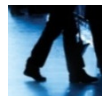
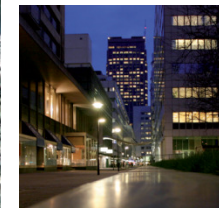


The Benefits of Relationship Lending in a Cross-Country Context: A Meta-Analysis

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MOTIVATION (I)

- The context: Relationships in financial contracting
- Our focus: Relationship lending
 - Lending technology (e.g., Berger and Udell, 2006)
 - Relevance for SME finance (e.g., Petersen and Rajan, 1994): Informational asymmetry, financing constraints, bank dependence and default risk
 - The theoretical and empirical literature has found rather mixed evidence on the bright and dark side of relationship lending (Boot 2000; Elyasiani & Goldberg 2004; Degryse & Ongena 2008)
 - Bright side: Improved monitoring, liquidity insurance, renegotiation and distress resolution, intertemporal pricing
 - Dark side: Hold-up & lock-in, soft budget constraint
- Boot (2000): *“We are just beginning to learn about the real benefits of bank-customer relationships. Substantial ambiguity remains.”*



MOTIVATION (II)

- Our research questions
 - Which side of relationship lending dominates?
 - Which factors drive the effects in a cross-country context?

- Our strategy: Meta-analysis
 - Widely used in many fields of sciences (e.g. Hedges & Olkin, 1985; Lipsey and Wilson, 2001; Borenstein et al., 2009), relatively rare in finance
 - Quantitative method
 - More observations
 - Consider sampling errors, characteristics and various data sources
 - We hand-collect and synthesize detailed information from empirical studies on relationship lending from different countries



HYPOTHESES (overview)

- H1: *Strong bank-borrower relationships are associated with beneficial lending outcomes for the borrower.*

- H2: *The likelihood of beneficial effects of relationship lending for borrowers are greater in countries with ...*
 - *High bank competition (e.g., Boot & Thakor, 2000)*
 - *Bank-based financial systems (e.g., Allen & Gale, 2000)*
 - *...*

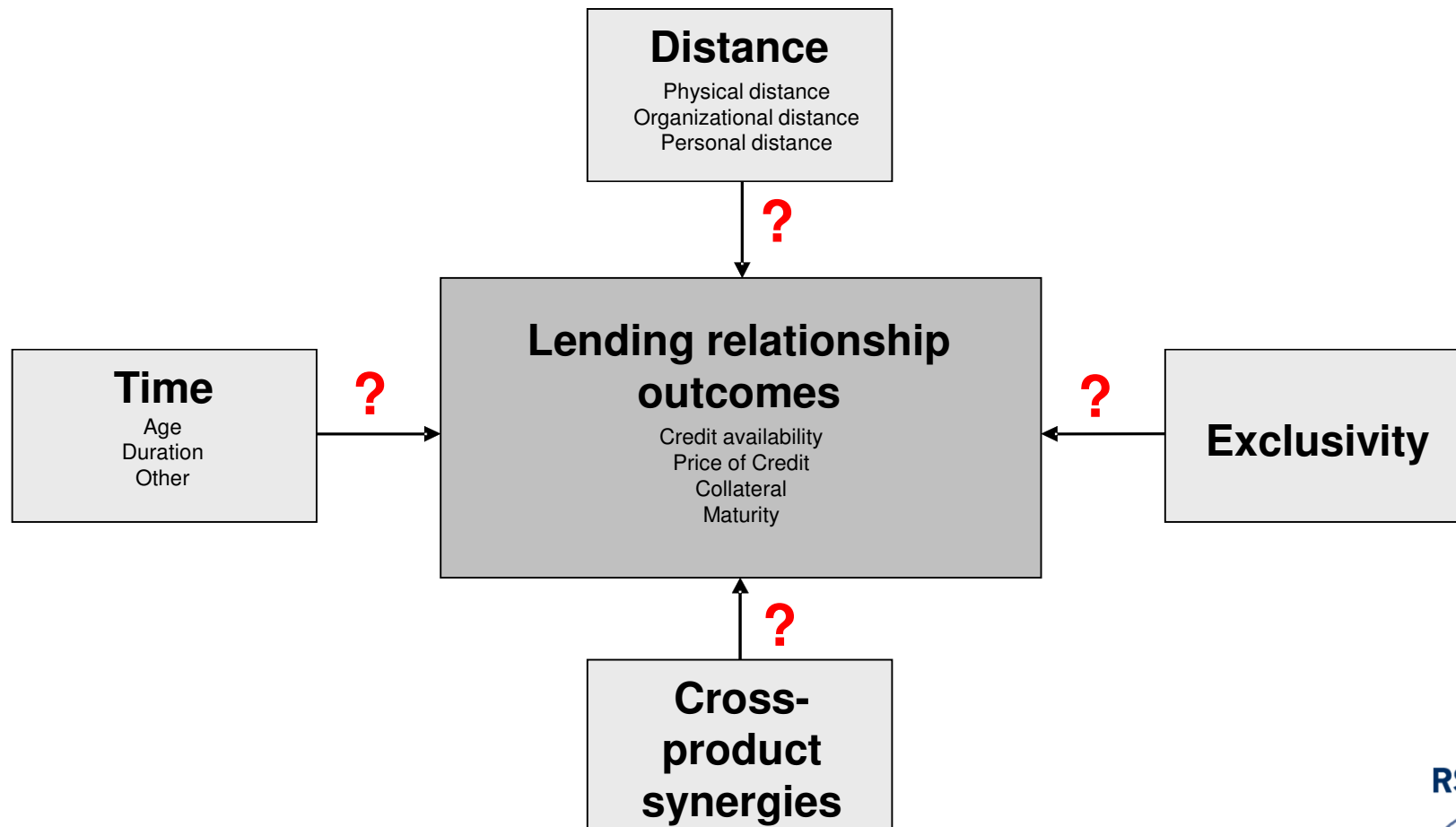


THE CONCEPTUAL FRAMEWORK

Effects of relationship lending

- 4 dimensions of the strength of bank relationships
- 4 lending relationship outcomes

“Effect:” sign and significance of a regression coefficient





DATA (I)

- Literature search strategy & study selection
 - Database search: ISI Web of Knowledge, Scopus, ScienceDirect, JSTOR, ABI/Inform, and SSRN
 - Reverse lookup from survey articles: Boot (2000), Elyasiani and Goldberg (2004), and Degryse & Ongena (2008)
 - Filter rules: compatibility (empirical methodology, measurement, and time period), proxies of the strength of relationship lending and lending relationships outcomes
- Final sample
 - 101 studies
 - 129 study and country-level variables: \approx 300,000 data points
 - 2,968 effects based on 4.1 million firm-time observations



DATA (II)

Sample composition

Publication status		Region		Development sta		Data source		Focus on rel. lending	
Published studies	75	US	35	Developed	87	Firm survey	45	Main focus	62
of which		Europe	43	Emerging	14	Proprietary bank data	23	Secondary focus	39
Banking journals	21	Other regions	23			Other	33		
Other journals	54								
Non-published studies	26								
Total	101		101		101		101		101

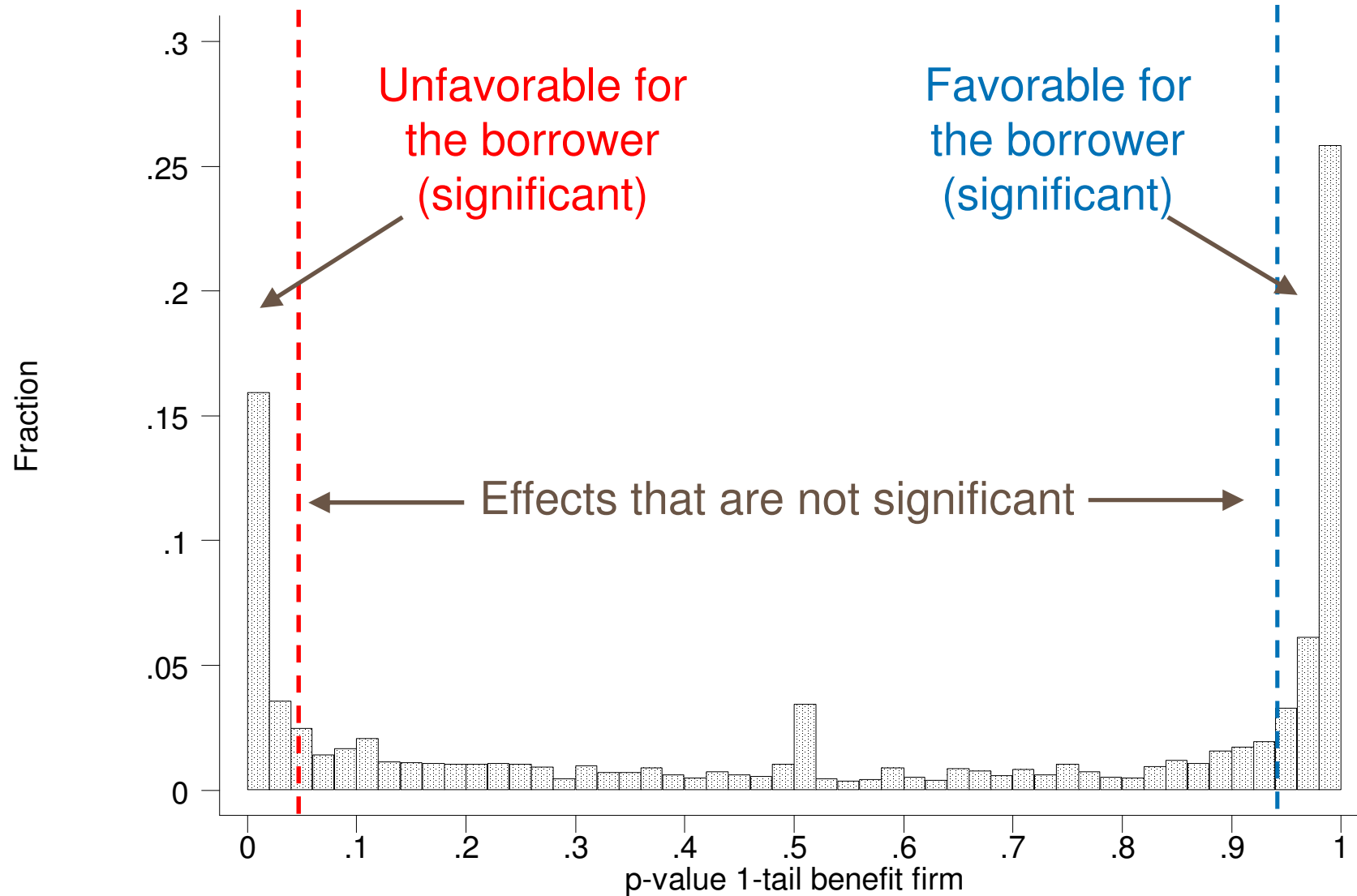
Sample summary

	Mean	Median	Min	Max	Stdev
Publication year	2005.32	2006	1994	2012	4.62
Sample period mid-year	1996.61	1997	1978	2008	5.23
Author affiliation ranking	119	139	5	246	62
Journal impact factor	1.263	0.807	0.146	4.602	1.032
Number of citations	49.79	8	0	563	104.81
Firm count	9,994	1,800	100	368,977	41,802
Observation count	44,176	1,500	139	2,078,434	227,522

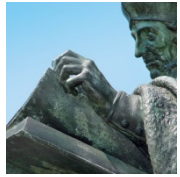
RESULTS H1: FREQUENCY & DIRECTION OF EFFECTS (continuous)



Histogram of adjusted p-values

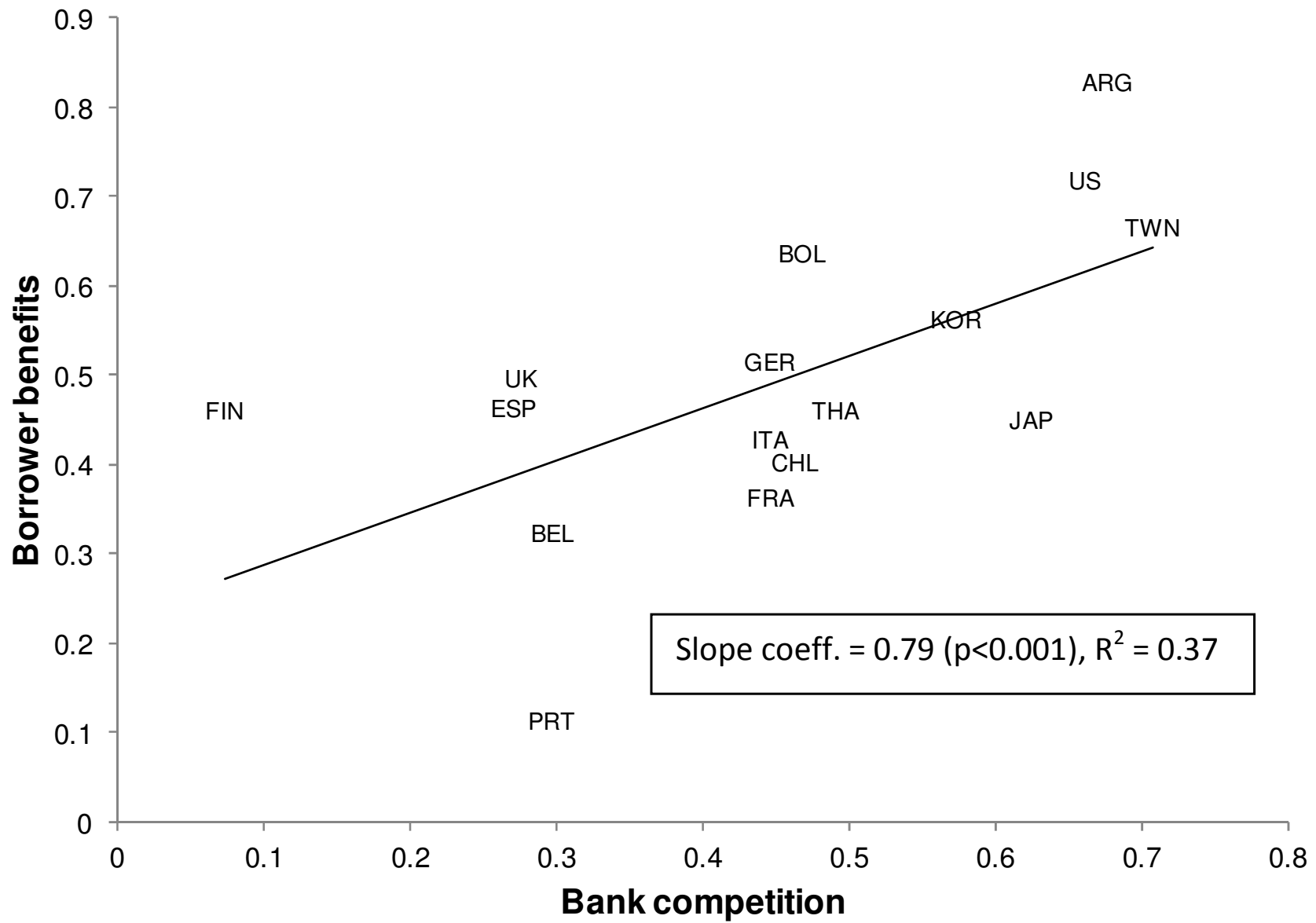
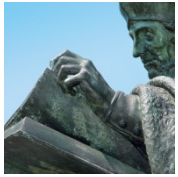


RESULTS H1: FREQUENCY & DIRECTION OF EFFECTS (discrete)

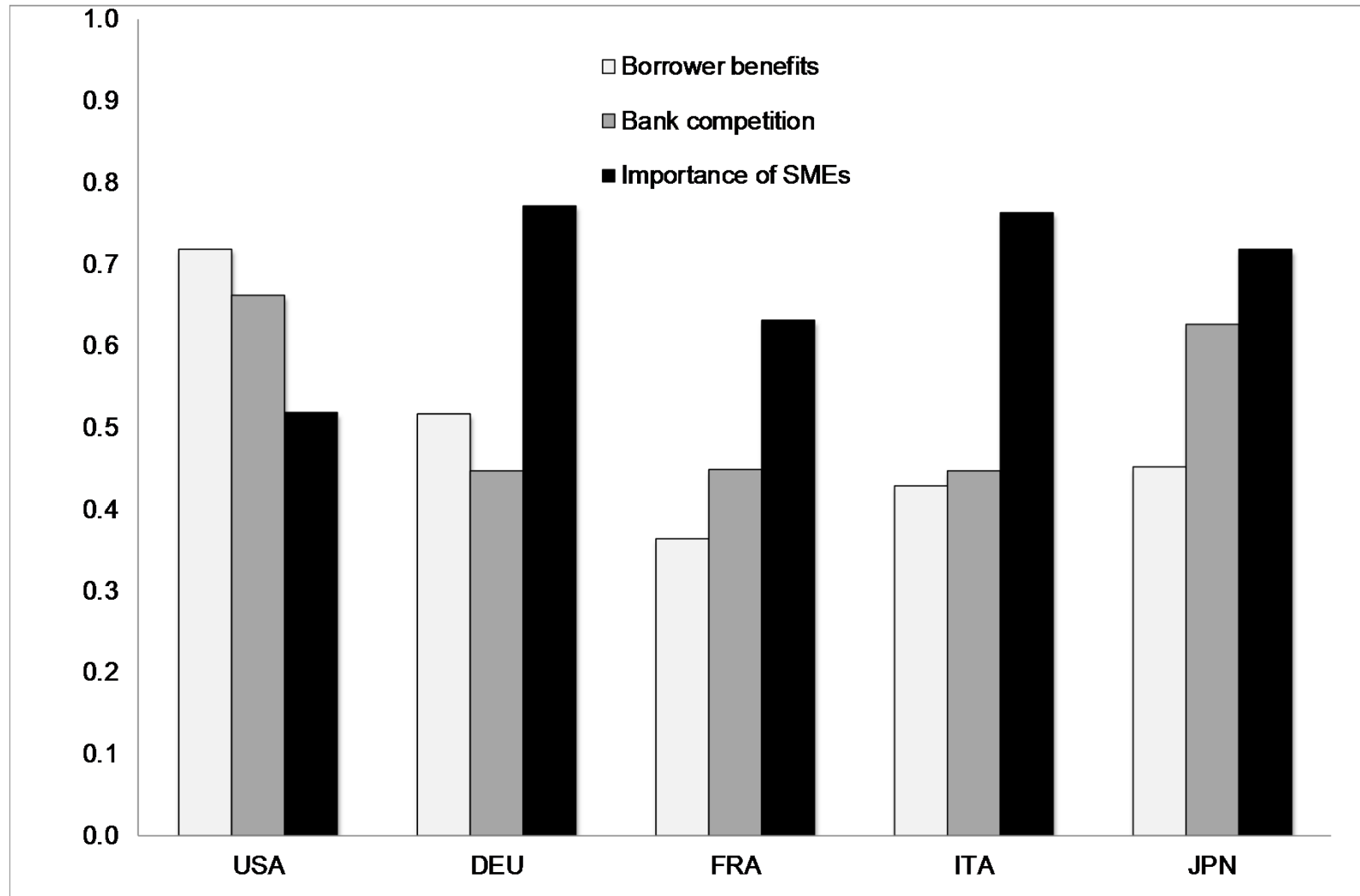


		Relationship lending outcomes					
Strength of relationship lending		Coeff sign	RATE	VOL	COLL	MAT	
TIME	TDUR	+	67	74	17	2	
		-	102 ***	27 ***	33 **	11 ---	
		ns	114	56	58	10	
	TAGE	+	17	70	17		
		-	48 ***	20 ***	21	---	
		ns	135	93	37	13	
	TOTIME	+	7	31		7	
		-	14	20	6 ---		
		ns	39	36	3	1	
EXCL	+	137	132	46			
	-	225 ***	99 **	22 ***	2 ---		
	ns	188	177	49	9		
CROSS PROD	+	4	72	9	4		
	-	114 ***	15 ***	12	---		
	ns	86	59	17	11		
DISTANCE	DISTPHYS	+	5	29			
		-	31 ***	23		---	
		ns	31	44		5	
	DISTORG	+	1	31	2		
		-	1 ---	14 **	9 ---		
		ns	4	22	1		
	DISTPERS	+		7			
		-	4 ---			---	
		ns	1	2			

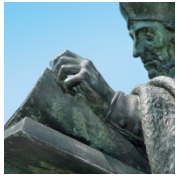
RESULTS H2: BANK COMPETITION & RELATIONSHIP OUTCOMES



RESULTS H2: BENEFITS AND PREVALENCE OF REL. LENDING



RESULTS H2: META-REGRESSION WITH BANKING ENVIRONMENT & COUNTRY CHARACTERISTICS



Method:	Logit, pooled			Tobit, panel with random effects			Logit, pooled			Robust meta-regression with dep. effect sizes		
Dep. Var:	(1)			(4)			(3)			(4)		
	Binary borrower			1-tailed p-value			Binary borrower			Fisher's z score		
	Coeff.	z-stat	sig.	Coeff.	z-stat	sig.	Coeff.	z-stat	sig.	Coeff.	t-stat	sig.
Developed status	-0.09	-0.20		-0.05	-0.50							
Bank deposits / GDP	-1.58	-3.12	***	-0.20	-2.35	**						
Bank competition	3.52	4.32	***	0.63	5.03	***						
Corruption index	0.39	2.10	**	0.04	1.23							
Bank cost-income ratio	-1.46	-1.31		-0.11	-0.63							
Inflation	-0.10	-1.28		-0.02	-1.44							
Dregion_Other							-1.50	-3.33	***	-0.04	-2.19	**
Dregion_Europe							-1.78	-5.75	***	-0.03	-3.13	***
Ln no. of observations	0.02	0.31		0.01	0.73		-0.06	-1.20		0.00	-0.12	
Constant	3.44	2.44	**	1.05	4.08	***	2.55	4.48	***	0.04	2.00	**
Controls for relationship lending outcomes	Yes			Yes			Yes			Yes		
Controls for relationship strength proxy	Yes			Yes			Yes			Yes		
Number of studies	82			83			94			95		
Number of observations	1,467			2,608			1,596			2,871		
McFadden Adj R2	0.17			0.12			0.16					
Tau2										0.004		

Reference region = USA



FURTHER ANALYSES AND ROBUSTNESS TESTS

Further analyses

- IV regression: Potential endogeneity of RL outcomes & lending environment (instruments: legal origin / latitude)
- Control for legal institutions (creditor rights, rule of law, legal structure and property rights)
- Study variables and publication bias
- Direction of borrower benefits: multinomial logit 3-effect outcomes
- By lending outcomes and relationship strength proxies
- Determinants of non-significant effects

Robustness tests

- Best set sub-sample
- Split sample by (i) the US and the rest of the world and (ii) data years
- Control for (N)SSBF survey
- Control for the data source (firm survey, proprietary bank data, other)
- Multiplicative controls: 4 RL outcomes x 8 RL strength proxies
- Alternative proxies for country characteristics



CONCLUSION

- Large heterogeneity in theoretical and empirical literature on the benefits of relationship lending (RL)
- Our meta-analysis suggests that borrowers benefit from RL
 - Time, exclusivity, and cross-product synergies significantly associated with higher credit availability and lower loan rates
 - Evidence on collateral and maturity remains inconclusive, some evidence of hold-up problem
- Structure of bank lending environment matters
 - Borrower benefits more likely in countries with high bank competition and lower levels of bank deposits over GDP
 - Borrower benefits are more likely in the United States compared to Europe and the rest of the world
- But: The prevalence of RL does not imply borrower benefits