

- Plugging data gaps; system-wide stress testing; stress testing of NBFI sub-sectors with high systemic risks
- Improving **liquidity** mismatch assessments and reducing liquidity mismatches in the long run
- Improving **leverage** disclosures and consistency in measurement;
- NBFI-level stress testing for liquidity & leverage risks

- **Cross-border issues**
  - Strengthen cross-border regulatory cooperation; global standard setters can play an important role
  - Regulators should not lower standards in a race to the bottom to attract businesses

Using Additional CB Liquidity Tools May Improve Tradeoffs

Discretionary marketwide operations: temporary and targeted to those NBFI segments with most adverse financial stability implications. Designed to restore market functioning while containing moral hazard.
The timing of a marketwide operation is critical: data-driven metrics trigger the potential intervention, while policymakers ultimately retain the discretion as to whether to intervene.

Access to standing lending facilities could be granted to reduce spillovers to the financial system, although the bar for such access should be very high to avoid moral hazard. No access without appropriate Reg & Sup.

LoLR access: if a systemic NBFI comes under stress. Lending to a systemic NBFI should be at the discretion of the CB, at a penal rate, fully collateralized, and accompanied by more oversight. A clear timeline should be established for restoring the liquidity of the institution.