Implications of the Growing Role of NBFIs

G20 GLOBAL FINANCIAL STABILITY CONFERENCE

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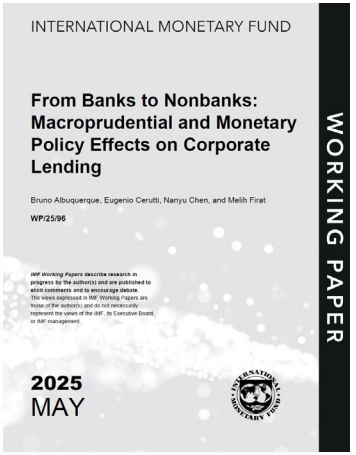
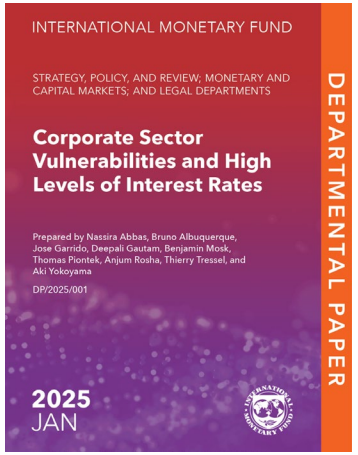
Expanding role of NBFIs in global financial markets after the GFC

- Regulatory policy measures taken after the GFC have increased the resilience of the financial system to shocks, reducing systemic risk.
- After the GFC, we have witnessed an important expansion of the NBFI sector that can deliver benefits to financial markets:
  - NBFIs provide diversified financing and faster, alternative intermediation options, especially important when banks' lending capacity is constrained.
  - NBFIs also enhance resource allocation, providing loans to risky but productive firms, and thus bolster economic activity.
- But the increasing presence of NBFIs—often beyond the reach of prudential authorities—comes with important **risks and challenges**.
- This talk focuses on some of these risks, and what policymakers can do to mitigate them. I draw on recent IMF work: **Albuquerque et al. (2025a,b), Abbas et al. (2025), and IMF GFSR (2024).**





Risks and challenges from NBFIs: what we know

- Nonbank credit is substantially more procyclical, potentially amplifying financial stability risks during severe downturns (Aldasoro et al. 2025, Fleckenstein et al. 2025).
- However, it is bank-driven credit booms—not those led by nonbanks—that appear more closely associated with a higher likelihood of downturns (Boyarchenko and Elias 2024).
- NBFIs on average rely more on unstable funding sources than banks and typically lack access to the central banks' emergency liquidity facilities during crises.
- Rising bank-NBFI cross-border linkages may act as amplifiers of systemic vulnerabilities (Acharya et al. 2024).
- The exponential growth of private credit markets, combined with limited regulation, hinder effective risk monitoring. Bank-nonbank interconnectedness risks are arguably more prevalent in this market (GFSR 2024).

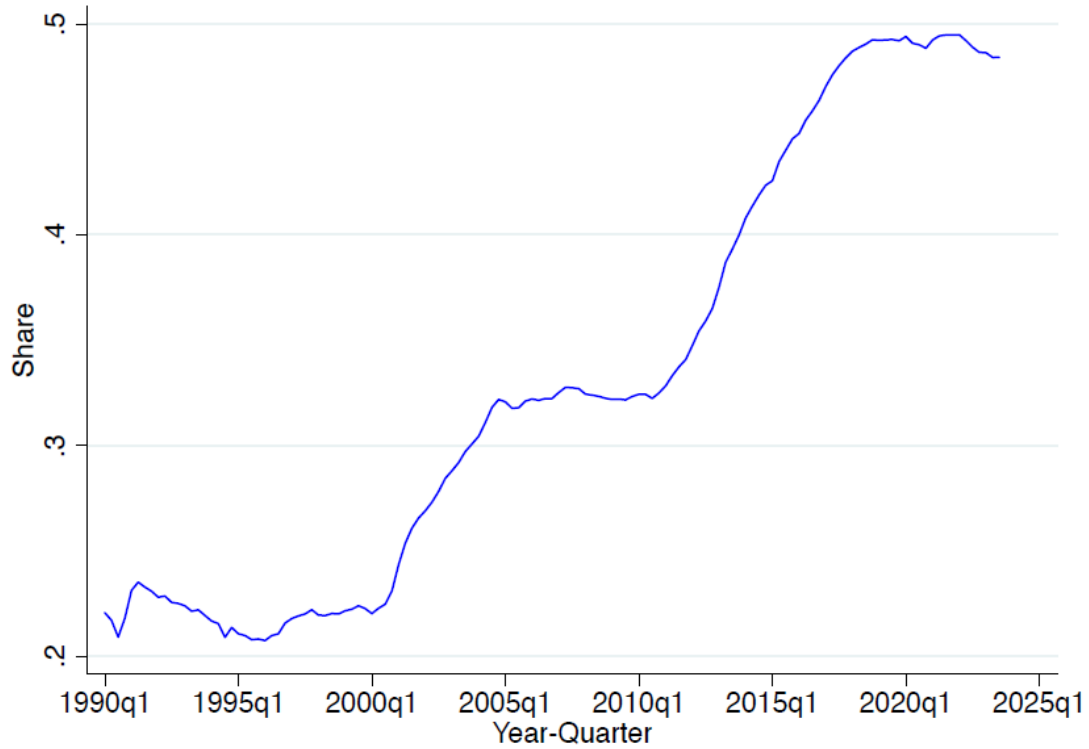
Risks and challenges from the NBFI expansion: new evidence and policy advice

- Increased credit intermediation by NBFIs may dampen the transmission of both monetary policy (MP) and macroprudential policies (MaPP) – (Albuquerque et al. 2025a).
- Banks' exposure to NBFIs has increased, possibly as a response to tighter banking regulation (Albuquerque et al. 2025a)
- Growing role of bank-affiliated nonbank subsidiaries in credit markets seems to result from the post-GFC tightening in macroprudential policies (Albuquerque et al. 2025b).
- Large data gaps prevent a full identification of the underlying vulnerabilities and risks (Abbas et al. 2025, Adrian 2025).
- These trends underscore the need to close data gaps, limit regulatory arbitrage, and strengthen supervision across sectors and borders (Abbas et al. 2025, Adrian 2025, Albuquerque et al. 2025a,b).

1. Expansion of NBFIs and the transmission of MP and MaPP

Nonbank corporate credit intermediation has been rising since the GFC

Nonbank share in the global corporate syndicated loan market

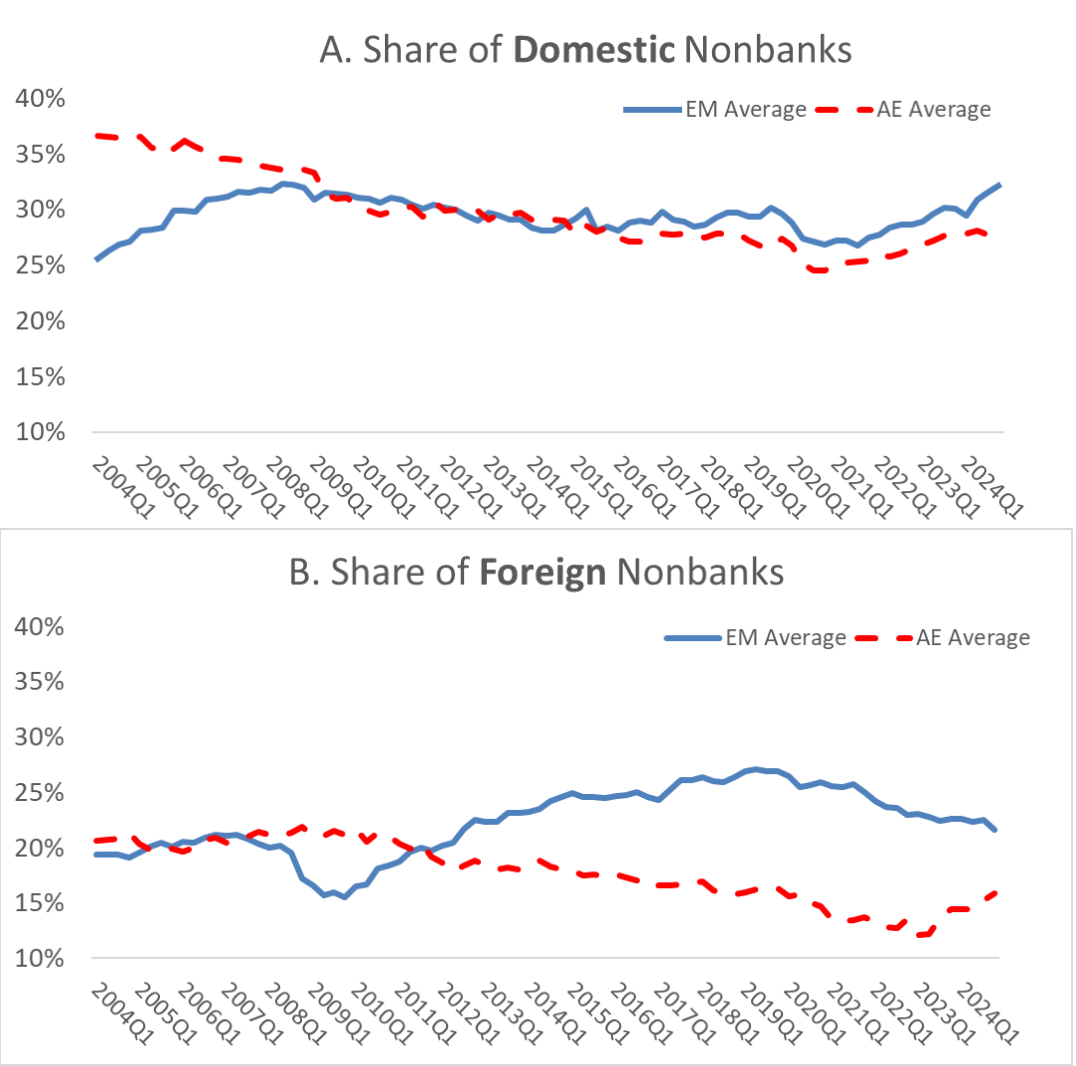


Notes: Nonbank share is the loan amount outstanding intermediated by nonbanks relative to the total loan amount. Nonbanks include investment banks, broker-dealers, finance companies, insurance companies, pension funds, private equity firms, venture capital firms, hedge funds, and other non-depository taking financial intermediaries.

- Sample of 22 lender countries (mostly AEs) captures most of the global syndicated loan market (~80%).
- The upward trend in nonbank share is more pronounced in AEs, particularly in the U.S.
- But the broader shift from bank to nonbank credit intermediation has **global implications for borrowers, including those in EMs.**

Nonbanks became important holders of EM sovereign debt

Holders of Sovereign Debt



Source: Arslanalp and Tsuda (2014) database and IMF staff calculations.

- **Domestic nonbank share**
  - EMs: Large and stable—around one-third of holdings; dip in late-2010s, back near highs by 2024.
  - AEs: Secular decline from early-2000s; only a modest recent rebound.
- **Foreign nonbank share**
  - EMs: Jumped post-GFC, eased since 2019, still above pre-GFC levels.
  - AEs: Gradual, persistent decline since GFC; slight uptick from a low base recently.
- **Takeaways**
  - EMs: Higher exposure to global risk cycles.
  - AEs: Thinner nonbank presence in sovereign markets.

Potential risks from the rise of NBFIs

Greater vulnerabilities of nonbanks

- Liquidity mismatches.
- More fragile funding models with higher frictions.
- Nonbank lending is more procyclical, worsening downturns.

Weaker regulatory oversight

- Less stringent regulation and supervision compared to banks.
- No access to central bank liquidity facilities, critical during periods of large financial shocks.

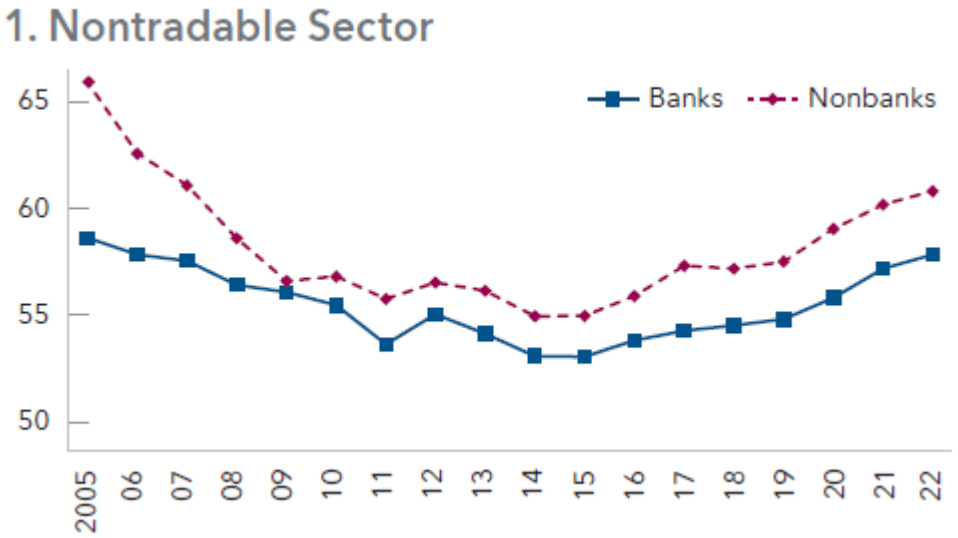
Lending to more vulnerable borrowers

- Nonbanks typically lend to smaller, riskier borrowers, who are more vulnerable to shocks.

Considerable data gaps

- Prevents full identification of risks.

Exposure of banks and nonbanks to nontradable firms

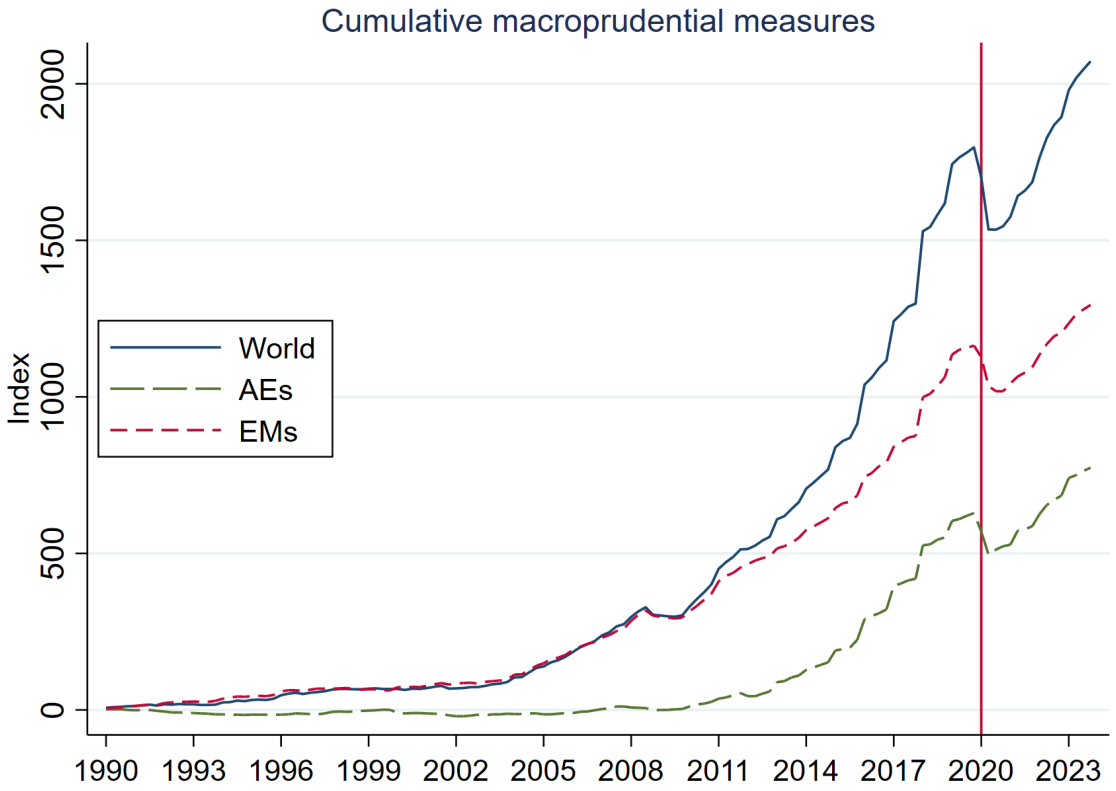


Sources: Compustat; Dealogic; and authors' calculations.

Notes: Percentage share of banks' and nonbanks' total lending portfolio allocated to NT firms.

Countries have actively been using more macroprudential measures (MaPP)

Net cumulative sum of macroprudential measures



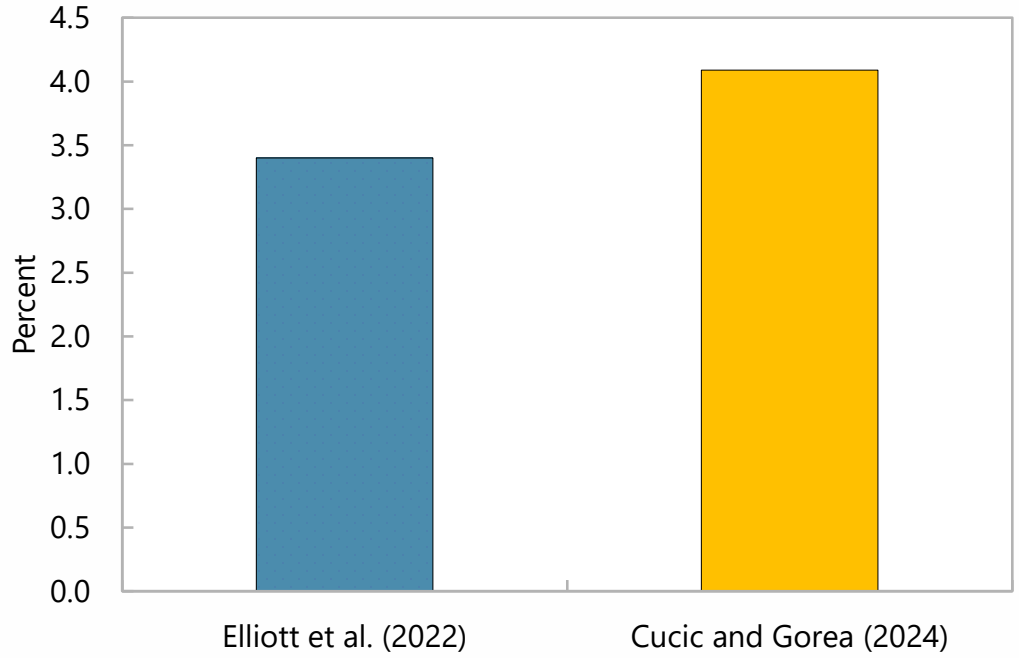
Notes: Alam et al. (2025) iMaPP database and authors' calculations. The red vertical line marks the start of the Covid-19 pandemic in 2020Q1.

- MaPP is designed to curb excess credit growth and strengthen financial resilience.
- EMs are particularly more active in the use of MaPP to manage financial stability risks.
- These tools may have, however, contributed to the expansion of nonbanks: often tighten banks' balance sheet constraints, reducing their lending capacity and creating space for nonbanks to fill the funding shortfall.

Evidence from the U.S. and Denmark that tighter MP stimulates nonbank lending

- Nonbanks in the U.S. and Denmark partially mitigate the transmission of MP to the real economy (Elliott et al., 2022, Cucic and Gorea, 2024).
- **Mechanism**: A widening spread between the policy rate and deposit rates prompts deposit outflows from the banking sector, constraining banks' lending capacity (Drechsler et al., 2017).
- **Open question:** Is this effect specific to US and Danish markets, which have a large presence of nonbanks? Albuquerque et al. (2025a) test this for a large sample of country lenders.

Impact of contractionary MP shocks on nonbank lending relative to bank lending in the U.S. and Denmark



Notes: The dependent variable is the logarithm of new syndicated loans originated by US lenders in Elliott et al. (2022), and log of total corporate debt in Denmark in Cucic and Gorea (2024). The bars are not comparable across the two papers: Elliott et al. (2022) measure the impact of a MP shock that raises interest rates by 25 bps, while Cucic and Gorea (2024) measure the effect of a one-standard deviation MP shock.

Albuquerque et al. (2025a), "From Banks to Nonbanks: Macro Prudential and Monetary Policy Effects on Corporate Lending"

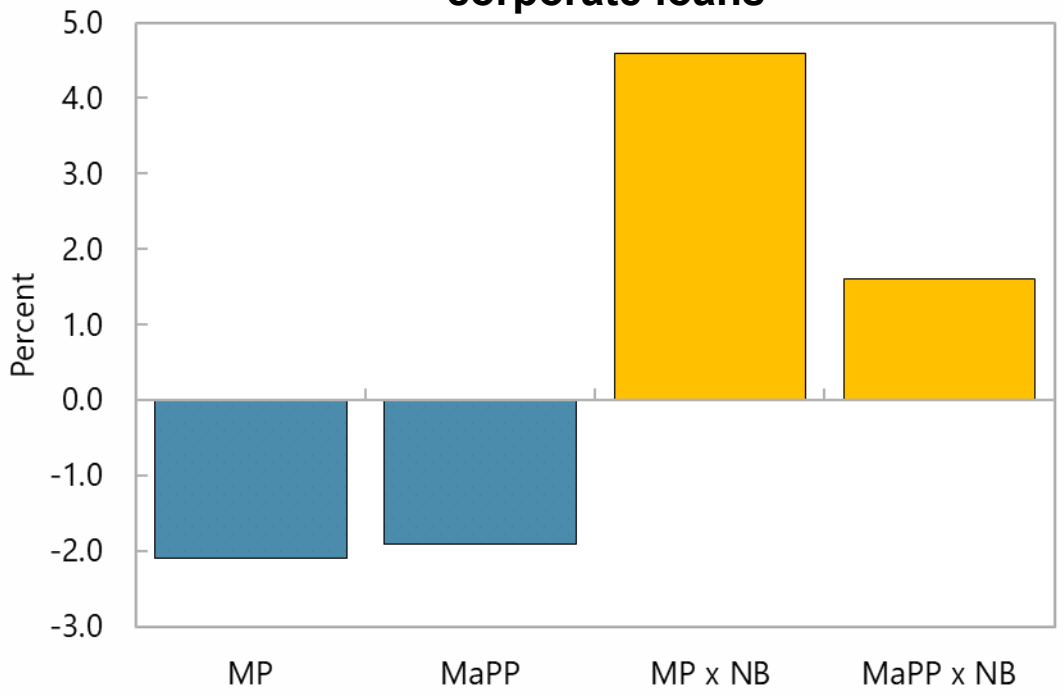
- Albuquerque et al. (2025a) study the implication of nonbanks' rising role in corporate credit intermediation for the transmission of MaPP and MP.
- **Sample.** Syndicated loan data for 22 lender countries (20 AEs and 2 EMDEs), and 153 borrower countries (38 AEs and 115 EMDEs) over 2000–2019.
- **MP shocks**. Country-specific HF identified shocks (Choi et al., 2024).
- **MaPP shocks**. Use IMF iMaPP database on macroprudential measures and purge them from the state of the economy to deal with endogenous reaction of MaPP.

Lender-borrower-quarter aggregation:

$$\begin{aligned} Log(Loans)_{l,i,t} &= \gamma_l + \mu_{i,t} + \beta_1 MP_{l,t-1} + \beta_2 MaPP_{l,t-1} \\ &+ \beta_3 MP_{l,t-1} \times Nonbank_l + \beta_4 MaPP_{l,t-1} \times Nonbank_l + \epsilon_{l,i,t} \end{aligned}$$

NBFIs mitigate the effectiveness of both MP and MaPP shocks to corporate credit markets

Impact of contractionary MP and MaPP shocks on syndicated corporate loans

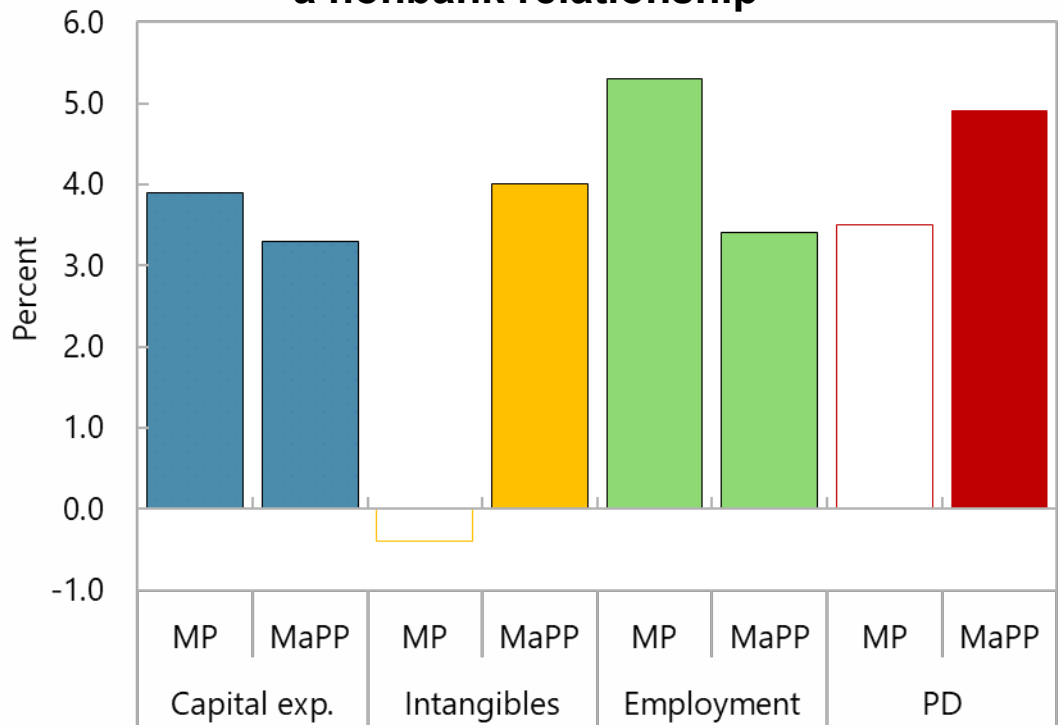


Notes: The dependent variable is the logarithm of new syndicated loans. The blue bars indicate the effects of a one-standard deviation contractionary shock of monetary and macroprudential policy on loans provided by banks, while the orange bars refer to the differential effects of lending by nonbanks (NB) relative to banks. The regression specification controls for lender fixed effects, and for firm x time fixed effects. Standard errors clustered by firm. All effects are statistically significant at the 1% level.

- Nonbanks mitigate the decline in bank credit supply after both shocks. Relative to banks:
  - +4.6% after MP shocks
  - +1.6% after MaPP shocks
- Stronger effect for MP, but wedge with MaPP reduced when both shocks are calibrated to deliver an equal impact on bank stock prices.
- Nonbanks increase loan volumes **and** decrease spreads relative to banks (*although continue to charge higher prices*). Consistent with credit supply effects driving the results, rather than shifts in borrower demand.

Firms reliant on nonbanks invest and hire more relative to other firms following contractionary policy shocks

Differential effects of MP and MaPP shocks on firms with a nonbank relationship



Notes: Data aggregated at the firm-quarter level. The dependent variables are the logarithm of real tangible capital expenditures, logarithm of real intangible investment, logarithm of employment, and the probability of default over the next 12 months. Each bar indicates the differential effects of a one-standard deviation contractionary shock of MP and MaPP for firms with a nonbank relationship over the past five years. The regression controls for firm fixed effects and country-industry-time fixed effects. Standard errors clustered by firm. Hollow bars refer to statistically insignificant estimates at the 10% level.

- **Dual implication of nonbank relationships for financial stability:**
  - NFCs with preexisting relationships with nonbanks tend to invest and hire more after the shocks.
  - But nonbank relationships do not seem to reduce borrowers' riskiness: PDs increase for these firms, with stronger evidence during MaPP shocks.

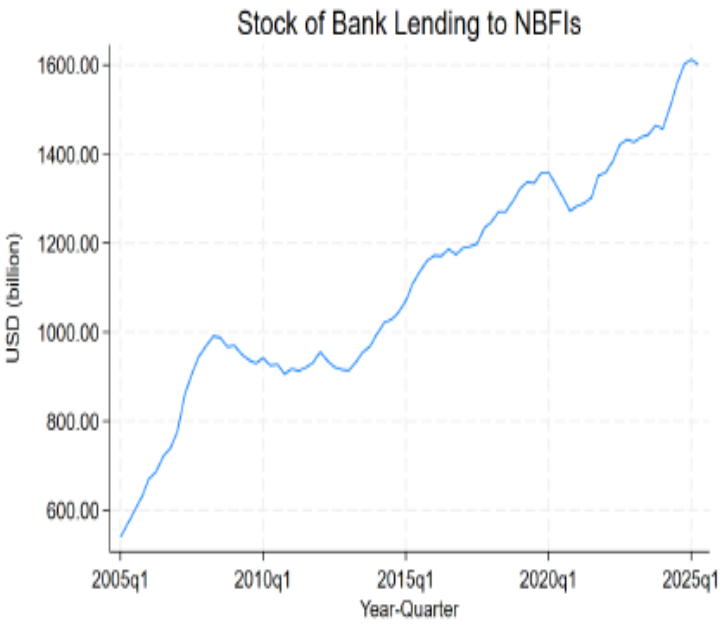
Summary of findings and policy implications

- IMF research highlights credit migration from banks to nonbanks after the tightening of MP or MaPP.
- Nonbanks provide an alternative funding source for firms, supporting corporate investment and economic activity when bank financing becomes constrained.
- But important side effects of tighter MP and MaPP warrant caution: credit shifts to a sector that remains broadly outside of the regulatory perimeter, and where data gaps prevent the full identification of risks.
- Nonbanks typically exhibit more volatile funding sources than banks, limited regulatory oversight, high leverage, and lack of access to CB liquidity facilities: financial system vulnerabilities—particularly during downturns—may be amplified.

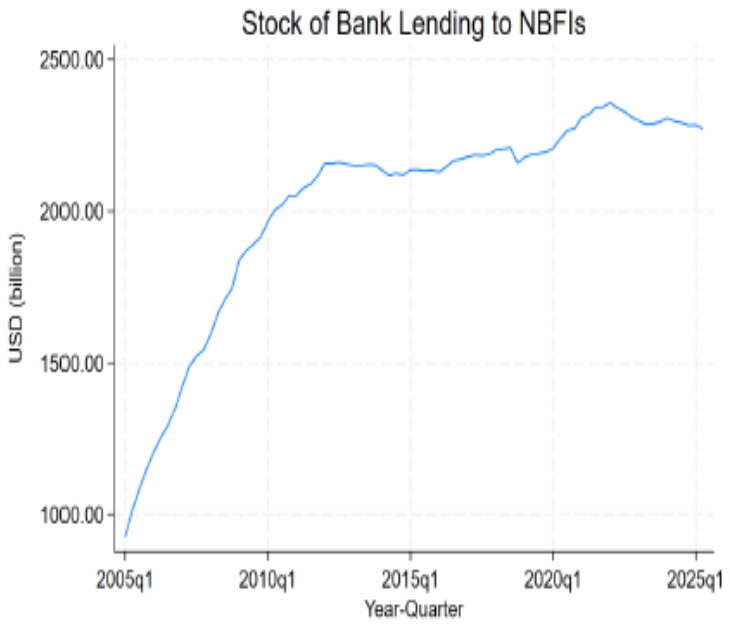
2. Banks' exposure to NBFIs

Banks have become more exposed to NBFIs: direct exposure

(a) Loan Market



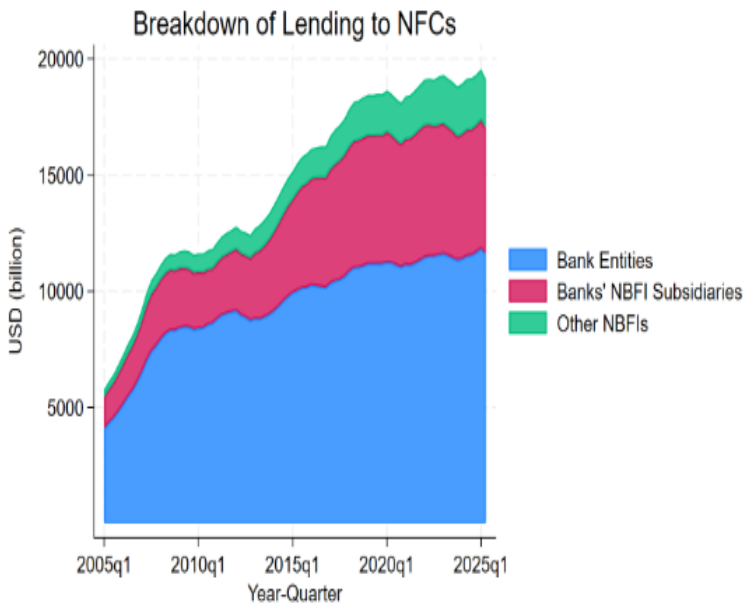
(b) Bond Market



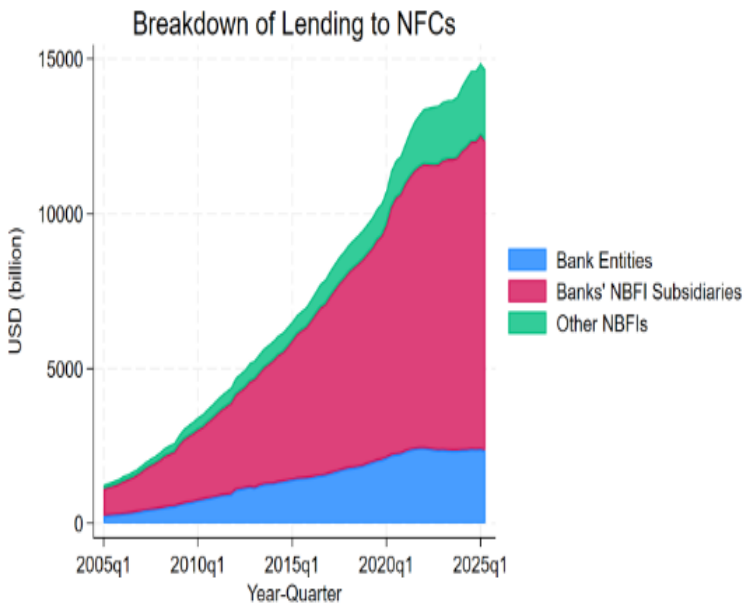
- Banks' direct exposure to NBFIs has increased in the syndicated loan and bond markets, contributing to NBFI expansion.
- **Possibly related to tighter macroprudential policies**: banks seem to switch lending to NBFIs and away from NFCs after shocks that affect banks' capital positions (Albuquerque et al. 2025a, Krainer et al. 2025).
- Albuquerque et al. (2025a,b) estimate a 1% to 2% increase in bank lending to NBFIs relative to NFCs after a 1-std MaPP tightening shock.
- NBFI's lower risk weights relative to NFCs may explain banks' lending to NBFIs after tighter regulation.

Banks have become more exposed to NBFIs: indirect exposure

(a) Loan Market



(b) Bond Market



- Banks have increased their presence in credit markets through their NBFI affiliates. As a share of total bank lending to NFCs, NBFI subsidiaries account for:
- **Syndicated**: 32% today (up from 22% during the GFC). **Bonds**: 81% today (up from 75% during the GFC).
- Banks' behavior may be related to regulatory arbitrage: trading activities shift to the less-regulated nonbank subsidiaries (Albuquerque et al. 2025b).
- Regulatory arbitrage brings about risks to financial stability, as we have seen in the past (e.g., GFC).

Summary of findings and implications

- IMF research shows that banks have increased their direct and indirect exposure to NBFIs in the syndicated loan and bond markets.
- Banks seem to engage in regulatory arbitrage when MaPP tightens, shifting lending to nonbank borrowers, who tend to have on average lower risk weights relative to NFCs.
- Increased lending from banks to NBFIs, likely related to tighter bank regulation, has contributed to the growth of the nonbank sector.
- Bank-nonbank interconnectedness amplified by increasing lending of bank lending through their NBFI subsidiaries: **banks engage in regulatory arbitrage when regulation tightens**.
- Tighter macroprudential policies on banks **may not reduce banks' risks**, and overall systemic risks, as banks become more exposed to nonbanks, directly and indirectly.

3. Data gaps and policy advice

Policy and supervisory priorities to address NBFI risks

Close data gaps on NBFIs

- Strengthen and standardize NBFI reporting, which is often voluntary and inconsistent.
- Improve granularity and comparability to enhance risk detection by supervisors.

Limit regulatory arbitrage

- Ensure bank-like activities by NBFIs fall within the regulatory perimeter.
- Prevent banks from evading rules by shifting activities to nonbank affiliates—a risk seen pre-2008 and re-emerging today.

Expand the regulatory perimeter to NBFIs

- Consider imposing leverage limits, and capital and liquidity requirements
- Stress-testing the NBFI sector would also help curb credit leakages to nonbanks, improve the MP transmission, and bolster the resilience of the financial system

Balance entity-based and activity-based regulation

- Maintain flexibility in regulatory scope to capture emerging intermediaries, including fintech firms.
- Adapt oversight to evolving business models that mimic traditional banking.

Enhance cross-sector and cross-border supervisory cooperation

- Foster coordination among regulators to address global and interconnected NBFI activities.
- Promote timely data sharing and joint oversight frameworks for a holistic view of systemic risk.

IMF Support to the Policy Agenda

- **Role of the IMF:**
  - *Identify and assess risks*: The IMF monitors the global financial system and member countries' economies to identify potential risks and vulnerabilities posed by the growing NBFI sector.
  - *Highlighting regulatory and data gaps*: timely data disclosures are key for effective NBFI surveillance
  - *Providing policy advice*: to mitigate identified risks and ensure financial stability
- **Ongoing and future research:**
  - Implications of increasing lending by bank-owned NBFI subsidiaries for overall systemic risk.
  - Nonbank lending dynamics during bad times in the bond market, where they are a major player.
  - Implications of rising private credit for overall financial stability.

Conclusion

- NBFIs play a growing role in credit intermediation, especially post-GFC, and amid tighter bank regulations.
- NBFIs help sustain credit supply during MP and MaPP tightening—but raise new risks:
  - Procyclical lending, volatile funding, and weaker policy transmission
  - Rising bank–nonbank interconnectedness and regulatory arbitrage
  - Limited oversight and significant data gaps
- **Policy priorities:**
  - Expand regulatory perimeter and close data gaps
  - Strengthen cross-border supervision and limit regulatory arbitrage
  - Balance entity- and activity-based regulation

- EMs particularly vulnerable to changes in global risk sentiment, as NBFIs play an important role in capital flows dynamics, including in sovereign debt markets

- A resilient financial system needs better oversight of NBFIs without stifling their benefits.

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