

MONETARY AUTHORITY OF SINGAPORE

FINANCIAL STABILITY REVIEW



MACROPRUDENTIAL SURVEILLANCE DEPARTMENT
ECONOMIC POLICY GROUP

November 2023



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Global Macrofinancial Environment

The cumulative effects of restrictive monetary policy pose further challenges to global financial stability



Debt servicing ability of corporates, households and sovereigns will be tested

- Highly-leveraged corporates and households face financial strains
- Fiscal sustainability concerns deepen in highly-indebted countries



Financial intermediaries could face higher credit and liquidity risks

- Higher interest rates and slowing growth weaken banks' credit quality
- NBFIs could face liquidity stresses amid heightened market volatility



Sharp asset repricing could trigger market dysfunction

- Pullback in intermediation leads to destabilising illiquidity dynamics
- Leverage, which has grown, propagates and amplifies shocks



Emerging market economies could be susceptible to capital flight

- Narrowing or reversal of AE-EME rate differentials reduce appeal of EM bonds
- EMEs' external funding needs increase with weaker external balances

Macrofinancial, geopolitical and technology & cyber risks are top-of-mind in the MAS Systemic Risk Survey of CROs

Fls' perception of risks to Singapore's financial system

Risk categories	% citations		Impact ranking	
	April 2023	October 2023 (Δ)	April 2023	October 2023 (Δ)
Macrofinancial risk	61	70 (+9)	1	1 (-)
Geopolitical risk	57	55 (-2)	2	2 (-)
Technology & cyber risk	57	64 (+7)	3	3 (-)
ML & TF risk	2	23 (+21)	7	4 (↑3)
AI developments	4	14 (+10)	6	5 (↓1)
Pandemic risk	13	7 (-6)	4	6 (↓2)

Source: MAS estimates

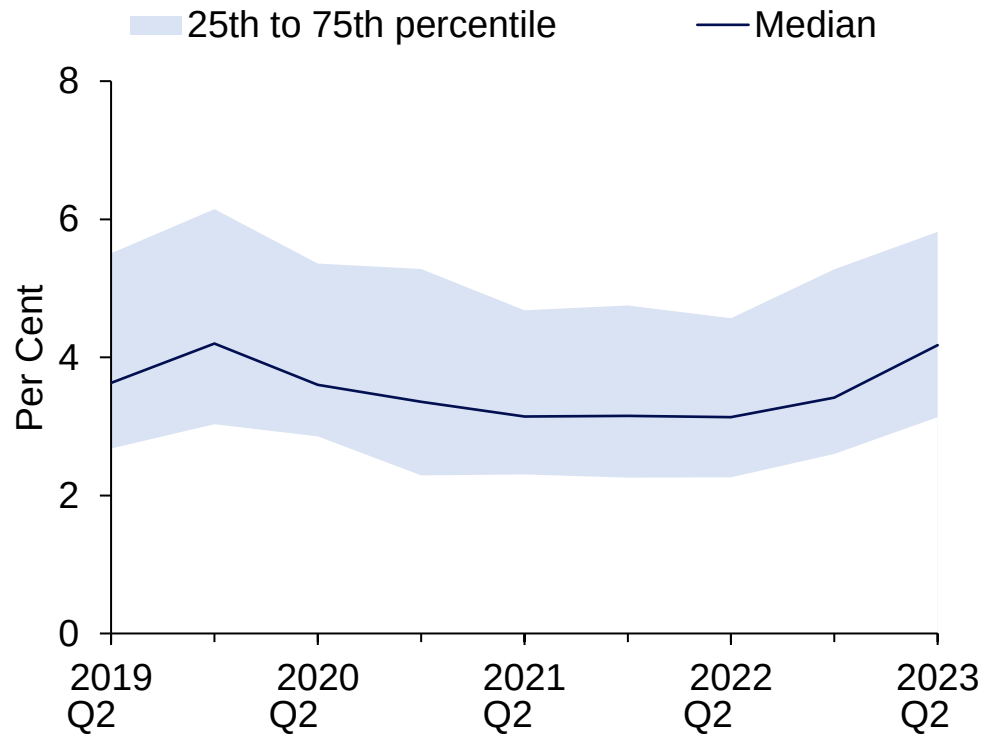
Note: (i) A risk category is listed in this table if it is cited by at least 10% of respondents in the October 2023 survey. (ii) Impact ranking is determined by the sum of respondents' ranking of a risk's impact. (iii) The survey closed on 6 October 2023. As such, the results do not reflect respondents' assessment of the geopolitical risks linked to the Israel-Hamas conflict that broke out on 7 October 2023.



Singapore Corporate Sector

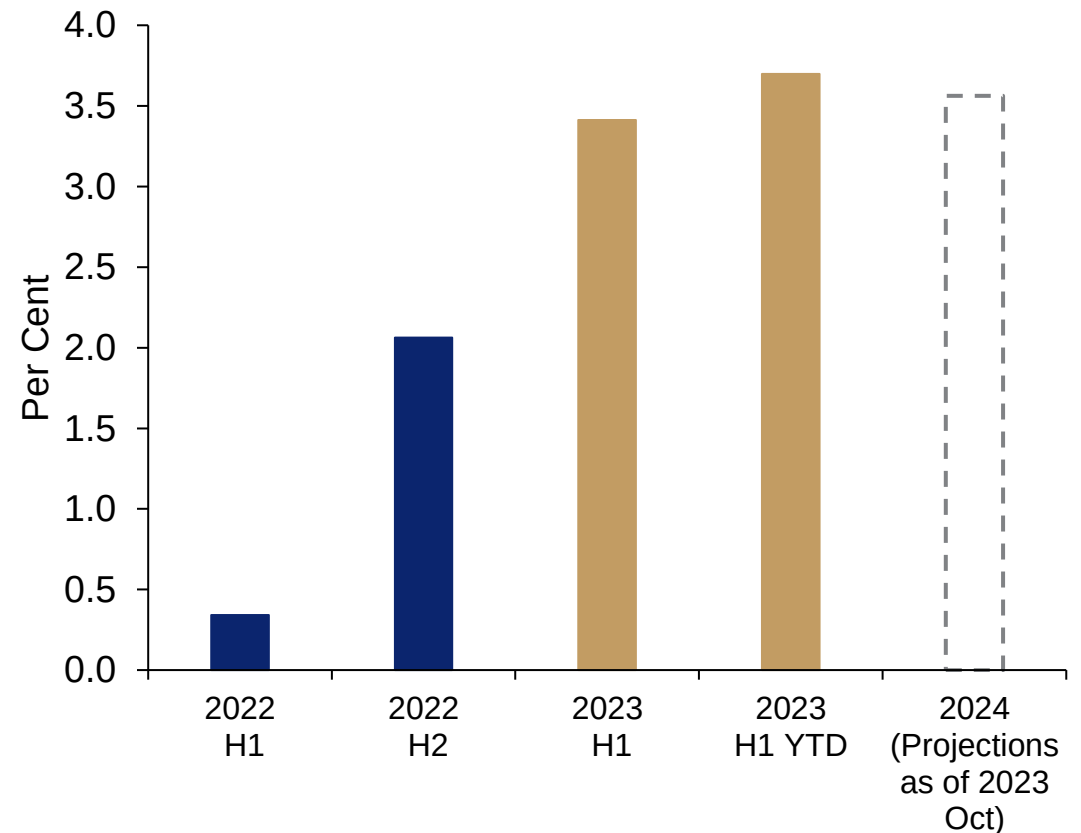
Firms' borrowing costs have risen at a slower pace than market interest rates

Average Borrowing Cost of SGX-listed Firms



Source: Refinitiv Eikon, MAS estimates

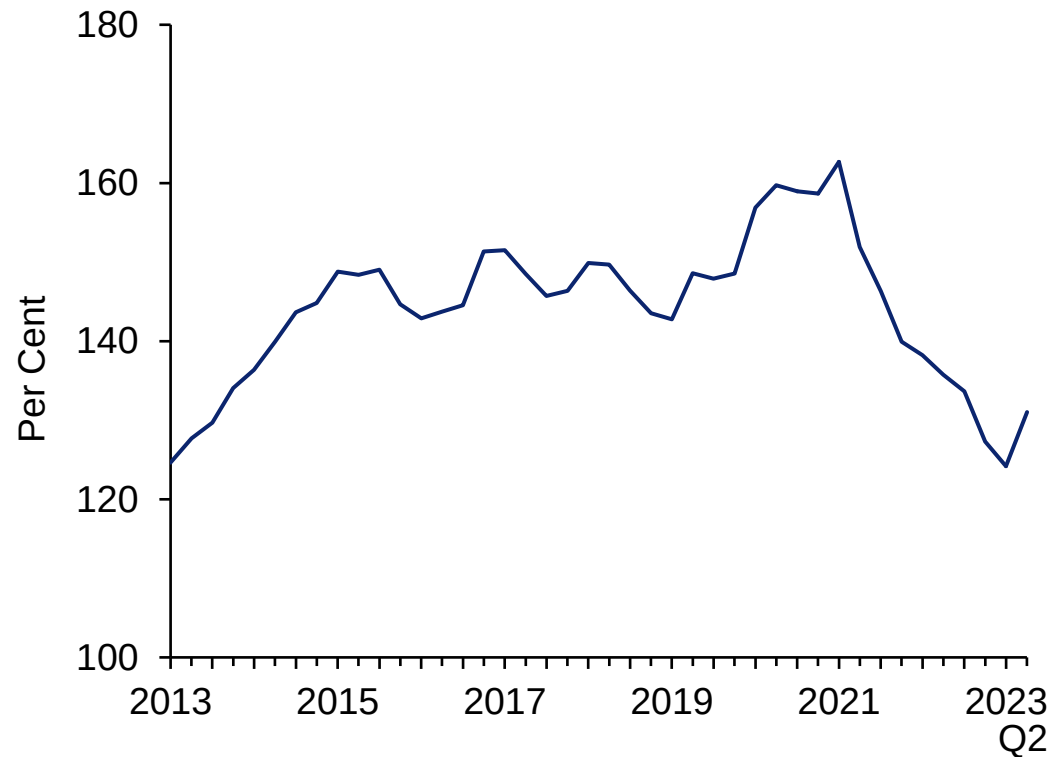
Average 3-month Compounded SORA



Source: Bloomberg, MAS estimates

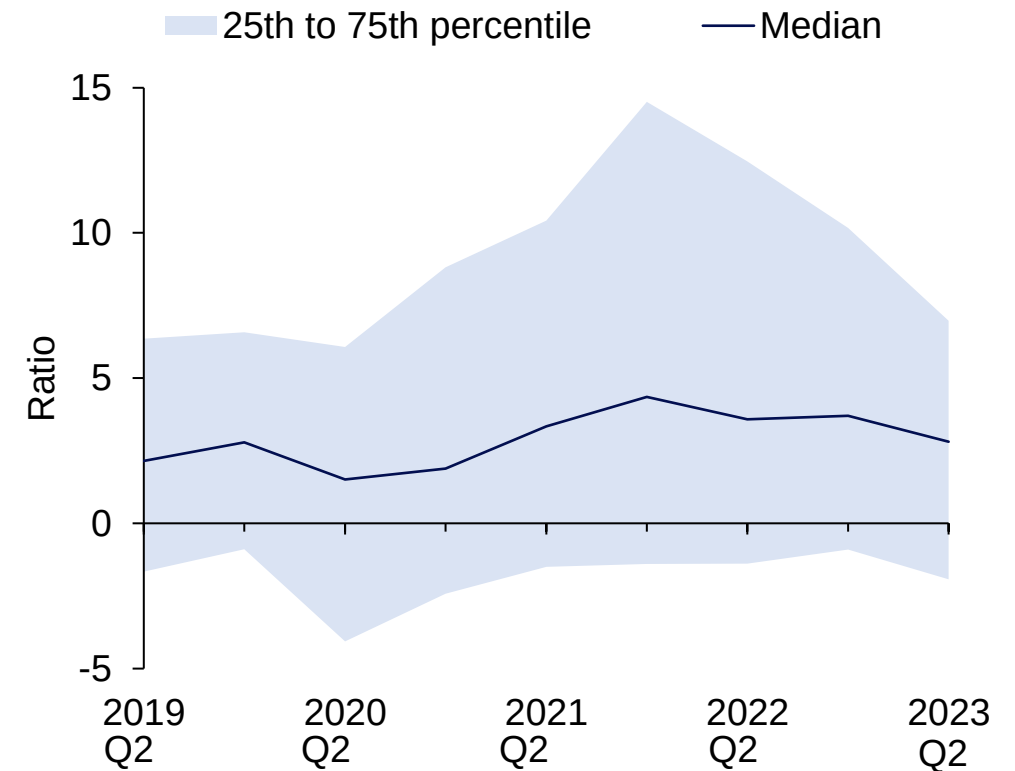
Reduction in firm's debt alongside interest rate hedging have cushioned rising interest costs

Singapore's Corporate Debt, % of GDP



Source: BIS, Dealogic, MAS estimates

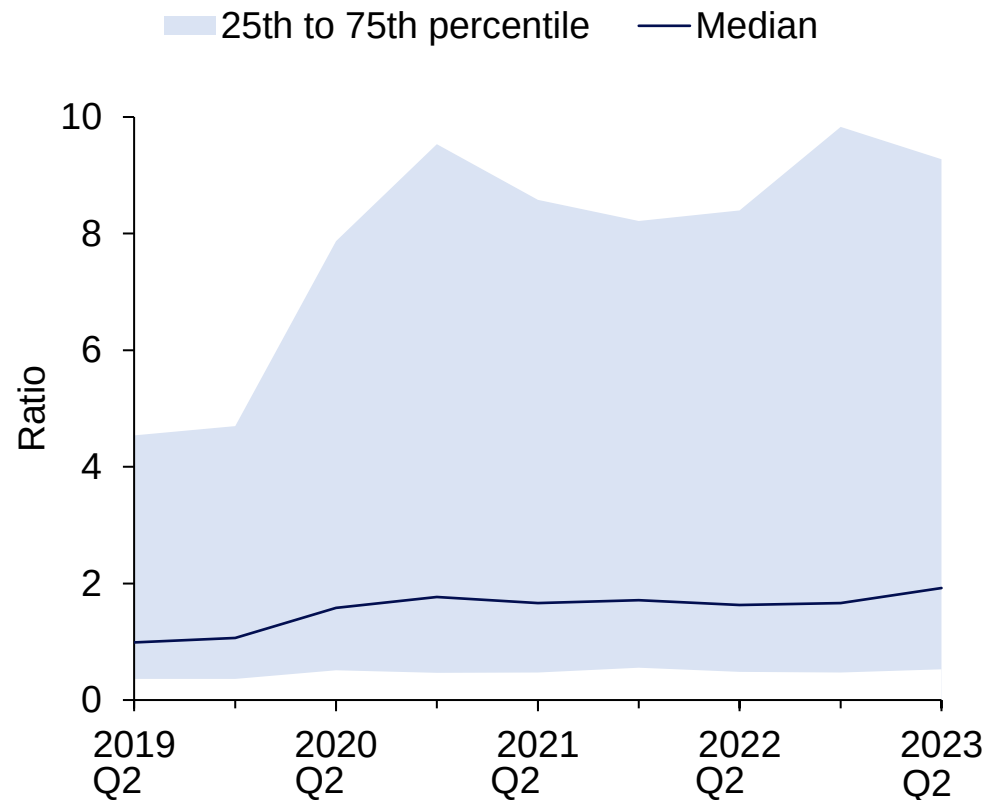
ICR of SGX-listed Firms



Source: Refinitiv Eikon, MAS estimates

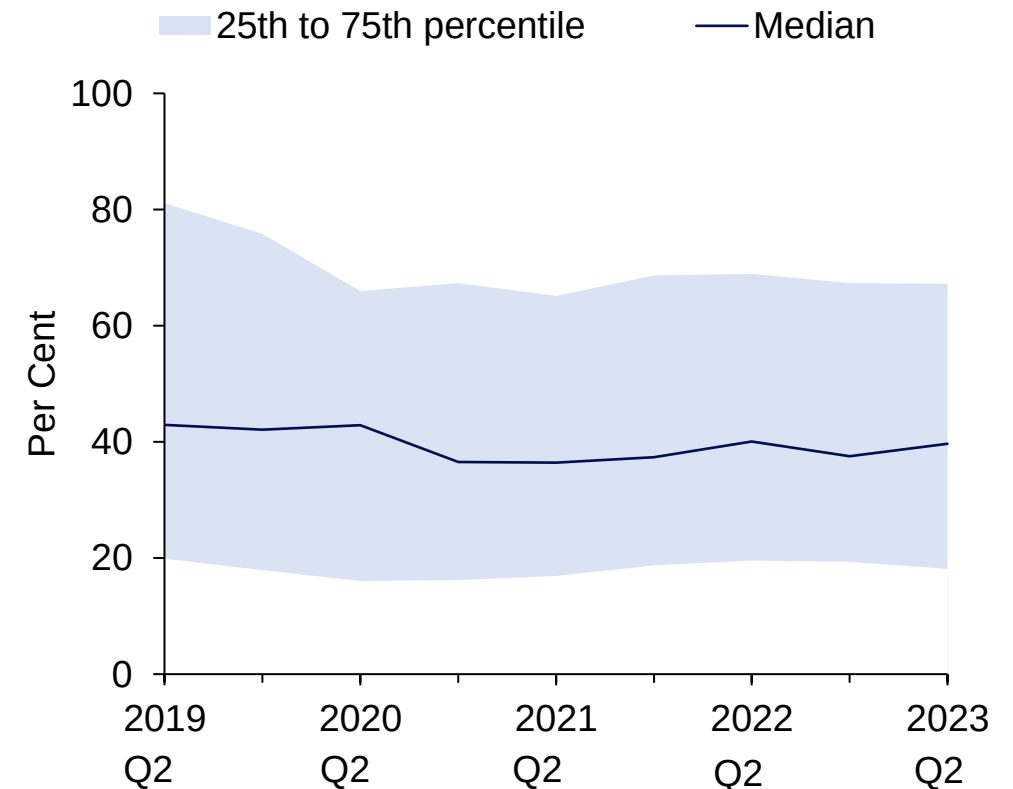
Refinancing concerns were alleviated by adequate liquidity buffers and stable debt maturity profiles

Cash Coverage Ratio of SGX-listed Firms



Source: BIS, Dealogic, MAS estimates

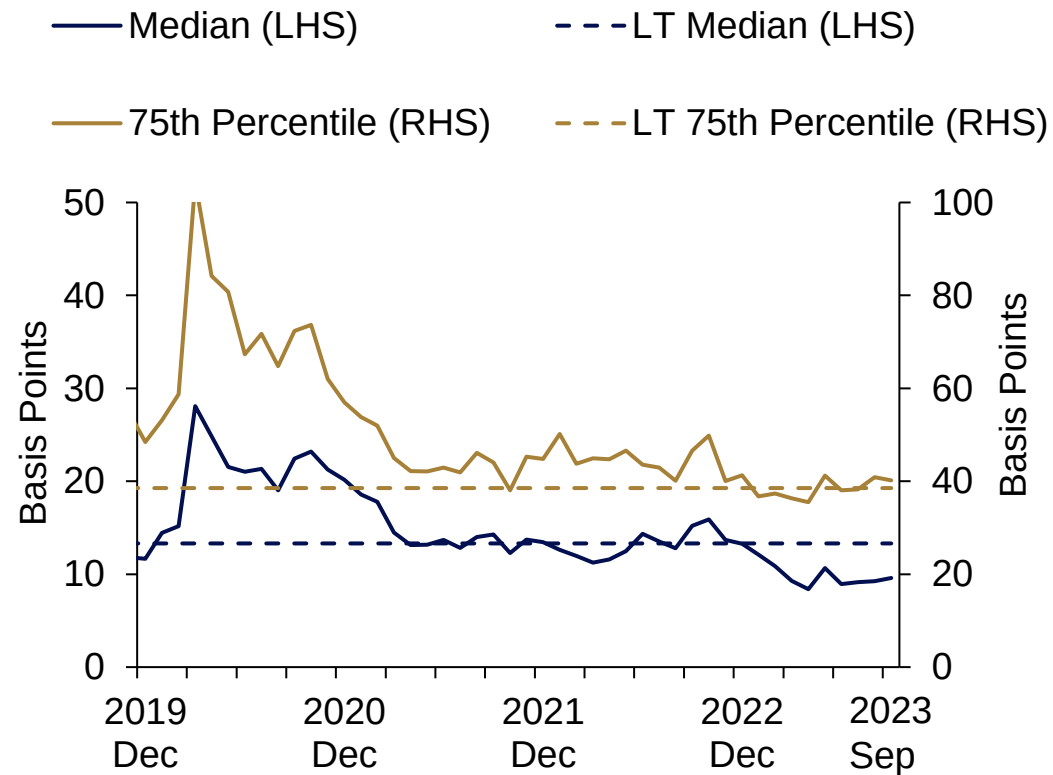
Short-term Debt to Total Debt Ratios of SGX-listed Firms



Source: Refinitiv Eikon, MAS estimates

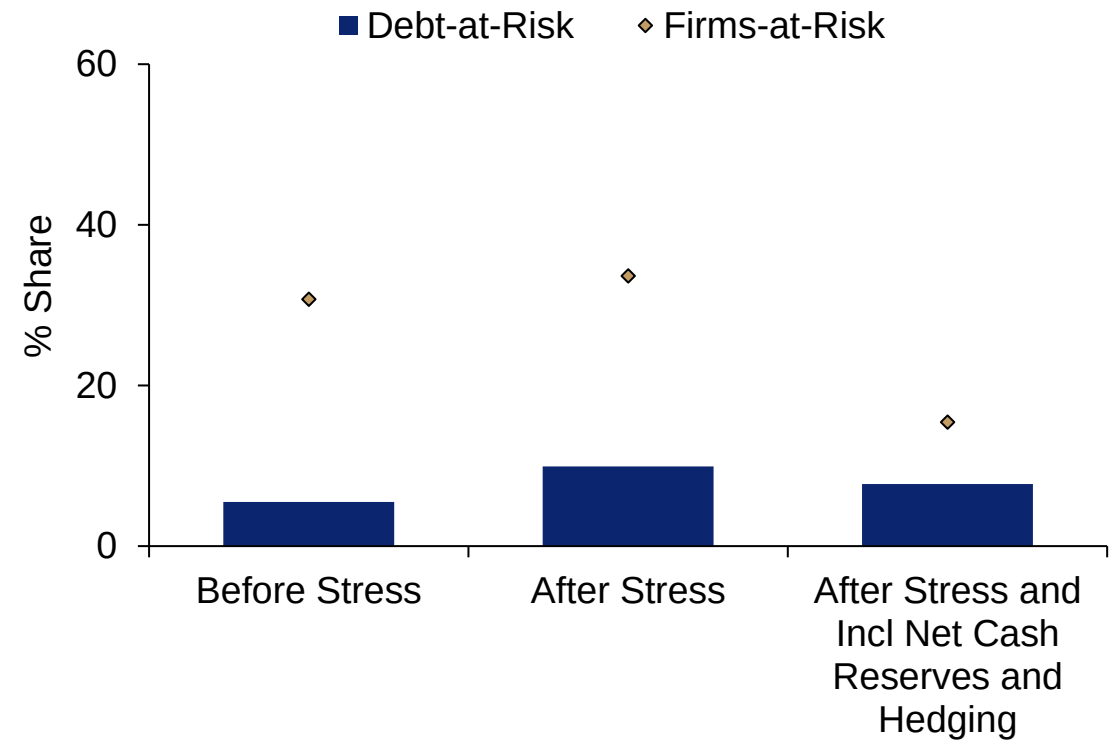
Firms are expected to be resilient to further shocks but should remain vigilant to downside risks

Probability of Default of Non-financial Corporates in Singapore



Source: NUS-CRI, MAS estimates

Firms with ICR below one, as share of total corporate debt and total firms



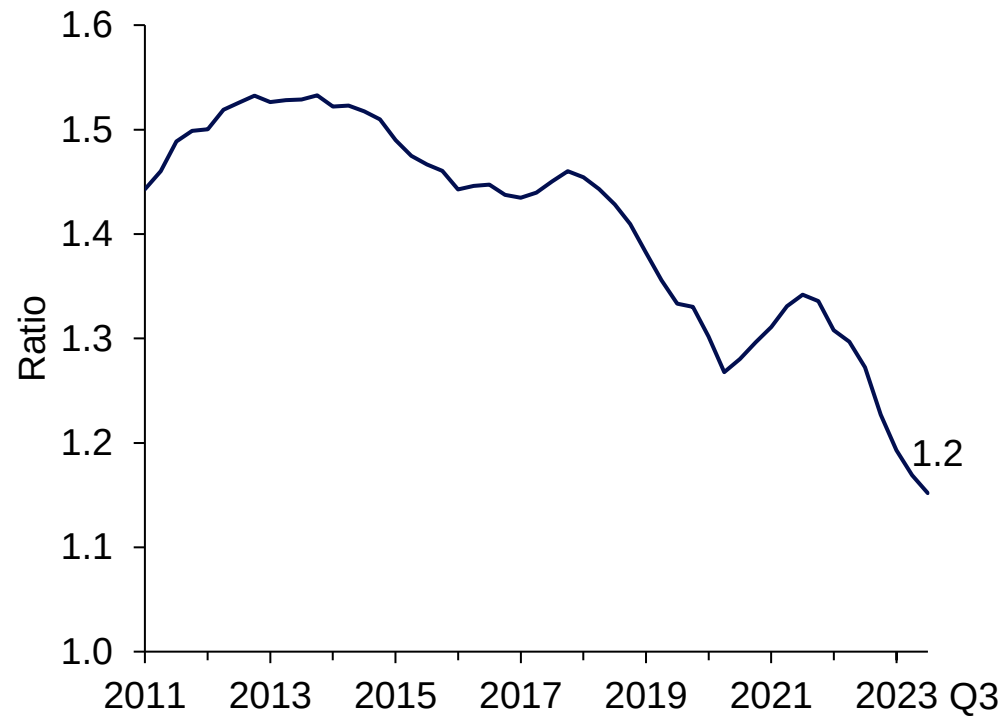
Source: Refinitiv Eikon, MAS estimates



Singapore Household Sector

Over the past year, the household sector has continued to deleverage

Household debt-to-PDI in Singapore



Source: DOS, MAS estimates

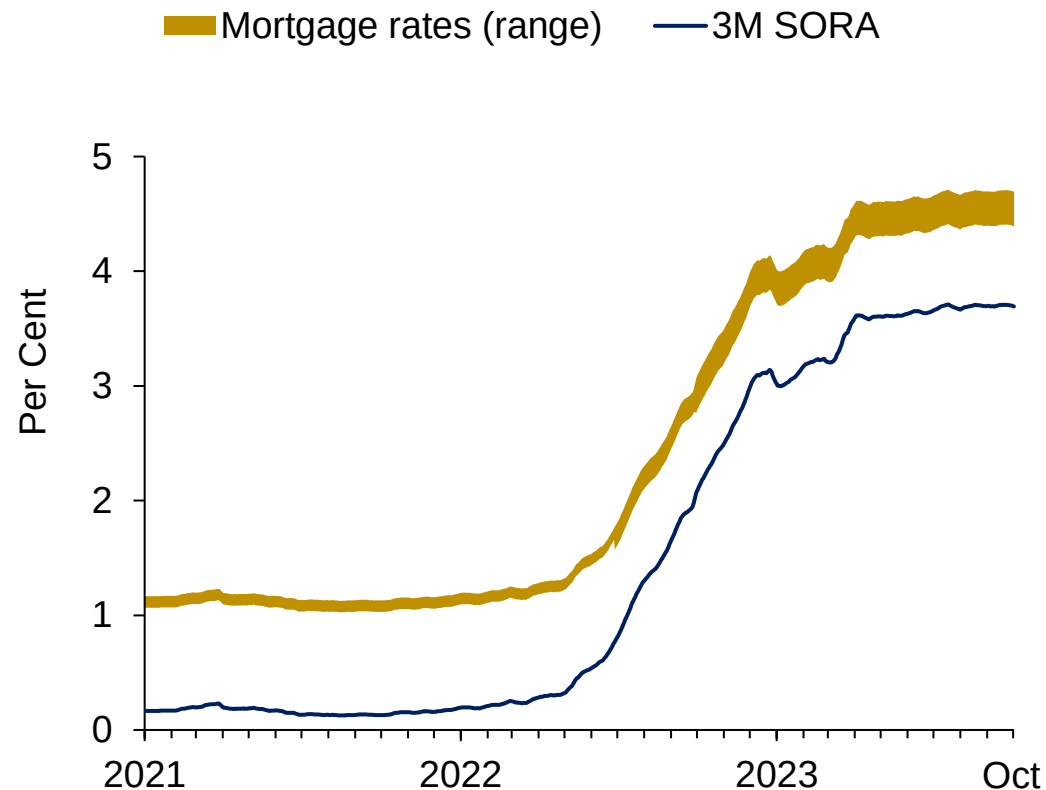
Outstanding housing loan



Source: DOS, MAS estimates

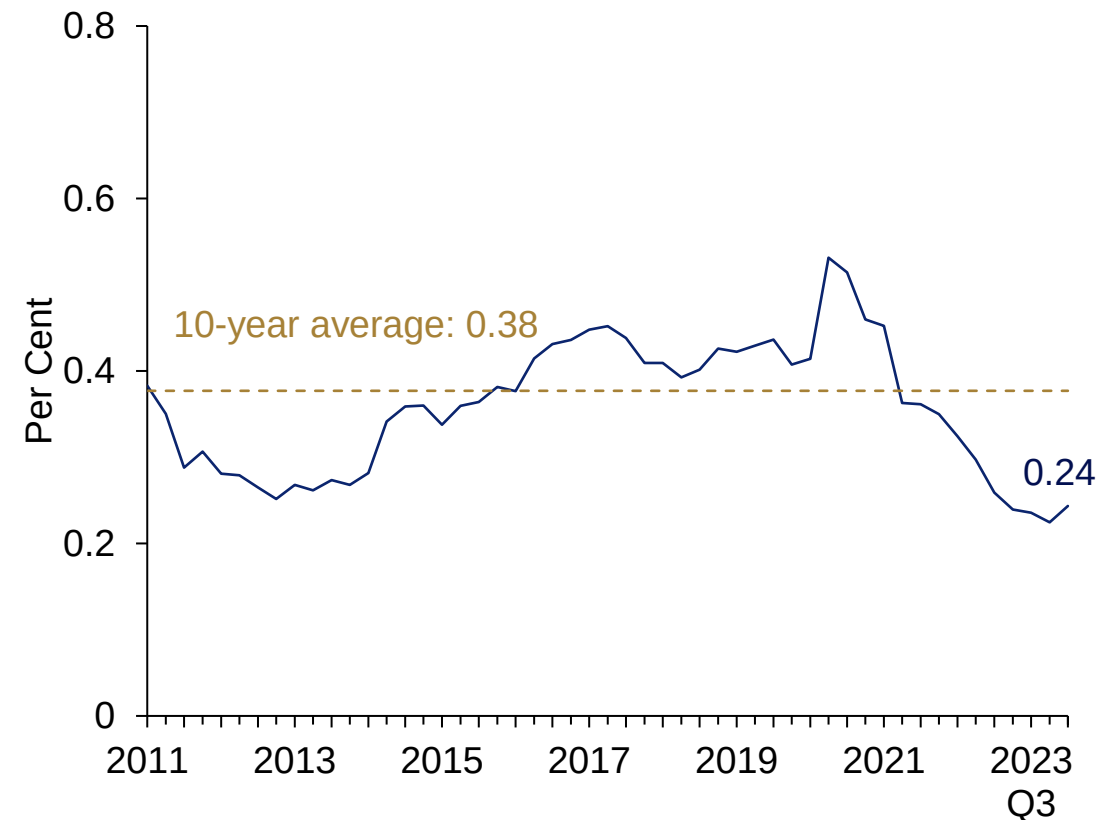
Credit quality of housing loans has remained resilient despite the pass-through of higher interest costs

SORA-based floating mortgage rate



Source: MAS estimates

Housing non-performing loan (NPL) ratio

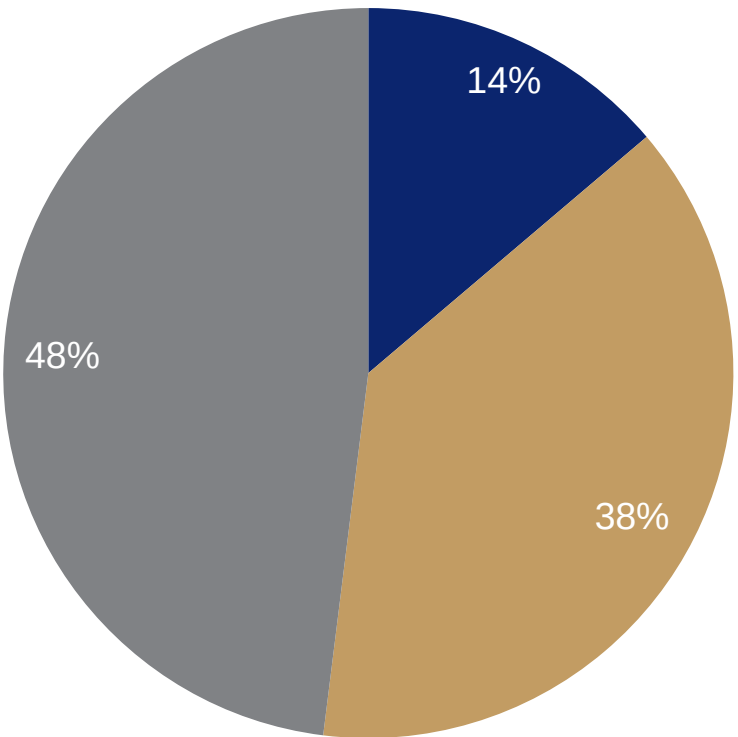


Source: MAS estimates

Borrowers have weathered the rise in interest rates with lower outstanding mortgages and firm income growth

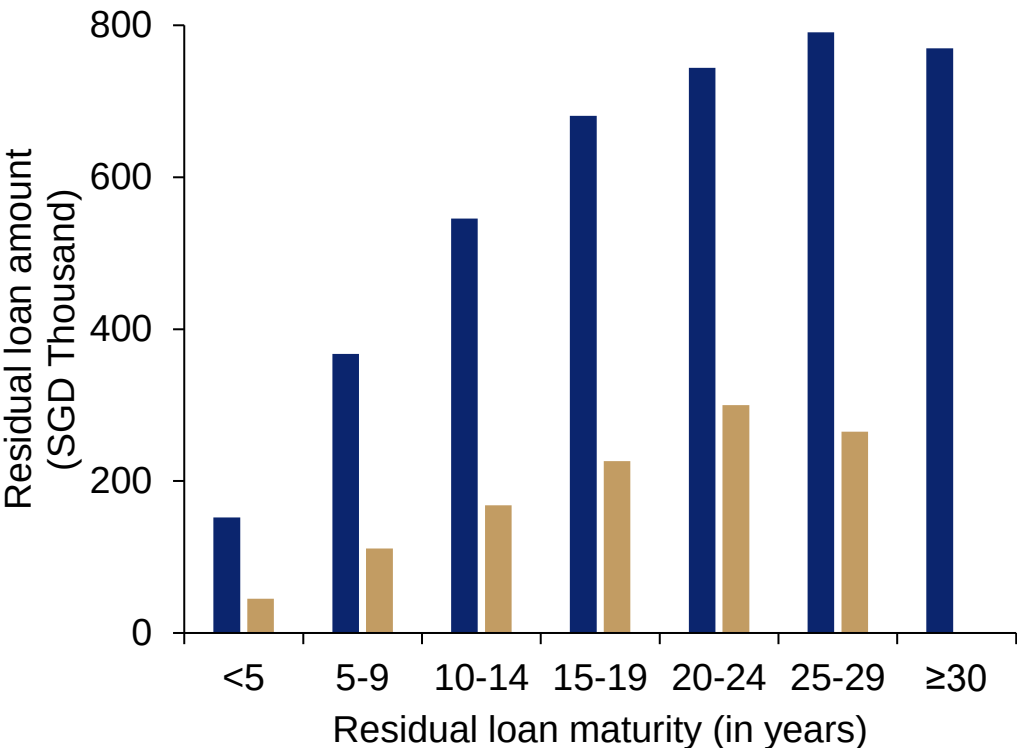
Share of housing loans by residual loan tenure

■ Less than 10 years ■ 10 to 19 years ■ 20 or more years



Average remaining loan amount by residual loan tenure

■ Private housing ■ Public housing

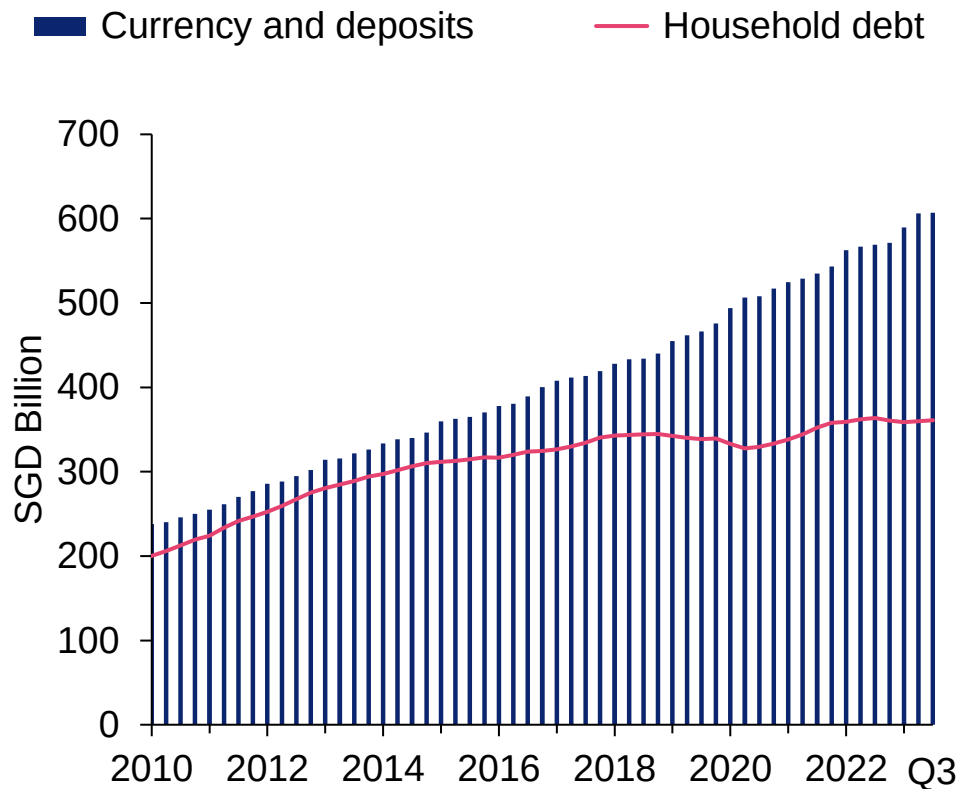


Source: MAS estimates

Source: MAS estimates

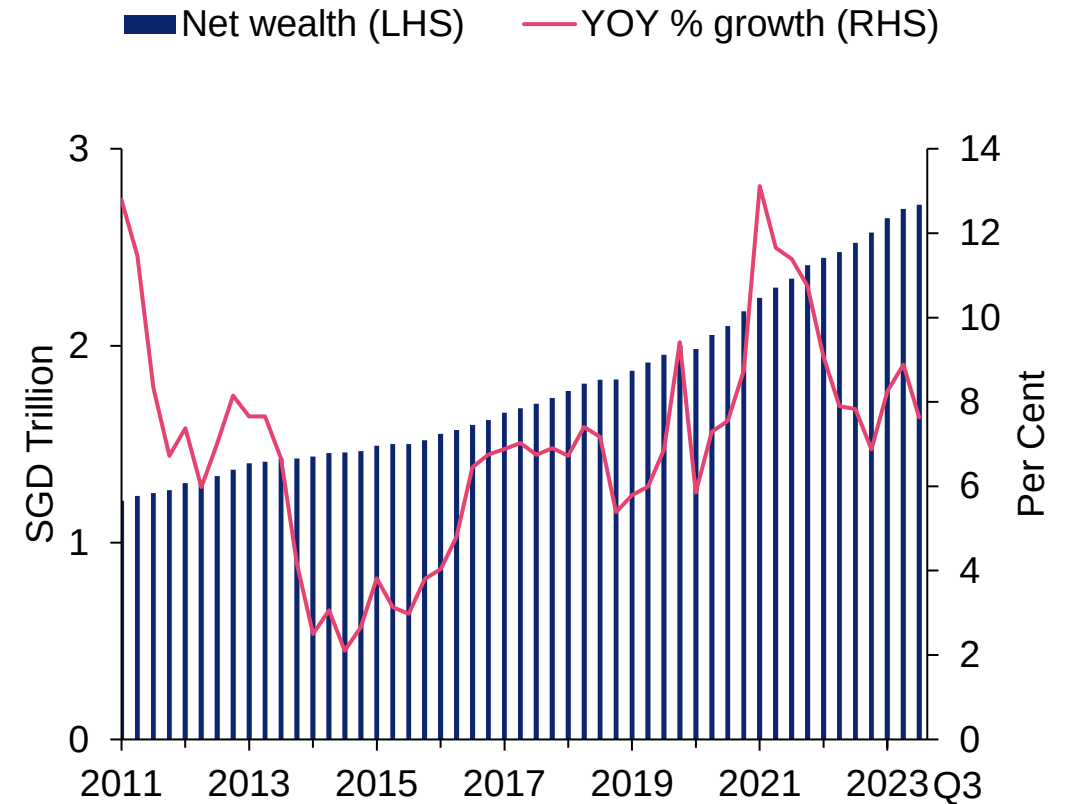
Households are in a healthy financial position but should exercise caution in taking on new debt

Household cash and debt



Source: DOS, MAS estimates

Household net wealth



Source: DOS, MAS estimates

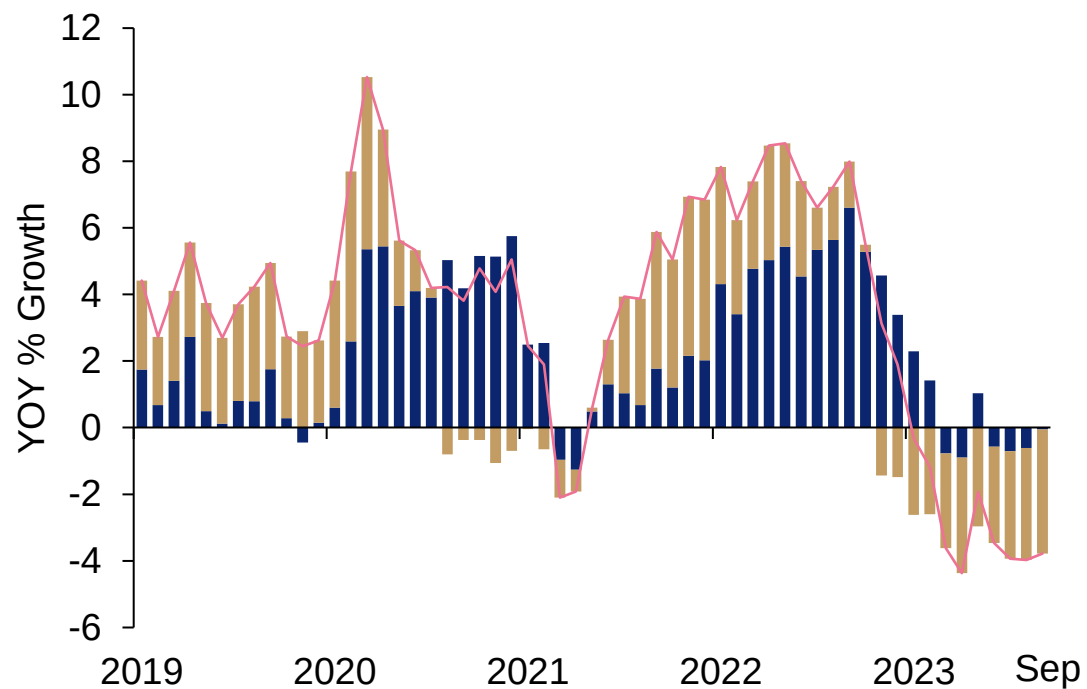


Singapore Financial Sector

Credit cycle has turned; tight monetary policy globally has dampened credit demand in Singapore

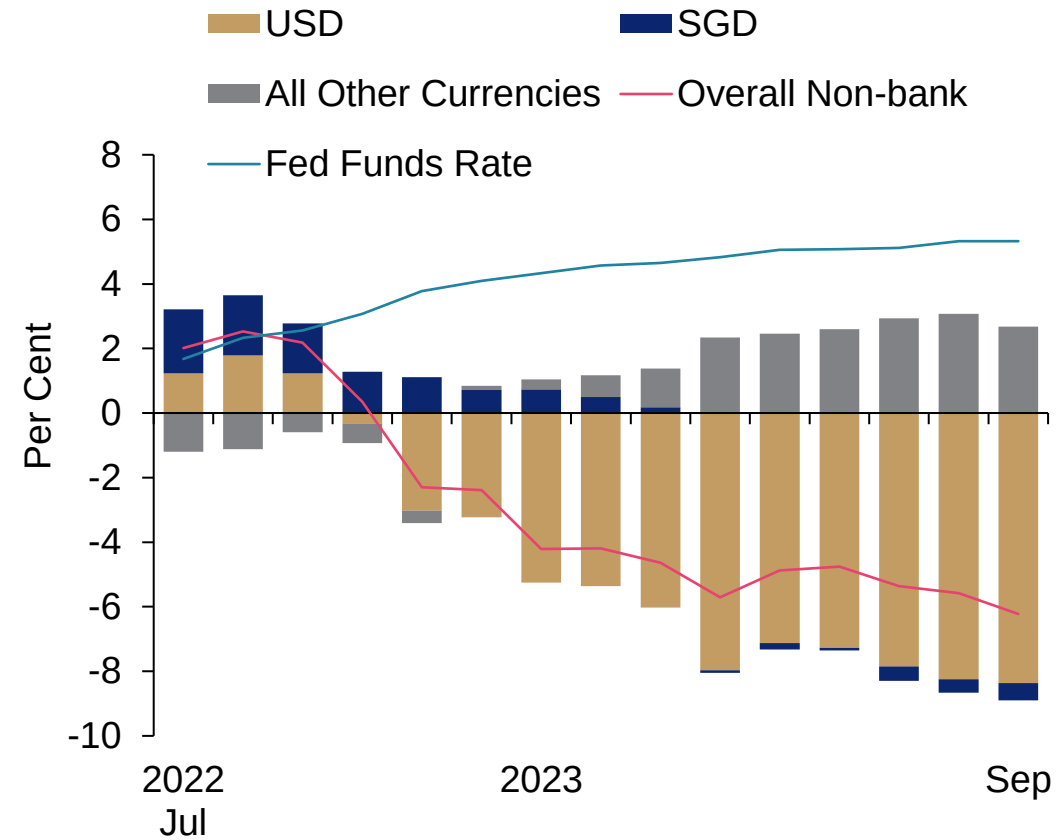
Overall Loan Growth

■ Interbank Loans ■ Non-bank Loans — Total YOY Growth



Source: MAS

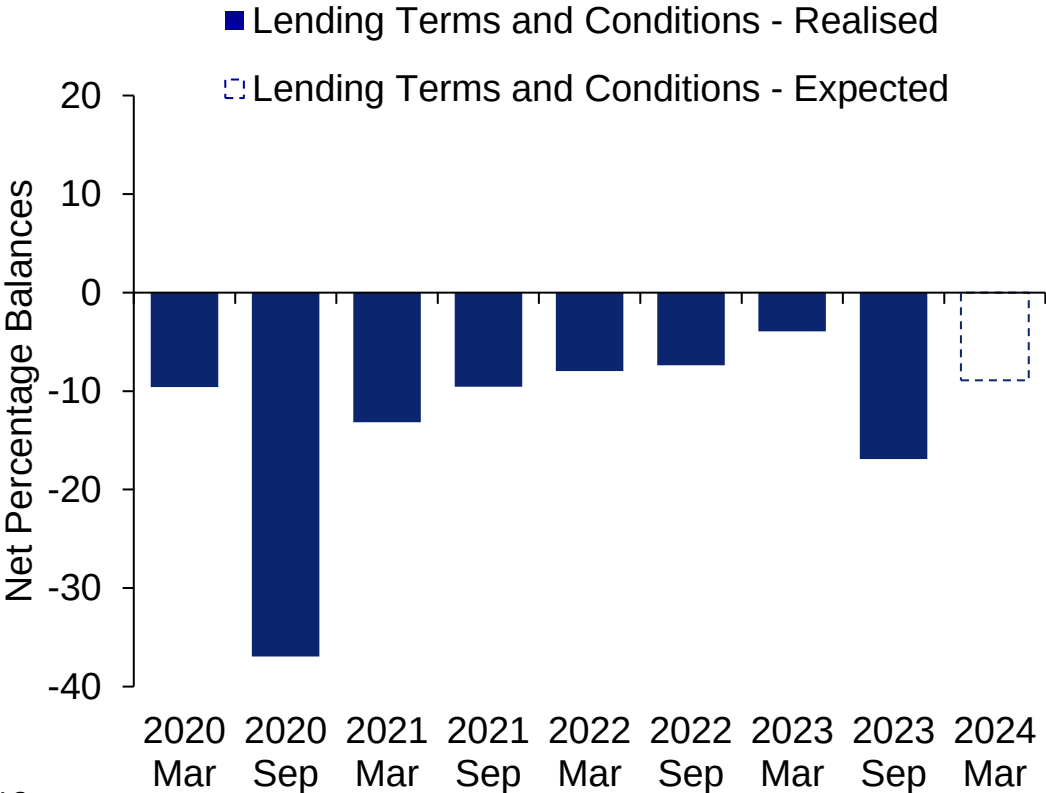
YOY Growth of Non-bank Loans vs Fed Funds Rate



Source: Board of Governors for the Federal Reserve System (US), MAS

Credit standards have tightened moderately, but banks have not significantly increased risk premiums charged on loans

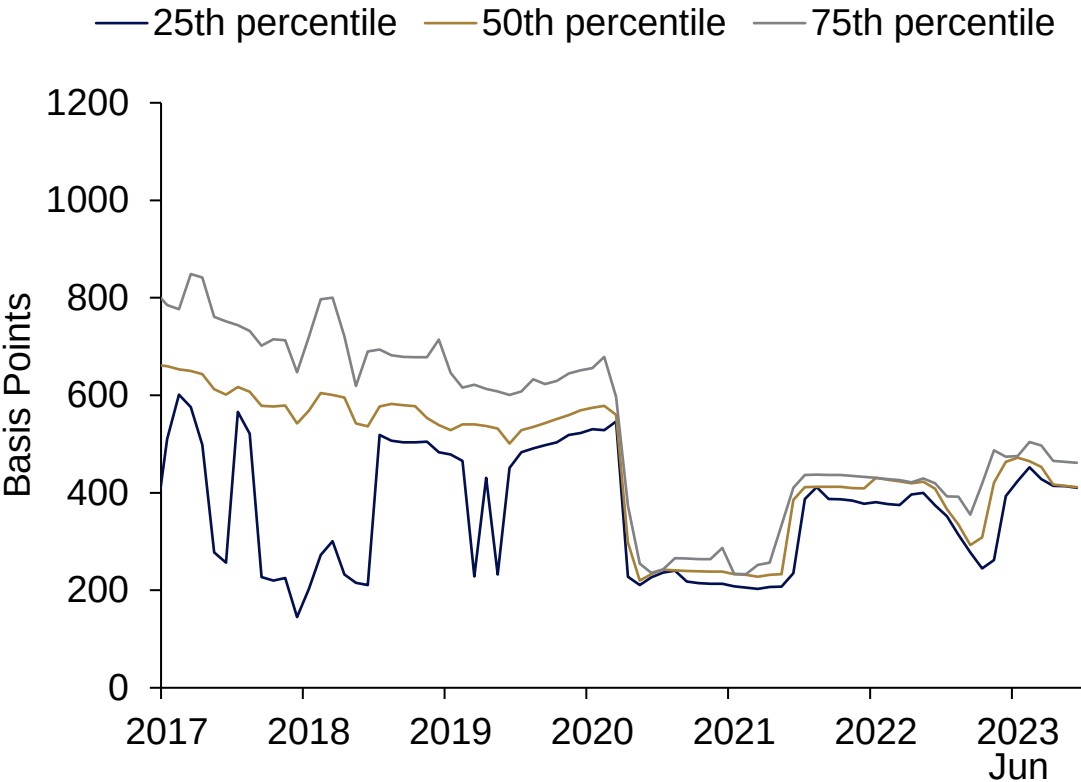
Lending Terms and Conditions for Large Corporates



Source: MAS survey

Note: The net percentage balances is a market-share weighted aggregate indicator of lender's views on lending terms and conditions. Negative values indicate the lenders have tightened.

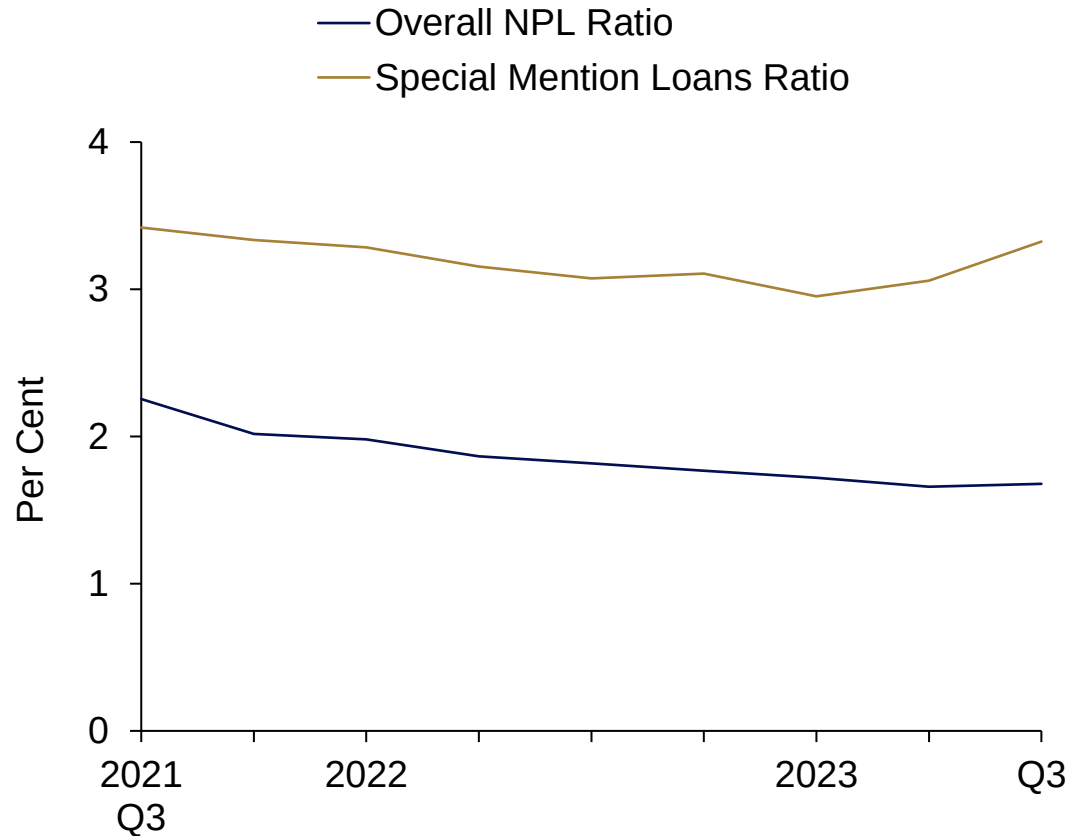
Estimated Risk Premium of New Unsecured Loans



Source: MAS survey

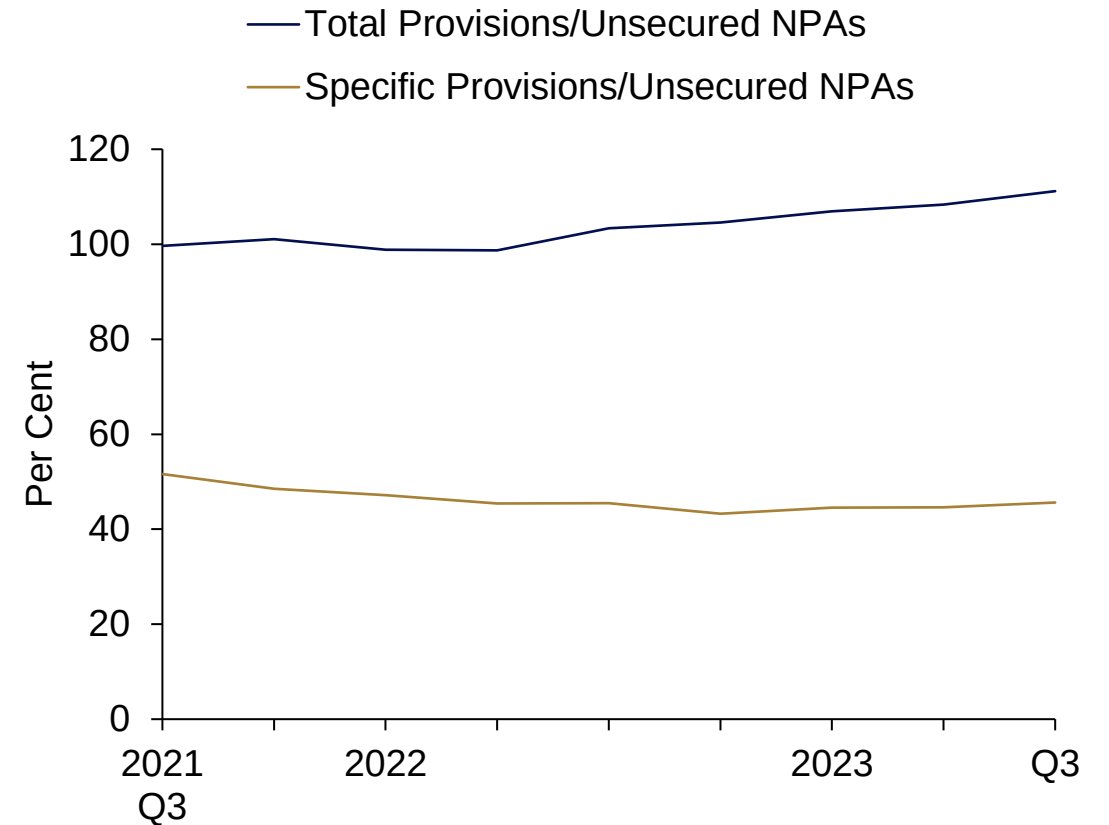
Asset quality is good and banks have pre-emptively increased provisioning coverage

Banking System's Asset Quality



Source: MAS

Banking System's Provisioning Coverage

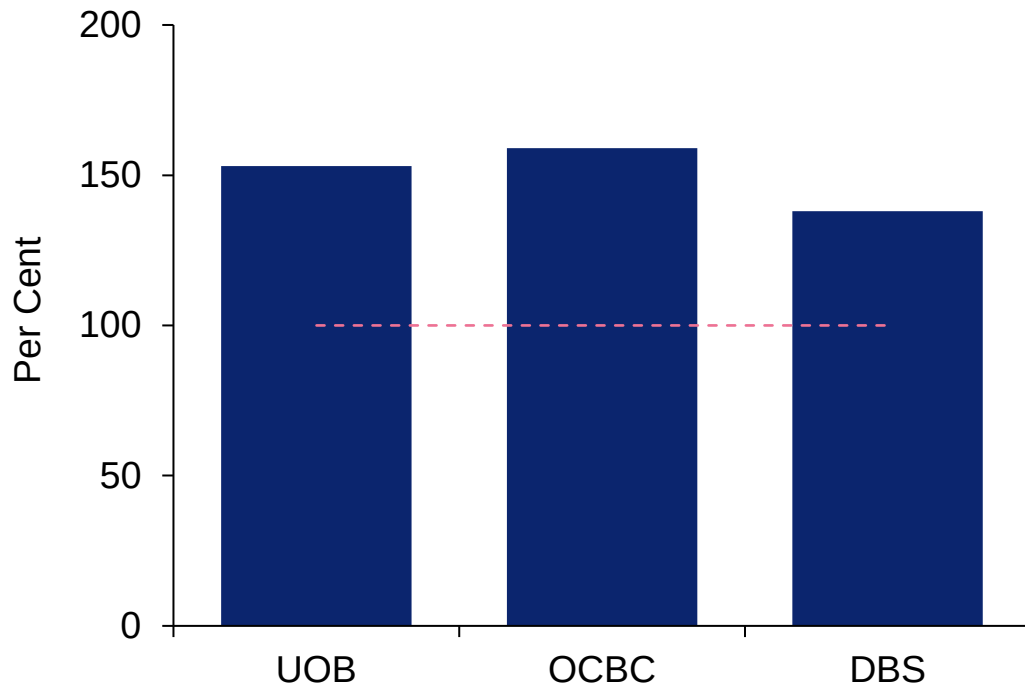


Source: MAS

Banks continue to maintain strong liquidity positions

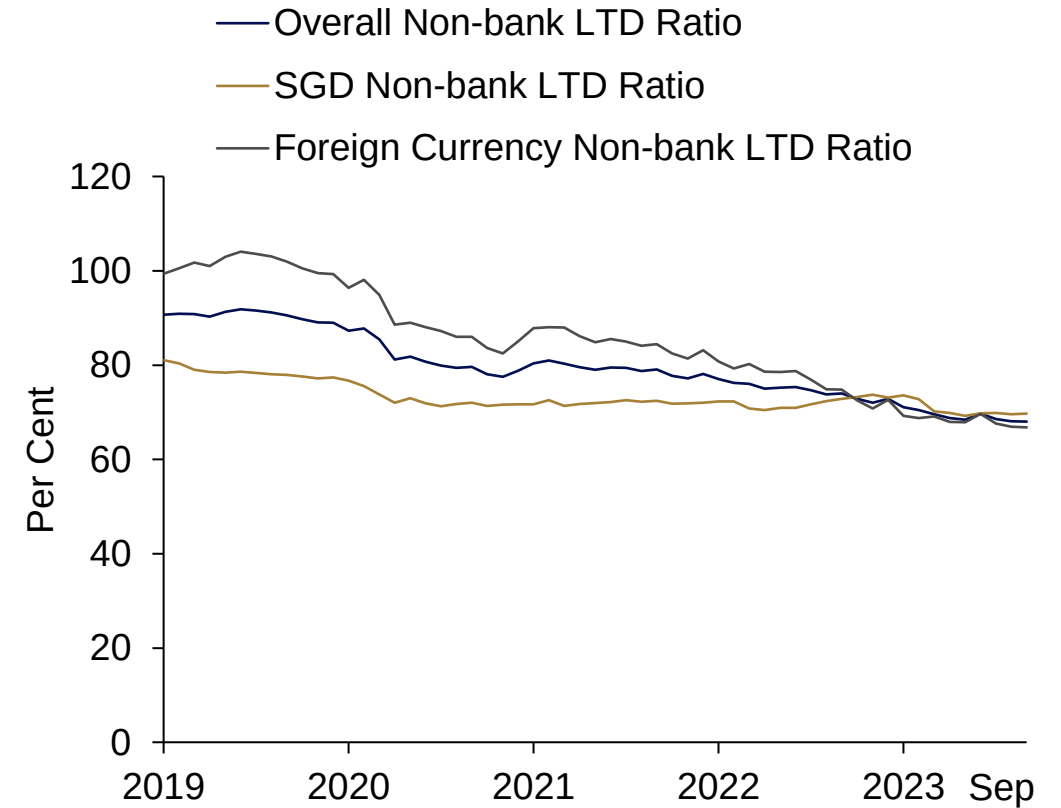
Local Banking Groups' All-Currency LCRs

--- MAS All-Currency LCR Minimum Requirement (as of Jan 2019)



Source: MAS

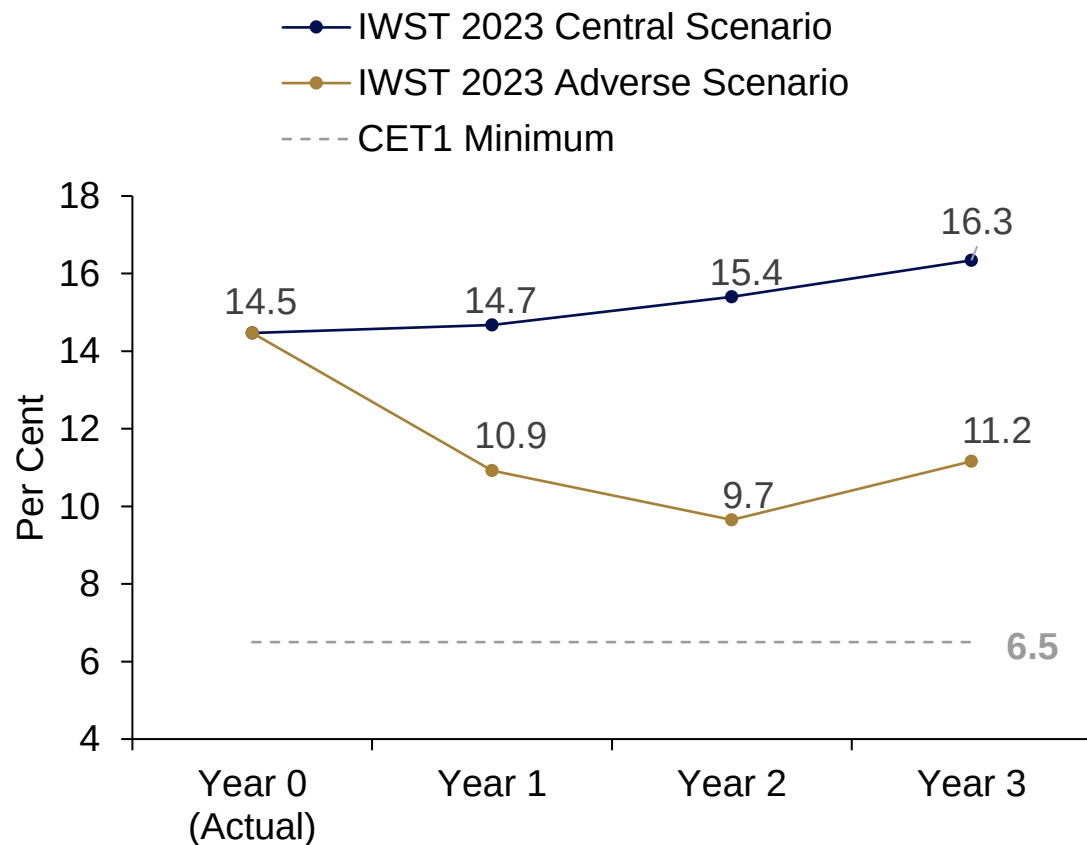
Banking System's Non-Bank LTD Ratios



Source: MAS

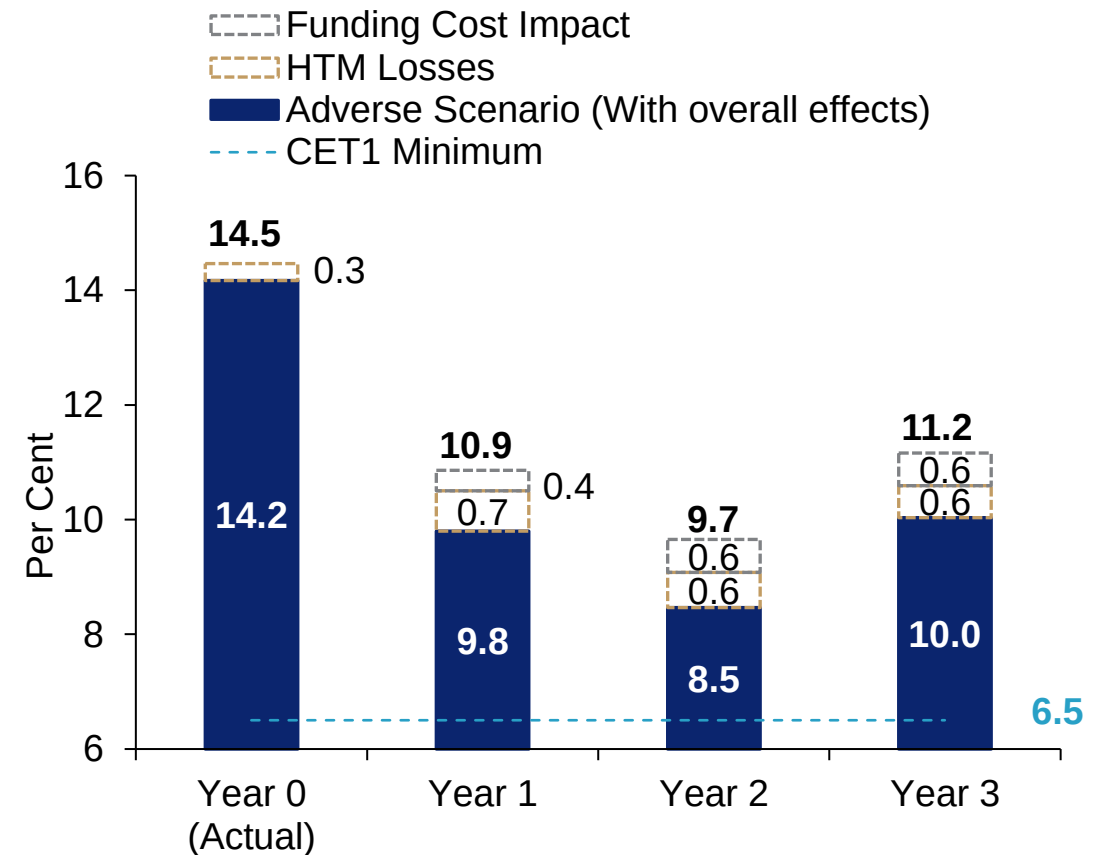
MAS' stress test confirms that banks have adequate capital buffers to weather potential downside risks

D-SIBs' Aggregate CET1 Capital Adequacy Ratio under IWSST Scenarios



Source: D-SIBs' submissions, MAS estimates

Solvency impact of higher funding costs and MTM losses for HTM assets



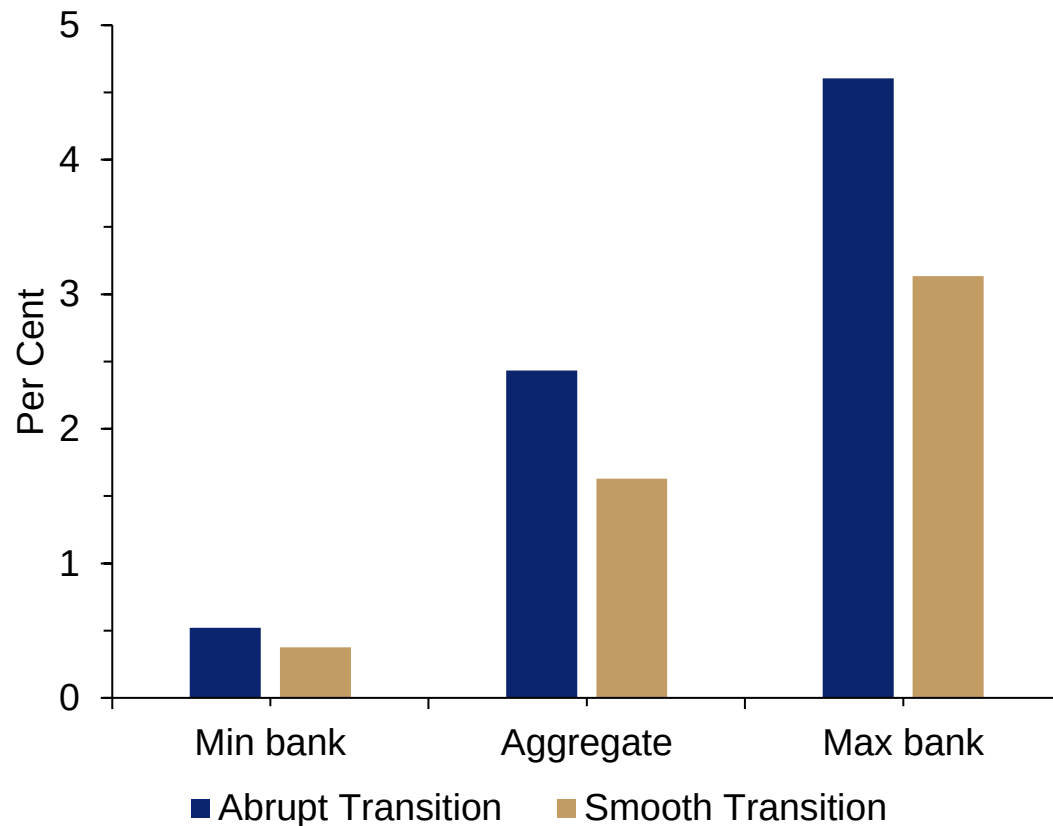
Source: D-SIBs' submissions, MAS estimates



Special Feature 1: Assessing the impact of climate transition risk on the financial system

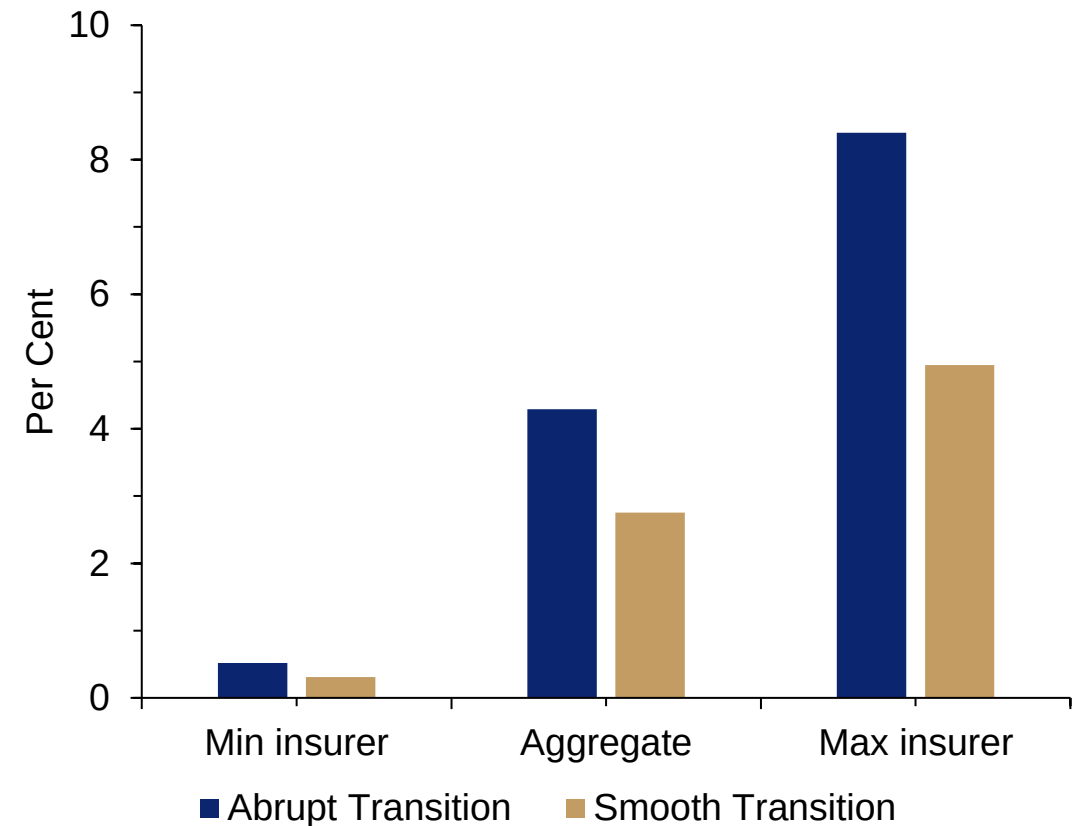
Compared to a Smooth Transition, an Abrupt Transition would result in more severe financial losses for financial institutions

Banks' credit losses as a share of CPRS exposures



Source: Banks' submissions, MAS' estimates

Insurers' market losses as a share of CPRS exposures



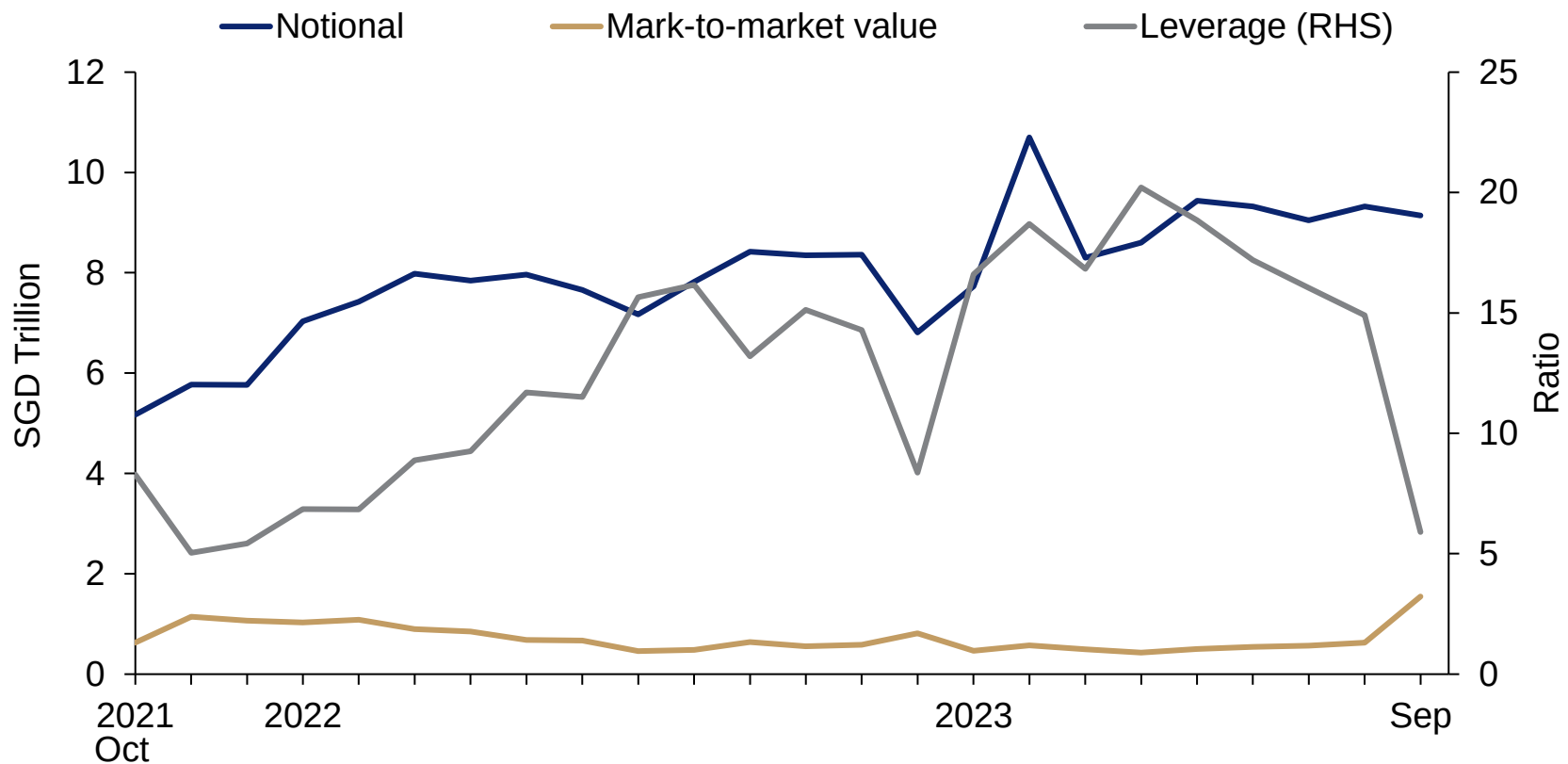
Source: Insurers' submissions, MAS' estimates



Special Feature 2: Analysing vulnerabilities of non-bank financial institutions in Singapore

Risks from NBFI leverage to domestic financial system are limited

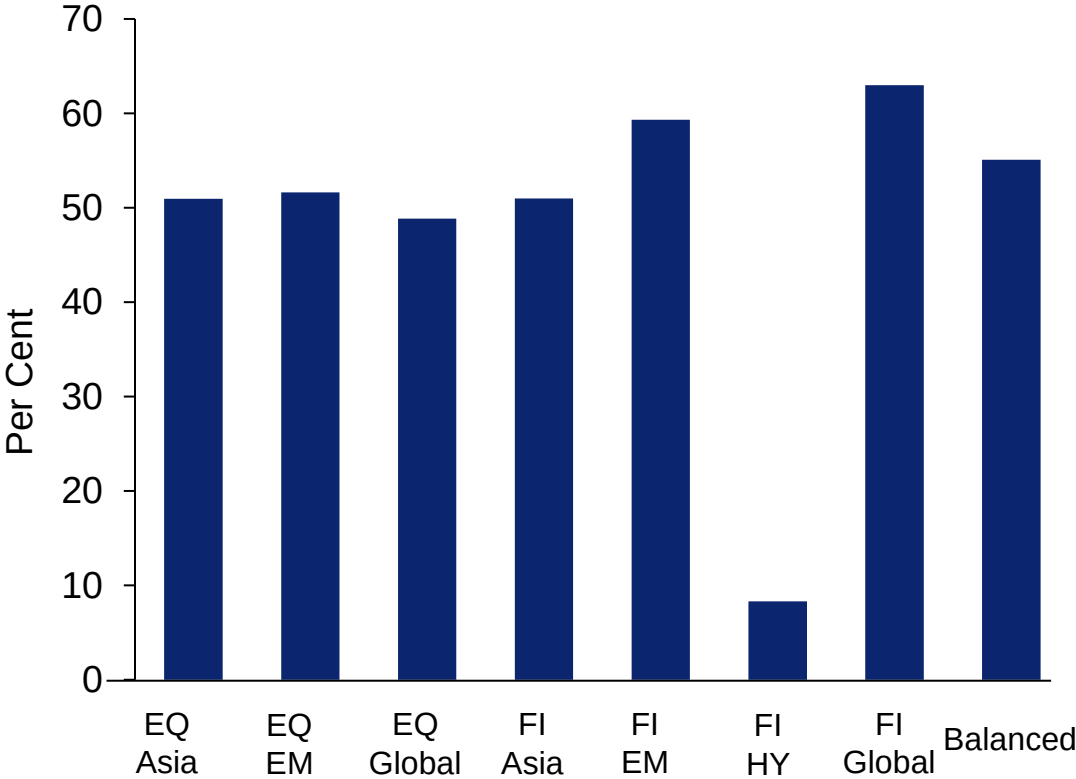
NBFIs' OTC derivatives positions



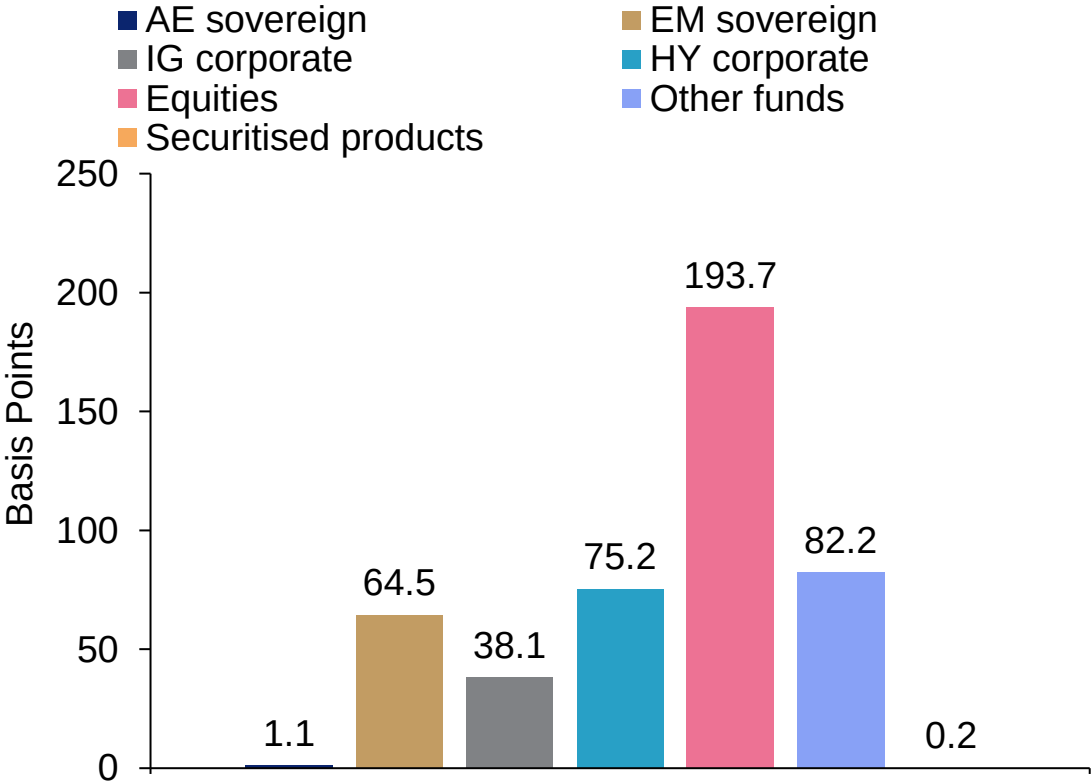
Source: DDRS, MAS estimates

Stress simulations show most investment funds would have sufficient liquid assets to meet redemption shocks

Median high quality liquid assets as a % of total net assets
(as of June 2023)



Price impact of funds' asset sales on asset markets

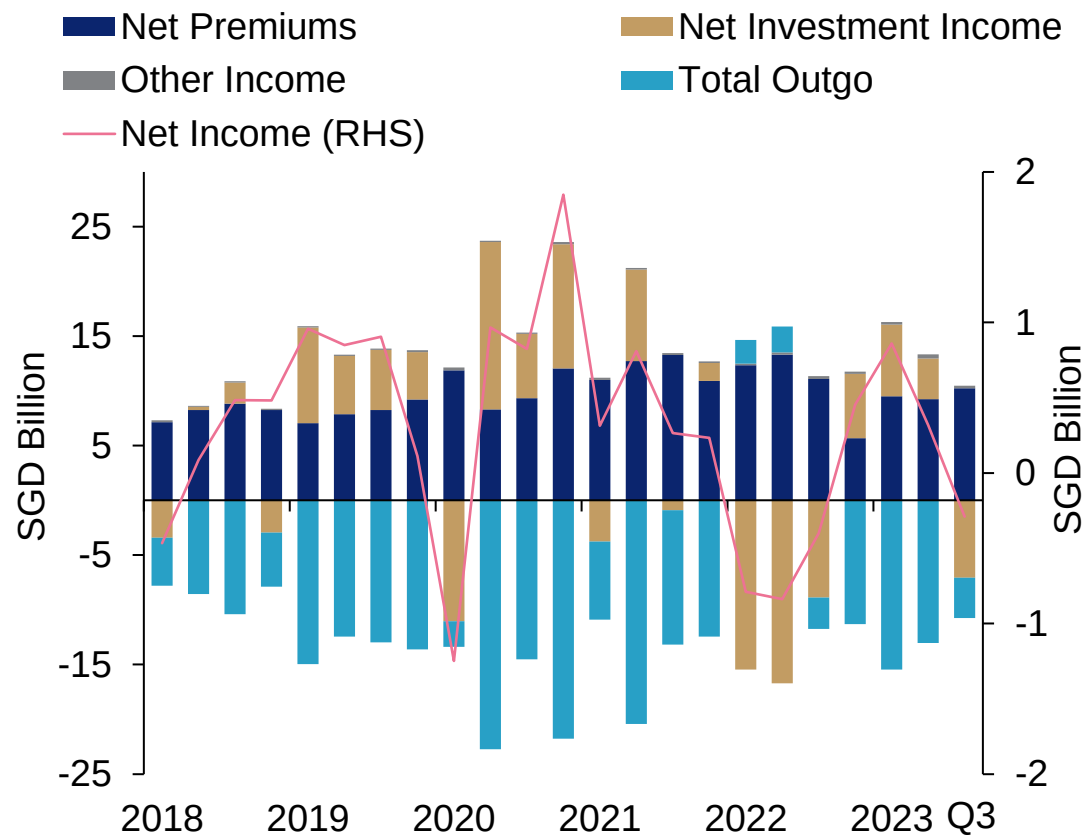


Source: MAS survey

Source: MAS estimates

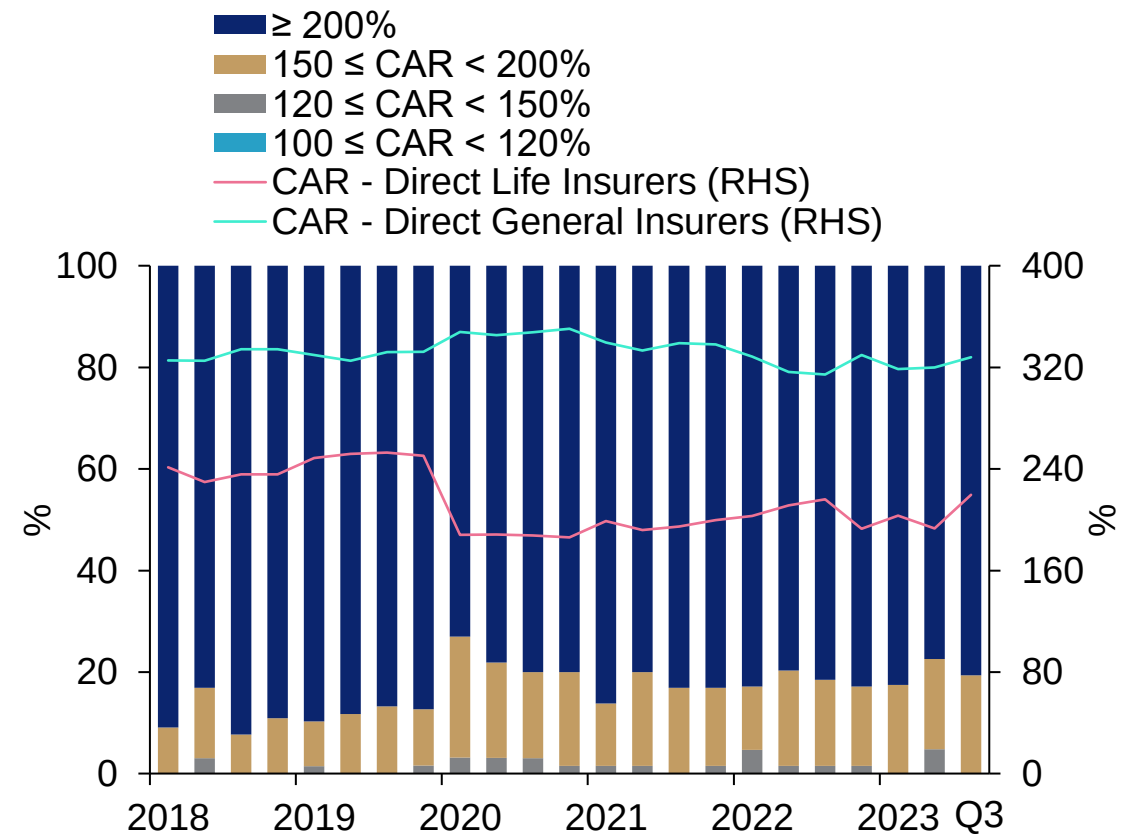
Insurers have maintained strong capital buffers and sound liquidity positions

Direct life insurers' net income by source



Source: MAS estimates

Capital adequacy ratios of direct life and direct general insurers



Source: MAS estimates



Special Feature 3: Effectiveness of MAS ESG loan facility during the Covid-19 period

In 2020, ESG and MAS rolled out credit easing schemes to support bank lending to SMEs



ESG Loan Schemes

- Temporary Bridging Loan Programme (TBLP) and the Enhanced Enterprise Financing Scheme—SME Working Capital Loan (EFS-eWCL)
- Schemes provided 70 – 90% government risk-sharing on loans made by eligible financial institutions to SMEs
- Support credit provision to SMEs in order to ease cashflow constraints during the pandemic



MAS SGD Facility for ESG Loans

- Provided low-cost SGD funding to eligible financial institutions, on loans made under ESG loan schemes
- From April 2020 to March 2022, funding provided at an interest rate of 0.1% per annum.
- Facility aimed to keep borrowing costs low for local enterprises amid economic disruptions from the pandemic

- **ESG Loan Schemes** supported credit supply via the risk channel
- **MAS SGD Facility** supported credit supply via the interest rate channel
- Study estimated policy impact on credit volumes and interest rates on SME loans

Both sets of credit easing schemes contributed to increased lending to SMEs and reduced their loan interest rates

Impact of ESG Loan Schemes and MAS SGD Facility April 2020 to March 2021

	Stock of Loans Outstanding (SGD, millions)	SME Monthly Loan Approvals (SGD, millions)	SME Loan Interest Rates (% point)
ESG Loan Schemes	2498	311	-0.32
MAS SGD Facility	2205	274	-0.28
Combined	4703	585	-0.6

Source: EPG-MAS estimates

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