Measuring the cost of equity of Maltese Banks

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Research Motivation

- Equity is a key source of loss-absorbing capacity, but the return required by shareholders, the cost of equity (CoE) is **not directly observable**.
- Understanding the **bank-specific and macro-financial drivers** of CoE helps to identify whether changes **reflect individual bank fundamentals or broader market repricing** for listed banks.
- The relationship between **market-based CoE and observable fundamentals can be used to derive indicative CoE estimates** for unlisted banks.
- CoE can provide a measure of perceived bank risk, **complementing profitability indicators such as banks' return on equity (ROE).**

Main Results: Over 2018–2026, average ROE of approximately 8% exceeded the corresponding average cost of equity at 5.8% for the six core banks.

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Approach and Main Challenges

Approach (data from January 2018 to May 2026)

1. Estimate market-based CoE for four banks listed on the Malta Stock Exchange (MSE).
2. Estimate the relationship between market-based CoE and observable bank fundamentals. This mapping is used to infer CoE for unlisted banks.[1]

Main challenges

- The MSE is a **relatively small market.**
- Only a **limited number of Maltese banks** have sufficiently long listed-equity histories.
- **Limited availability of analyst forecasts of future earnings, dividends and book value of equity** prevents the application of forward-looking implied cost-of-equity models, such as done by Altavilla et al. (2021).

[1]The inferred CoE was estimated for all remaining banks, but model performance was strongest for three unlisted banks. This is expected as it reflects the limited first-stage sample and the absence of international banks in the first step.

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Listed Banks

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Capital Asset Pricing Model

Starting point:

$$R_{i,t} - R_{f,t} = \alpha_i + \beta_i\left(R_{m,t} - R_{f,t}\right) + \varepsilon_{i,t} \quad (1)$$

$$k_{i,t} = R_{f,t} + CRP_{MT,t} + \beta_{i,t} ERP \quad (2)$$

$R_{i,t}$: monthly bank equity return from the MSE, $R_{m,t}$: monthly return on the MSE market index, $R_{f,t}$: German Bund risk-free rate
β_i: sensitivity of bank equity returns to the MSE market return
$CRP_{MT,t}$: time-varying Malta country-risk premium, measured using the Malta–Germany sovereign spread
ERP: mature-market equity risk premium (source: Damodaran (2013))
$k_{i,t}$: estimated market-based cost of equity for bank i at time t

Fama–French and sovereign-credit models, as an alternative to CAPM, are also estimated as richer alternative models using the mentioned estimation techniques.

Alternative approaches to obtain bank-specific market betas, including ordinary least squares (OLS), rolling-window OLS regressions, Constant Conditional Correlation (CCC) and Dynamic Conditional Correlation (DCC) models.

...Model selection favours CAPM-based specifications for every bank in the sample.

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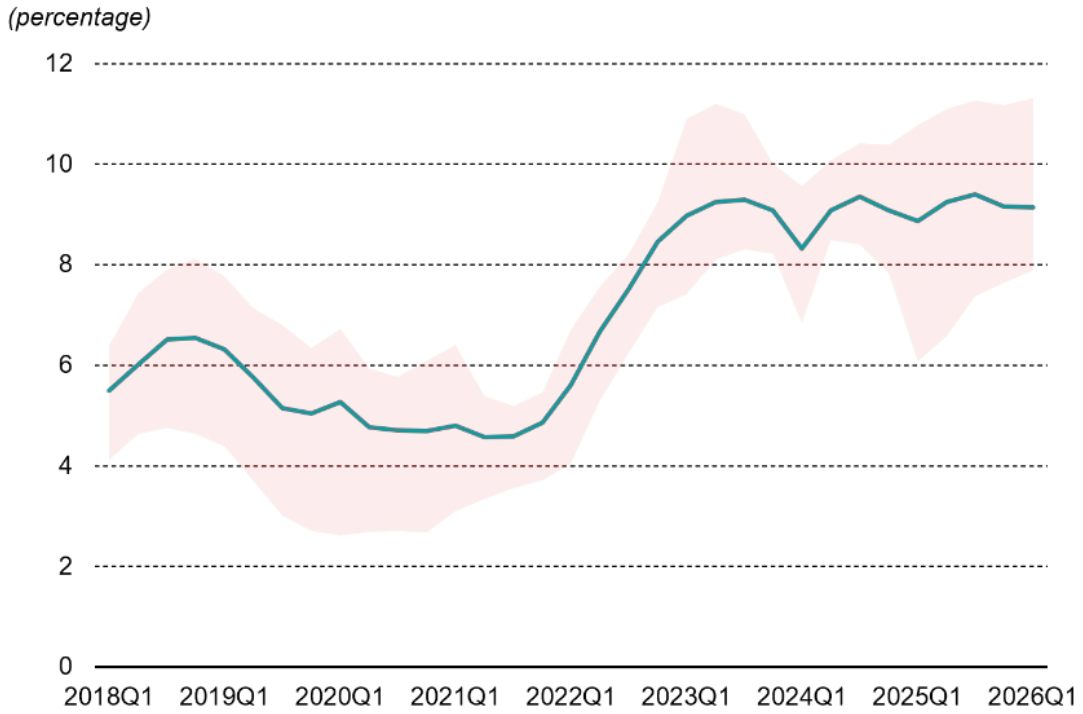
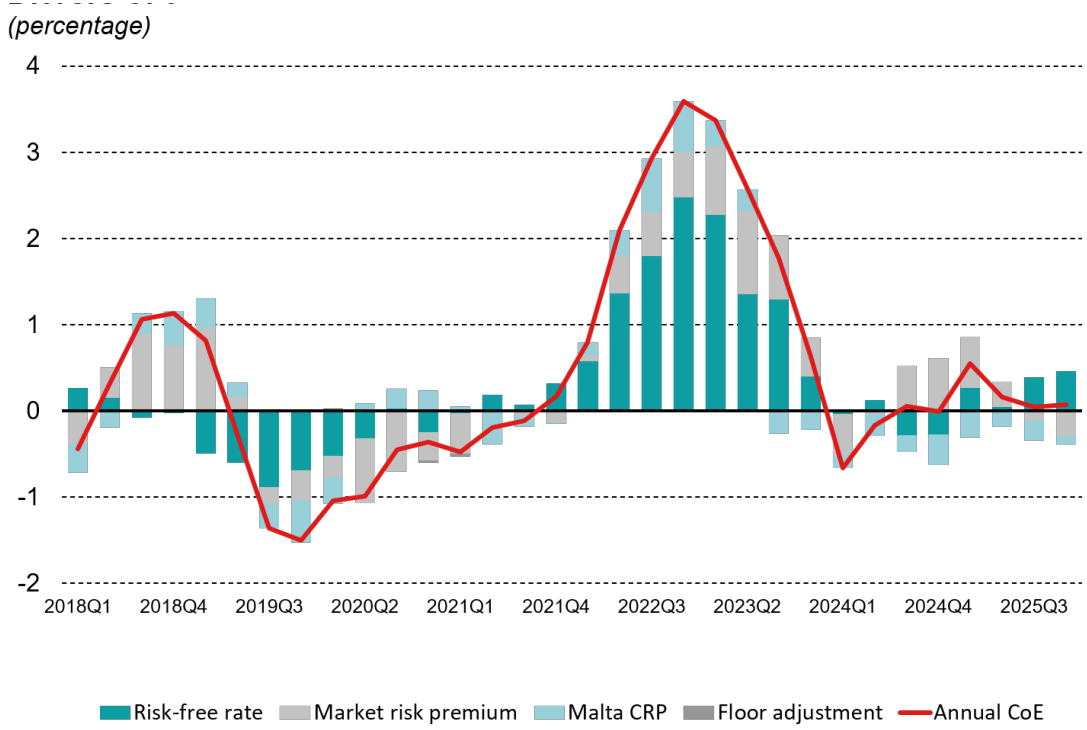
Headline CoE Estimates

Figure 1: Average market-based estimates for Listed Banks



Sources: Central Bank of Malta calculations.
Note: The series represents the average of the three highest cost-of-equity estimates implied by the various asset-pricing models for each selected banks. The shaded region shows the minimum-to-maximum range of the bank-level cost-of-equity average estimates.

Figure 2: Drivers of the Average Market-based CoE



Source: Central Bank of Malta calculations.

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Extending the analysis to unlisted banks

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Unlisted Banks

- **Market-based CoE can only be directly observed for listed institutions.**
- **Central Identifying Assumption**: listed-bank fundamentals–CoE sensitivities are transferable to unlisted banks, allowing their CoE to be interpreted as the return they would face if publicly listed
  - **This follows the ECB study by Altavilla et al. (2021).**
- Several non-core and international banks **exhibit fundamentals outside the range observed for listed banks**, particularly in terms of capitalisation, funding structure, profitability and bank size.
- Hence, this approach is limited to specific similar banks in terms of bank fundamentals.

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CoE and Bank Fundamentals

$$CoE_{i,t} = \alpha + \beta_1 NPL_{i,t} + \beta_2 CET1_{i,t} + \beta_3 (Deposits/Loans)_{i,t} + \beta_4 \ln(Assets)_{i,t} + \tau_t + \varepsilon_{i,t} \quad (3)$$

Variable	Coefficients
NPL ratio	+0.1030***
CET1 ratio	−0.0450
Customer deposits/loans	−0.0133***
Log assets	+1.2285***

*Notes: ***p < 0.01, **p < 0.05, *p < 0.10.*

Pooled OLS with quarter fixed effects over 2018Q1–2026Q1

Inference is based on **Driscoll–Kraay standard errors** with four quarterly lags, allowing for heteroskedasticity, serial correlation and cross-sectional dependence.

Table 1: Baseline Regression Estimates

- **The regression is first estimated for listed banks:**
  - Customer deposits / loans dominates and NPL ratio mainly dominate for listed banks.
- The coefficients are then used to obtain the CoE estimates for unlisted banks:

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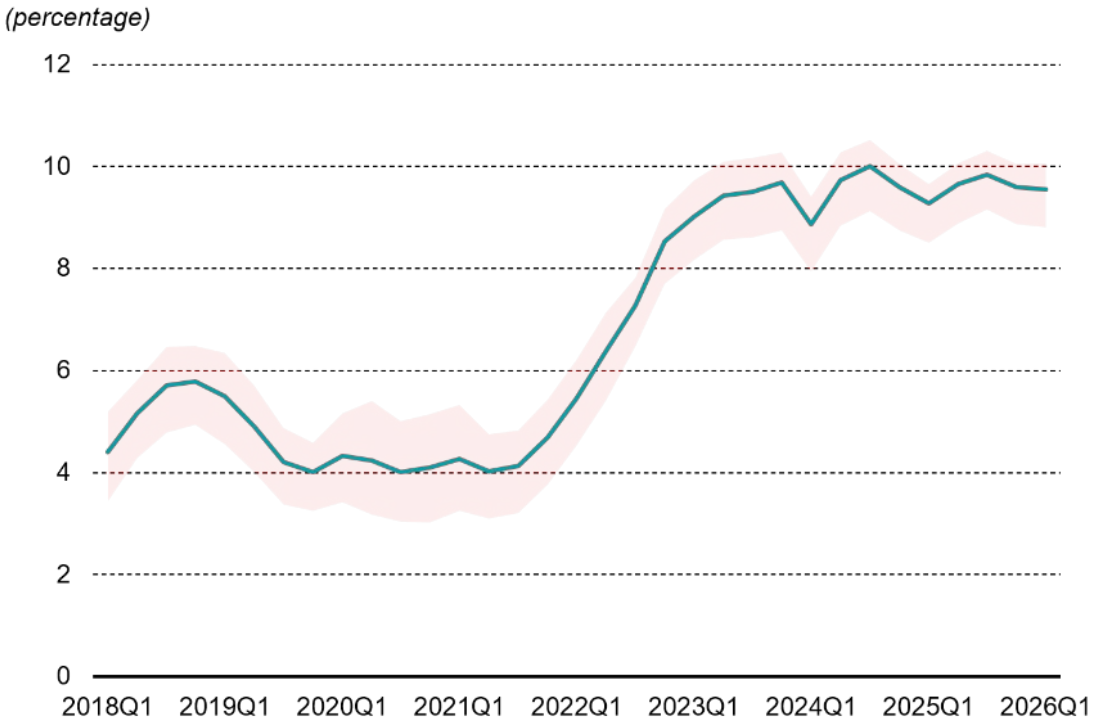
Unlisted Banks: CoE Estimates

Figure 3: Average Cost of Equity Estimates Based on Bank Fundamentals



Sources: Central Bank of Malta calculations.
Note: The series represents the average of the three highest cost-of-equity estimates implied by the various asset-pricing models for each selected banks. The shaded region shows the minimum-to-maximum range of the bank-level cost-of-equity average estimates.

Bank size and the NPL ratio dominates the contributions to the estimated CoE, on average, for unlisted banks.

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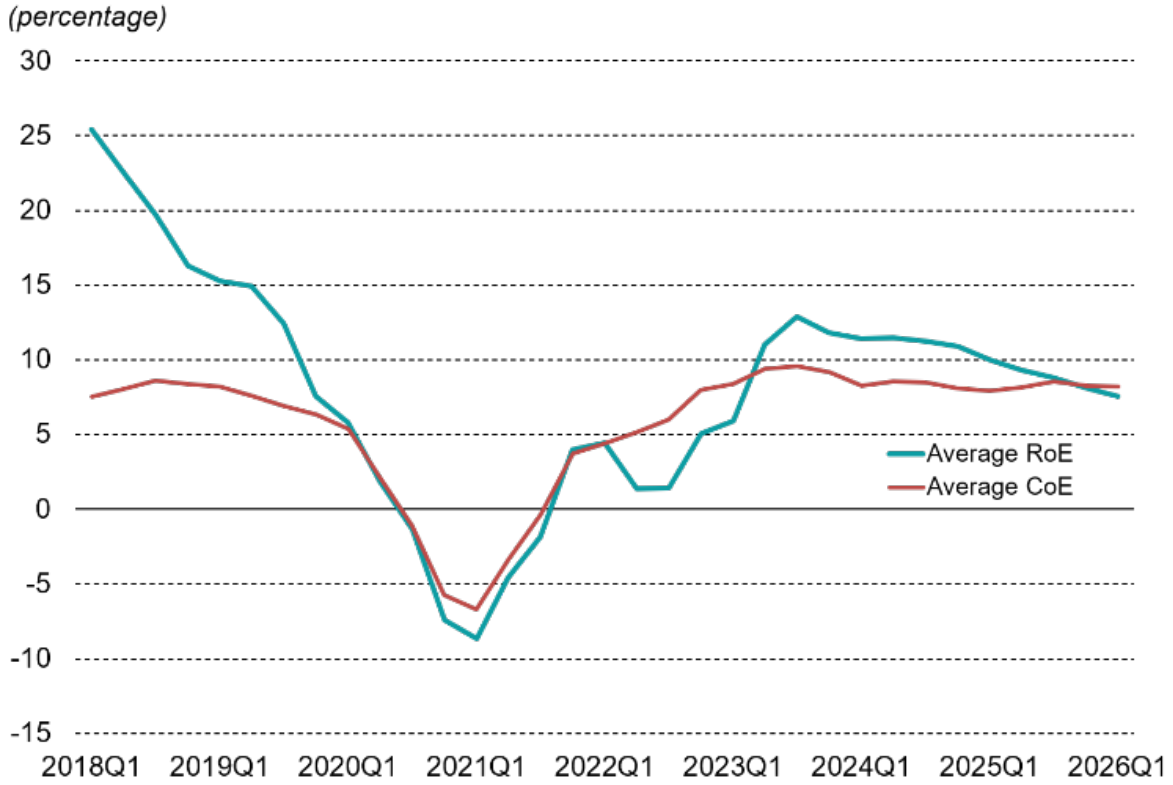
CoE and Profitability

- **For most banks in the sample, average profitability exceeded the estimated return required by shareholders, although the results varied across institutions and over time.**

- Over 2018–2026, average ROE of approximately 8.02% exceeded the corresponding average cost of equity at 5.76% for the six core banks (see Figure 4).

Figure 4: Core Banks: Fundamental-based CoE vs Profitability



Source: Central Bank of Malta calculations.
Note: The sample contains the six Maltese core banks. Average RoE and CoE are calculated as asset-weighted averages of the corresponding bank-level measures.

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International Comparison

- **EBA Report (June 2026):**
  - Around one third of surveyed banks report **CoE** of **8–10%**, while around 40% report **10–12%**, with their weighted average return on equity (**ROE)** standing at **9.9%** based on funding plan data.
  - The EBA (2026) identifies ***net interest income, operating expenses and credit impairments*** as important factors shaping banks' profitability.
  - In particular, the projected improvement in **ROE to 11.2%** by 2028 relies significantly on anticipated cost reductions, without which **ROE** would reach only **10.1%**.
  - *"This level and also wide distribution among banks indicate that **EU/EEA banks might at least partially still have challenges in meeting their cost of equity (CoE)**"*(EBA, 2026).
    - Only two banks, are covered in both this study and the EBA report.
    - As at 2026Q1, such banks have an average **CoE** at **10%** with an average ROE at **10.6%**.
- **Interpretation:**
  - Differences in methodology, bank coverage and reporting periods limit direct comparability.

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Conclusion

- This study estimates the **market-based CoE estimates for four banks listed** on the Malta Stock Exchange and uses its relationship with observable **bank fundamentals to infer CoE for three unlisted banks**.

- This analysis has shown that from 2018 onwards on average most core banks analysed had on **average a cost of equity estimate below the respective return on equity.**
  - Year-on-year CoE changes are primarily driven by **stable funding structure, NPL ratio and bank size**, with average profitability declining from 2018Q1 until 2021Q1 before rebounding and stabilising by 2026Q1.

- The CoE estimates are **broadly comparable** with those reported in the EBA's 2026 report.

- Future work could extend the analysis to the **cost of debt and the weighted average cost of capital, subject to data availability**.

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Thank you for your attention



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