A Macroprudential Look Into the Risk-Return Framework of Banks' Profitability

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① Research Questions

Macroprudential policy aims at minimizing the frequency and size of bank losses from episodes of systemic risk materialization. Then, two questions can arise:

- How does cyclical risk affect the distribution of future bank profitability?
- How can macroprudential policy be used to minimize the effects of cyclical risk on the left tail of bank profitability?

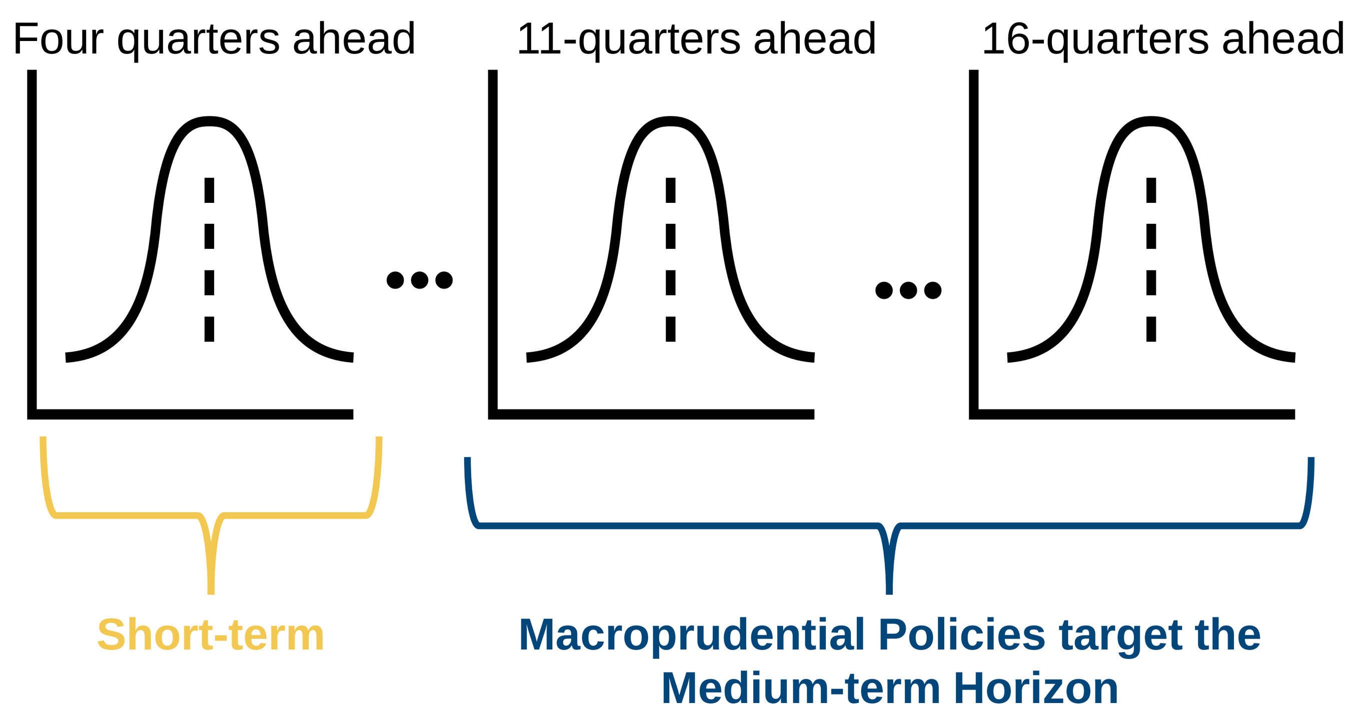
② Empirical Methodology

Data: Quarterly data for the largest Portuguese banks between 2001 and 2019

Controls variables	**Focus variables**
Bank level variables	Cyclical risk (d-SRI)
Real GDP growth	Capital resilience (TIER 1 ratio)

Dynamic Quantile Regressions with bank fixed effects

Future bank profitability distribution



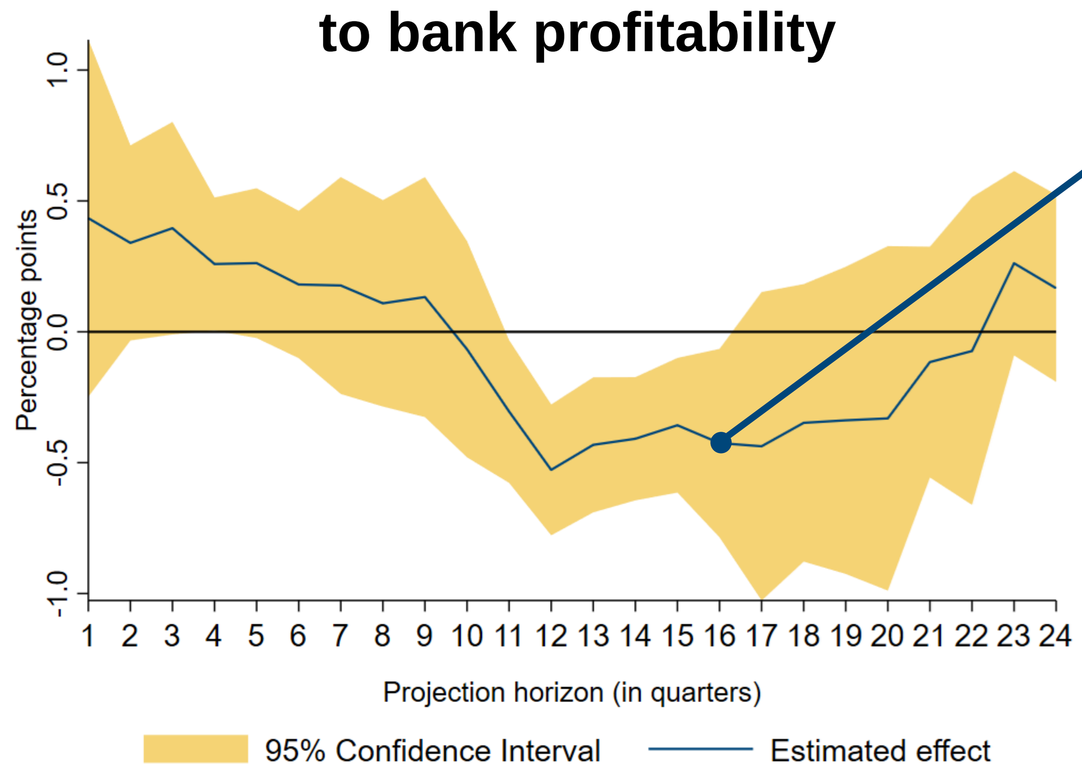
⑤ Key Findings

- Cyclical risk build-up shifts the whole distribution of bank profitability to the left in the medium term
- By increasing capital-based measures, the negative effect of cyclical risk on the left tail of the profitability distribution in the medium term can be reduced – however at the cost of lower expected profitability in the short term

③ Results | Quantile Regression

- Cyclical risk build-up increases tail risks to bank profitability in the medium terms

Effect of cyclical risk on tail risks to bank profitability



Variables	Estimate
TIER 1 ratio	-0.154**
d-SRI	-1.303***
d-SRI x TIER 1 ratio	0.092**

Costs of capital resilience:
Increasing capital when cyclical risk is low reduces medium-term bank profitability.

Benefits of capital resilience:
The negative effect of cyclical risk on medium-term profitability diminishes as bank capitalisation increases.

④ Results | Macroprudential policy through a risk-return framework

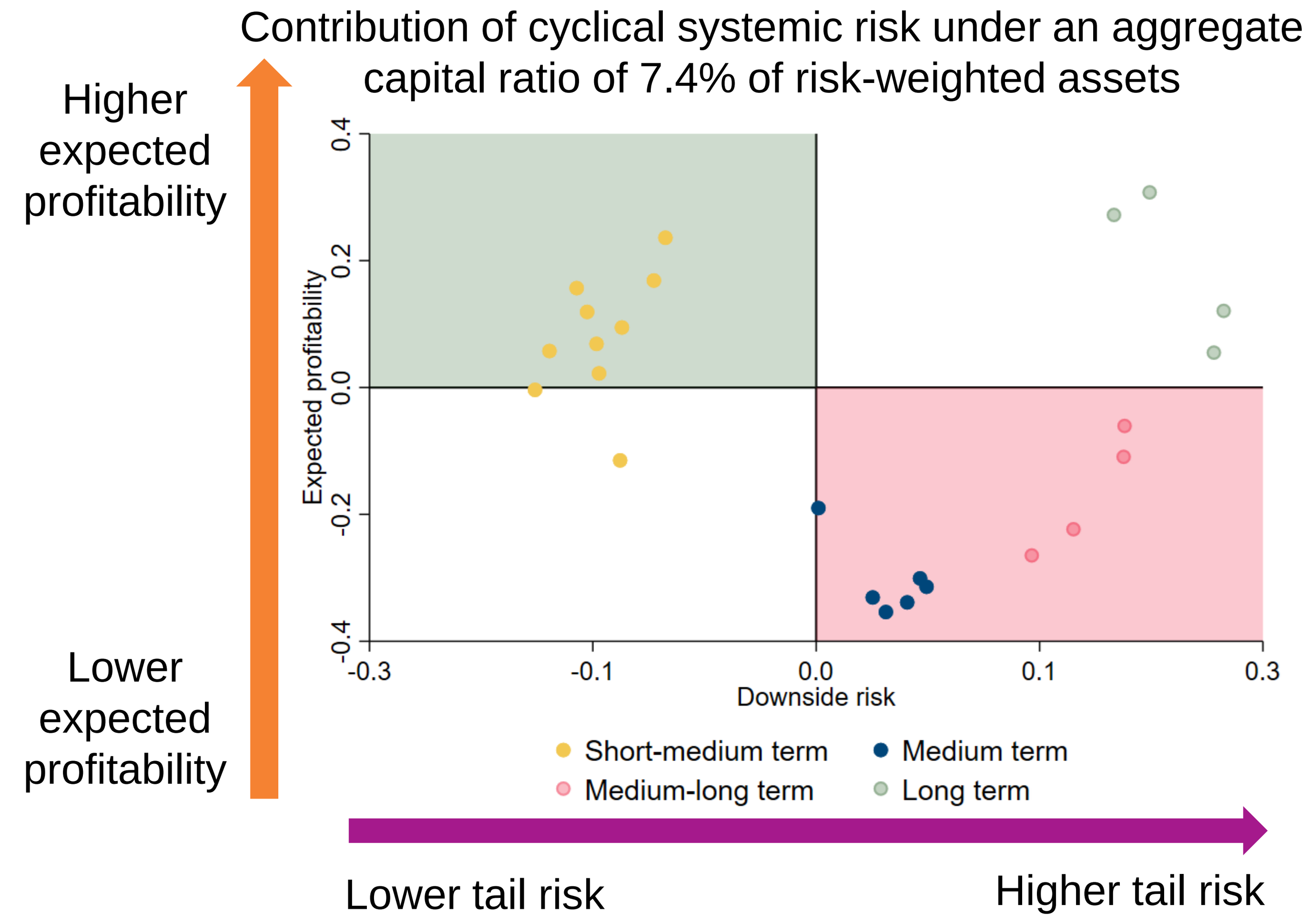
By increasing bank capital requirements, macroprudential policy can reduce tail risks to banks profitability. This reduction should be consistent with the policymakers' preferences, which can be any specific target or depend on the cost the policy action will have on expected profitability.

↑ **Capital requirements**	↓ **Downside risk/tail risk**
	↓ **Expected profitability**

Risk-return framework of banks' profitability in Q1 2006

- The prevailing level of cyclical risk contributed to **higher short-term expected profitability**
- While the low bank capitalization **increased tail risk to profitability in the medium term**

Contribution of cyclical systemic risk under an aggregate capital ratio of 7.4% of risk-weighted assets



What if the macroprudential authority had increased capital requirements by 2.6%?

- **Benefit**: Reduction of tail risk to profitability in the medium term
- **Cost**: Lower short-term expected profitability

Contribution of cyclical systemic risk under an aggregate capital ratio of 7.4 + 2.6% of risk-weighted assets