

EUROPEAN BANKS STRADDLING BORDERS: RISKY OR REWARDING?

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RSM - a force for positive change





Introduction

PORTFOLIO THEORY:

- Cross-border banking is beneficial as long as there is a non-perfect correlation across country-specific risks (“dissimilar countries”).

TWO BUILDING BLOCKS:

1. Gravity model

Where do banks go to? And are banks inclined to invest in countries that are economically dissimilar?

2. Risk-return model

Do banks benefit from investing in dissimilar countries?

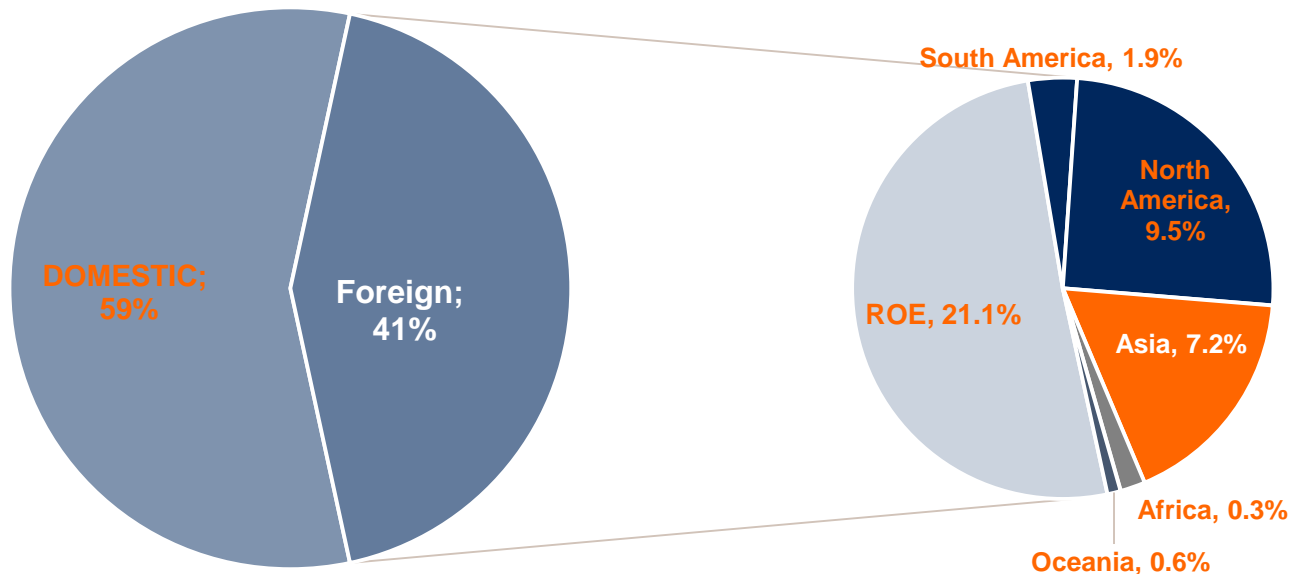
PRUDENTIAL POLICY IMPLICATIONS:

- Micro: diversification benefits at euro-area level; no need for local ringfencing
- Macro: dissimilarities – local application of macropru instruments



Data on banks' cross-border positions

- Unique dataset, from Annual Reports, stress tests & CRD IV country-by-country reporting
- 61 European banks over 2010-2017
- ~ 65% total European banking assets
- 138 host countries





Measure for geographical spread

- Herfindahl-Hirschman Index (HHI) measures geographical spread: $H = \sum_i s_i^2$
 - 0 – small share in each country i : $s_i \rightarrow 0$ (fully diversified)
 - 1 – all in same country i : $s_i = 1$ (no diversification)
- In the model, diversification index ($1 - \text{HHI}$) ranges from 0 to 1
 - 0 – no diversification
 - 1 – perfect diversification

Bank summary statistics

Bank descriptive statistics (2010-2017)

						GIIPSC	Focused	Diversified
	Mean	Median	10%	90%	St. Dev.	Mean	Mean	Mean
Total Assets (in €billion)	515	264	116	1,308	522	353	375	696
Tier 1 leverage (%)	4.95	4.81	3.09	6.66	1.77	5.73	4.88	5.05
ROA (%)	0.001	0.003	-0.004	0.007	0.009	-0.031	0.004	0.002
St. Dev. ROA	0.003	0.001	0.000	0.006	0.004	0.005	0.003	0.002
Z-score	71.6	45.7	7.9	163.7	83.9	33.2	70.5	73.0
Problem ratio (%)	6.91	4.0	0.7	16.9	8.4	15.7	7.4	6.3
Cost-to-income (%)	62.1	61.8	44.3	81.4	21.7	63.2	60.4	64.2
Diversification (1 – HHI)	0.45	0.43	0.10	0.81	0.27	0.37	0.21	0.68
Non-interest income (%)	23.5	22.6	8.6	37.6	12.4	24.7	22.8	24.4

(Dis)similarities

Structural and cyclical dissimilarity measures per continent

	Europe	South America	North America	Asia	Africa	Oceania
GDP per capita (in EUR)	23,555	4,195	36,046	14,134	2,385	45,006
Unemployment	10.3%	7.4%	7.7%	4.5%	12.6%	5.6%
GDP growth	1.7%	3.7%	2.2%	5.2%	4.2%	3.3%

- Structural dissimilarity: GDP per capita
- Cyclical dissimilarities: unemployment, GDP growth

Step 1: Where do banks go to?

Gravity model (explaining cross-border loans)

	GDP per capita		Unemployment		GDP growth	
Dissimilarity measure	-0.689*** (0.186)	-0.204* (0.109)	-0.054 (0.123)	0.012 (0.076)	0.010 (0.662)	-0.006 (0.393)
Home country FE	Yes	Yes	Yes	Yes	Yes	Yes
Host country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Home*host FE	No	Yes	No	Yes	No	Yes
R ² adj.	52.6%	73.5%	52.3%	75.5%	52.3%	73.5%
# Obs.	7,142	7,132	7,142	7,132	7,142	7,132

- Banks tend to invest in countries with a more similar (!) GDP per capita
- Banks do not invest in more dissimilar countries

Step 2: Do banks benefit from diversification?

Baseline specification			
	ln Z-score	ln σ (ROA)	ln ROA
Diversification index (1 - HHI)	7.491*** (2.753)	-8.395*** (2.571)	-0.001 (0.014)

- International diversification improves a bank's risk-return (z-score) and decreases its income variability (σ ROA)
- No significant impact on profitability (ROA)

Step 2: Do banks benefit from diversification into **dissimilar economies**?



Z-score (banks' risk-return)			
	GDP per capita	Unemployment	GDP growth
Diversification (general)	5.956** (2.449)	6.850*** (2.514)	5.535*** (2.058)
Diversification between similar and dissimilar countries	4.512 (3.530)	5.385*** (1.756)	3.018** (1.282)

σ ROA (income variability)			
	GDP per capita	Unemployment	GDP growth
Diversification (general)	-6.928*** (2.259)	-7.148*** (2.362)	-6.511*** (1.893)
Diversification between similar and dissimilar countries	-4.649 (3.103)	-5.709*** (1.679)	-3.612*** (1.128)

- Banks can increase the beneficial impact by diversifying more into countries with an economic cycle that differs from their home country
- but... mainly invest in similar countries



Policy implications

- Micro supervision
 - Individual banks: impact on banks
- Macro prudential supervision
 - Banking systems: differences between countries



Micro supervisory implications

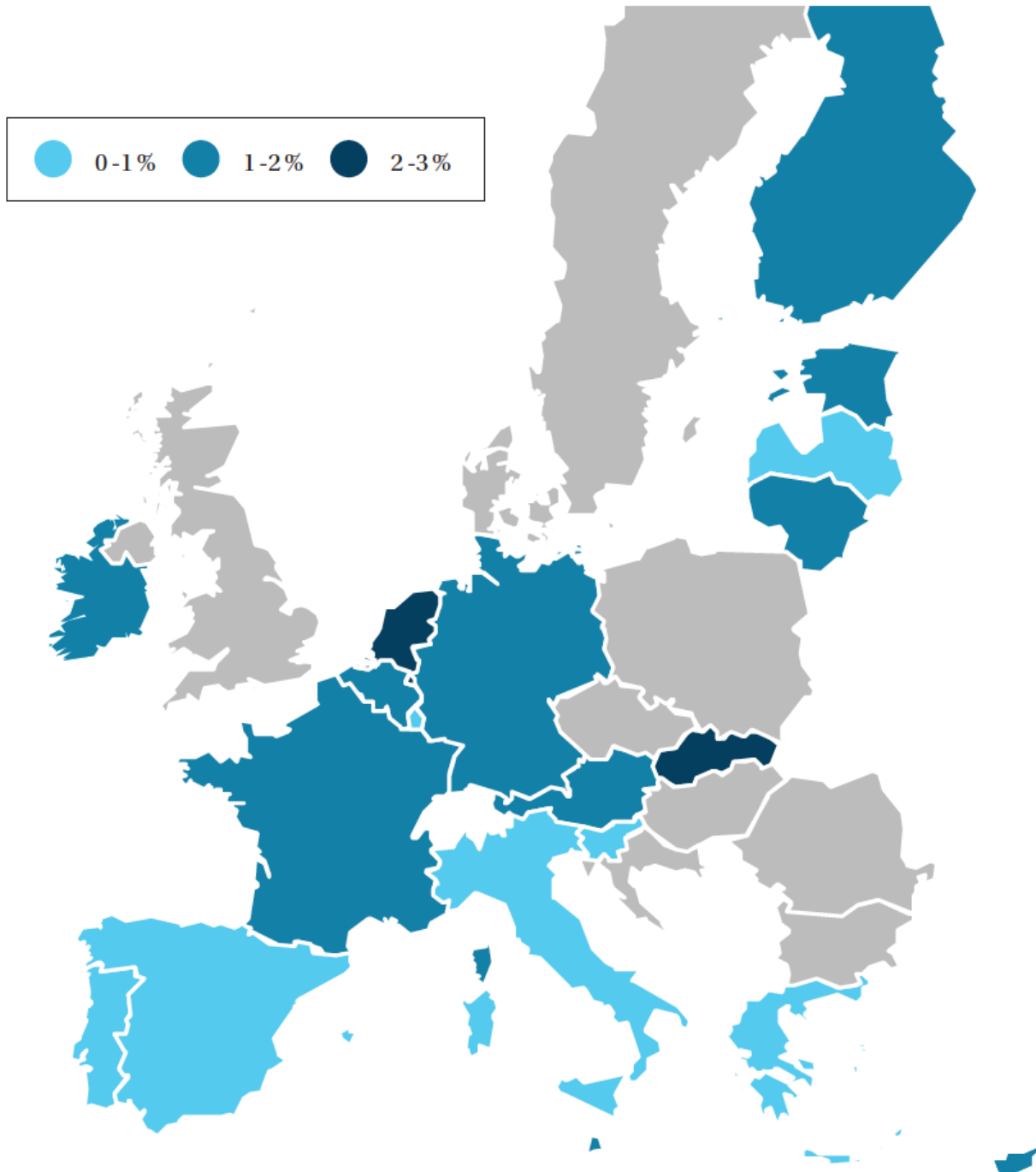
- Diversification effects
 - Benefit of cross-border banking
 - No need for compartmenting banks by
 - ❖ local liquidity requirements
 - ❖ local capital requirements
- In response to ring-fencing requirements
 - Banks may switch from sub to branch model (e.g. Nordea)



Macro prudential implications

- Dissimilarities between countries
 - National banking systems are in different macro 'state' of cycle
 - Justifies different application of macropru-instruments (based on a common methodology)
 - Application of cyclical macropru-instruments to location of assets
 - ❖ LTV-LTI instruments (borrower-based)
 - ❖ Countercyclical capital buffers
 - But what about structural macropru-instruments?
 - ❖ Domestic sifi-buffers: national or EA level?

Figure 6: Domestic systemic buffer requirements across the banking union (fully loaded)



- Data for 2016 - from Bruegel Blueprint 25, 'European Banking Supervision: The First Eighteen Months'
- We could not find justification for large differences



Systemic risk buffers

- Basel III reforms of December 2017
 - 50% of G-SIB buffer is added to leverage ratio
- Proposal for the EA - Do the same for E-SIB buffer
 - E-SIBs are European systemically important banks (e.g. EA banks > 150 bn in assets; Schoenmaker and Véron, 2016)
 - Develop common E-SIB methodology (by ECB with NCAs)
 - Apply E-SIB buffer to E-SIBs (by ECB with NCAs)
 - Add 50% of E-SIB buffer to leverage ratio

Table 1: Institutions subject to European banking supervision (end-2015)

Size	Number of banks	Assets (billions)	% of all euro area banks' assets	CET1 ratio in %	Leverage ratio in %
G-SIBs (> €800bn assets)	8	€ 10,866	39.2	12.3	4.5
E-SIBs (> €150bn)	22	€ 7,253	26.1	14.0	5.1
Other EA SIs (€3-150bn)	70	€ 3,999	14.4	16.6	5.6
Significant subs/branches (€3-302bn)	29	€ 940	3.4	n.a.	n.a.
LSIs (all < €30bn)	3,167	€ 4,689	16.9	n.a.	n.a.
All euro-area banks	3,296	€ 27,747	100.0	n.a.	n.a.



Conclusions

- Cross-border banking matters
 - Diversification benefits
 - No impact on returns
- Micro prudential:
 - Manage at euro-area level; no ring-fencing
- Macro prudential:
 - Cyclical at national level
 - Structural at euro-area level



References

- Duijm, P. and D. Schoenmaker (2017), 'European Banks Straddling Borders: Risky or Rewarding?', CEPR Discussion Paper No. DP12159.
- Schoenmaker, D. and N. Véron (2016), *European Banking Supervision: The First Eighteen Months*, Blueprint 25, Bruegel, Brussels.
- Schoenmaker, D. and P. Wierds (2016), 'Macroprudential Supervision: From Theory to Policy', *National Institute Economic Review*, 235, 50-62.