Creditor Rights and Bank Lending:

The Role of Country Size

- Laws and regulations on creditor rights are among the most important set of restrictions on the functioning of the banking system in general, and credit relationships in particular.

- Djankov, McLiesh, and Shleifer (2007)

- Qian and Strahan (2007) and Bae and Goyal (2009)

- Acharya, Amihud, and Litov (2011), Mann (2018)

- In this study, we revisit the effect of creditor rights on bank lending, predominantly the negative effect on loan pricing (spreads), which is the first clear-cut effect identified in the literature.

- Theoretical relationship:
  - Stronger creditor rights →ease loan supply concerns of banks
    →loan S curve shifts to the right

- Using global data on syndicated loans, we first replicate the baseline results of Qian and Strahan (2007) and Bae and Goyal (2009), especially concerning the negative effect of stronger creditor rights on loan spreads.

- Negative effect of creditor rights on loan pricing (loan spreads over the risk-free rate)
  - This is the dependent variable in most of the studies using syndicated loan data (e.g., Ivashina, 2009; Delis, Hasan, and Ongena, 2022).

Data

- Syndicated loans from DealScan, from 1994 to 2003

- Creditor rights index of Djankov, McLiesh, and Shleifer (2007). This matching process yields a maximum of 84,360 observations, corresponding to 47,156 unique loan facilities, given to 18,022 firms (headquartered in 72 countries) by 3,165 banks.

- $Spread_{lbfct} = b' + b_1 CR_{ct} + b_2 C_{lbfct} + u_{lbfct}.$

- We observe the spread over the risk-free rate of loan facility *l*, given in year *t* by bank *b* to firm *f*, which is headquartered in country *c*. *CR* is the country-year index of creditor rights, *C* is the vector of control variables that have different dimensions, and *u* is the disturbance.

Table 1. Summary statistics

The table reports summary statistics (number of observations, mean, standard deviation, minimum, and maximum) for the variables used in our empirical analysis. The variables are thoroughly defined in Appendix Table A1.

Variable	Obs.	Mean	Std. dev.	Min.	Max.
Loan spread	84,360	167.13	120.75	1.50	631
Creditor rights	84,360	1.72	1.17	0	4
Financial borrower	84,360	0.17	0.38	0	1
Borrower’s country rating	84,360	2.96	3.81	1	22
Borrower’s country GDP	84,360	10.36	0.62	7.76	11.30
Facility amount	84,360	18.35	1.85	0.00	24.00
Maturity	84,360	50.93	35.58	0.00	480.00
Number of lenders	84,360	11.82	11.04	1.00	110.00
Collateral	84,360	0.40	0.49	0.00	1.00
Borrower’s size	45,236	7.96	2.75	0.00	24.15
Borrower’s EBIT	44,751	0.06	0.11	-5.89	1.70
Borrower’s M/B	33,123	3.36	20.29	0.00	943.08
Borrower’s asset tangibility	43,987	0.32	0.25	0.00	0.99
Borrower’s country size	84,360	5.29	4.40	0.00	16.38
Borrower’s country ethnic fract.	79,263	0.42	0.17	0.01	1.00
Borrower’s regional risk-taking	59,078	0.11	0.26	-1.45	1.45
Borrower’s regional trust	59,078	0.09	0.27	-2.31	1.12

Table 2. Replication of existing studies and beyond

The table reports coefficient estimates and standard errors (in parentheses) from estimations of equation 1. The sample period is 1994-2003. The dependent variable is Loan spread. Definitions for all variables are in Appendix Table A1. Estimation method is OLS on the fixed effects model, with robust standard errors clustered by country. All specifications include loan type, loan purpose, and year fixed effects, while specification 6 also includes country fixed effects. All specifications use the full sample of available countries, except from specifications 3 and 4 that use the same countries as in Bae and Goyal (2009). The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6	7	8	9
Creditor rights	-16.45**	-20.13***	-20.25***	-14.79***	-4.106	51.71***	-84.66**	52.78	-36.10**
	(6.392)	(6.564)	(6.389)	(5.125)	(5.382)	(15.48)	(22.01)	(26.23)	(15.40)
Financial borrower	-29.73***	-24.98***	-25.10***	-7.276**	-31.84***	-25.41***	-7.663	-20.84	-44.66
	(6.325)	(4.764)	(5.007)	(3.119)	(6.090)	(4.245)	(13.21)	(12.83)	(9.499)
Borrower’s country rating	5.656**	5.939**	3.813*	4.542	7.099***	5.702***	17.71***	9.502*	-12.78
	(2.512)	(2.377)	(2.181)	(2.738)	(2.369)	(1.689)	(2.396)	(2.679)	(2.643)
Borrower’s country GDP	27.36**	32.17***	25.09*	26.88*	12.07	-94.49	69.01**	6.065	-555.6**
	(11.58)	(11.44)	(13.80)	(15.13)	(12.12)	(85.02)	(17.47)	(38.40)	(23.87)
Facility amount	-11.51**	-13.94**	-14.50**	-5.749	-11.43**	-15.99***	-9.033**	-10.55	-36.67**
	(4.926)	(5.907)	(6.131)	(4.692)	(5.015)	(3.817)	(3.110)	(3.631)	(2.359)
Maturity	-0.202***	-0.262***	-0.207***	-0.280***	-0.128**	-0.0559	-0.259	0.0311	-1.400**
	(0.0546)	(0.0760)	(0.0715)	(0.0483)	(0.0504)	(0.0413)	(0.215)	(0.0695)	(0.101)
Number of lenders	-1.225***	-1.231**	-1.156**	-0.285	-0.766***	-0.254**	0.477	0.326	1.681*
	(0.319)	(0.514)	(0.538)	(0.364)	(0.242)	(0.107)	(0.448)	(0.300)	(0.172)
Collateral	73.07***	73.60***	73.04***	80.02***	63.18***	57.58***	64.76***	55.11**	29.55
	(4.443)	(4.149)	(4.610)	(4.173)	(6.637)	(8.324)	(7.461)	(7.090)	(7.237)
Borrower’s size				-8.084***					
				(1.743)					
Borrower’s EBIT				-111.4***					
				(6.065)					
Borrower’s M/B				0.0364					
				(0.0374)					
Borrower’s asset tangibility				0.181					
				(3.773)					
Unites States dummy					67.90***				
					(9.595)				
Observations	84,360	47,170	44,751	15,306	84,360	84,358	4,134	3,427	703
Clusters	72	72	36	36	72	70	5	3	2
Adjusted R-squared	0.488	0.476	0.488	0.539	0.514	0.574	0.605	0.433	0.691

- A key development in our setting is that we experiment with more than 200 control variables varying by country or country-year. The main source of these variables is the QoG database (Teorell et al., 2023).

- Most of them (especially variables capturing institutions and countries’ legal origin, Djankov et al.): coefficient remains the same.

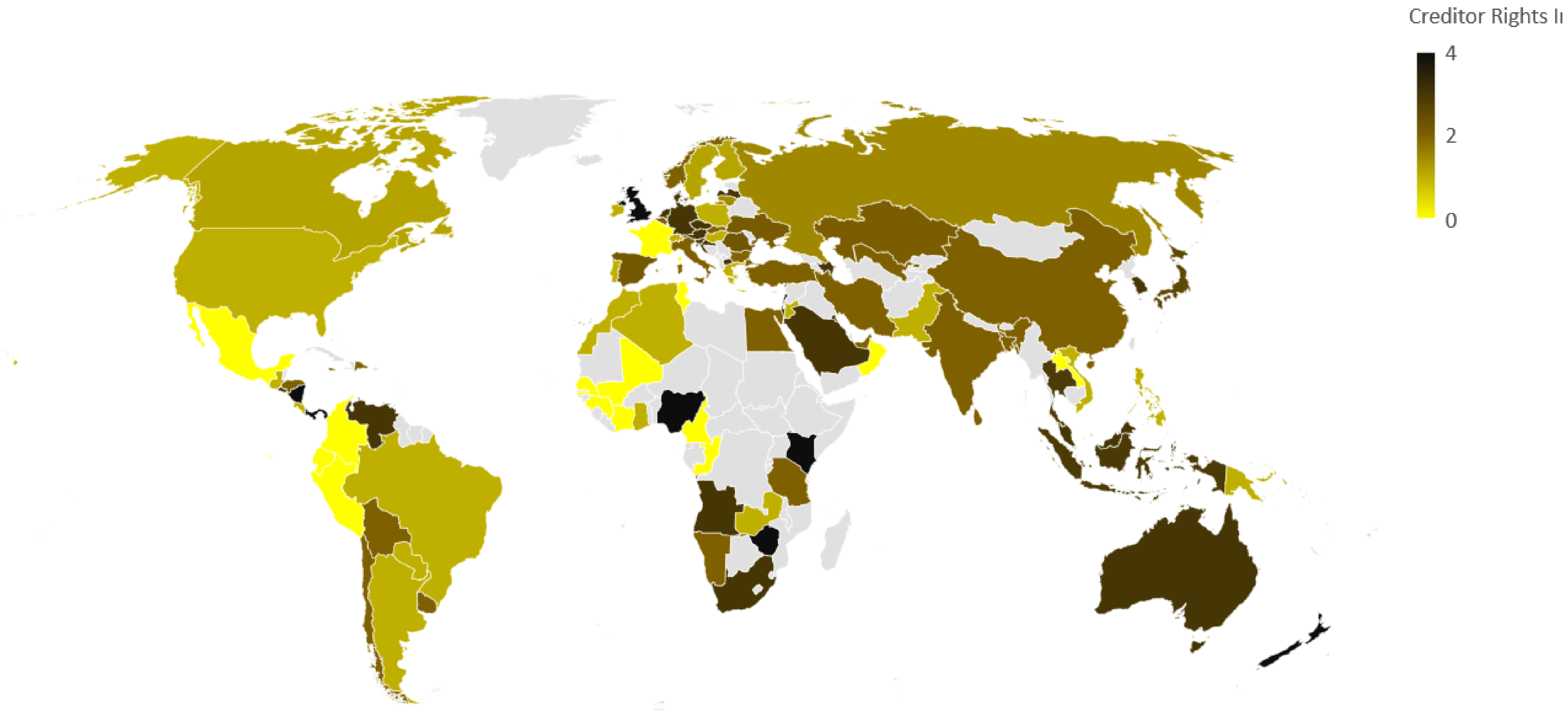
- We find that country size positively affects loan spreads and overshadows the effect of other relevant explanatory variables on loan spreads. It renders the relation between creditor rights and bank lending statistically insignificant.

Table 3. The role of country size

The table reports coefficient estimates and standard errors (in parentheses) from estimations of equation 1. The sample period is 1994-2003. The dependent variable is Loan spread. Definitions for all variables are in Appendix Table A1. Estimation method is OLS on the fixed effects model, with robust standard errors clustered by country. All specifications include loan type, loan purpose, and year fixed effects, while specification 6 also includes country fixed effects. All specifications use the full sample of available countries, except from specifications 3 and 4 that use the same countries as in Bae and Goyal (2009). The lower part of the table also reports the number of observations, number of clusters, and the adjusted R-squared. The ***, **, and * marks denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	1	2	3	4	5	6
Creditor rights	-3.321	-1.721	-3.257	-4.186	-2.088	51.71***
	(5.710)	(6.536)	(6.619)	(5.603)	(5.276)	(15.48)
Country size	7.827***	8.689***	8.288***	5.559***	6.467**	
	(1.198)	(1.241)	(1.531)	(1.408)	(2.724)	
Financial borrower	-29.05***	-23.99***	-23.81***	-9.462**	-29.77***	-25.41***
	(5.082)	(4.009)	(4.122)	(3.666)	(5.316)	(4.245)
Borrower’s country rating	6.741***	7.761***	5.673***	5.093**	6.963***	5.702***
	(1.882)	(1.699)	(1.797)	(2.379)	(1.925)	(1.689)
Borrower’s country GDP	21.41	25.73*	11.03	10.19	18.09	-94.49
	(12.93)	(13.27)	(14.49)	(15.31)	(13.43)	(85.02)
Facility amount	-12.26**	-15.58***	-15.79***	-6.900*	-12.11**	-15.99***
	(4.824)	(5.196)	(5.395)	(4.042)	(4.878)	(3.817)
Maturity	-0.0857*	-0.122***	-0.108***	-0.217***	-0.0848*	-0.0559
	(0.0444)	(0.0277)	(0.0263)	(0.0549)	(0.0448)	(0.0413)
Number of lenders	-0.614***	-0.734***	-0.747**	-0.0282	-0.590***	-0.254**
	(0.190)	(0.275)	(0.300)	(0.238)	(0.180)	(0.107)
Collateral	61.25***	65.80***	67.21***	74.99***	60.49***	57.58***
	(7.280)	(4.664)	(4.025)	(3.515)	(7.753)	(8.324)
Borrower’s size				-7.147***		
				(1.346)		
Borrower’s EBIT				-114.0***		
				(6.507)		
Borrower’s M/B				0.0370		
				(0.0378)		
Borrower’s asset tangibility				-3.292		
				(2.940)		
Unites States dummy					19.32	
					(23.89)	
Observations	84,360	47,170	44,751	15,306	84,360	84,358
Clusters	72	72	36	36	72	70
Adjusted R-squared	0.525	0.505	0.506	0.547	0.526	0.574

- The coefficient on country size is positive and highly statistically significant, implying that firms in larger countries pay higher loan spreads.
- In fact, the economic effect of country size dominates all country-specific (time-variant or time-varying) explanatory variables, even though country size is not used in the literature explaining loan pricing in the global syndicated loans market.
- We also examine if country size is correlated with unobserved country characteristics that also correlate with loan pricing.
- Instrument: Land productivity
  - is exogenous to human intervention, it is predetermined, and satisfies the exclusion and relevance conditions: it is uncorrelated with loan spreads and strongly and negatively correlated with country size.
- The effect of country size remains almost intact when using an instrumental variable (IV) method.



The creditor rights index takes values from 0 to 4, with higher values reflecting stronger creditor rights.
There is a negative correlation between country size and creditor rights.

Why Controlling for Country Size Eliminates the Effect of Creditor Rights

- First, and related to the analysis of section I, absent a control for country size, the effect of creditor rights might simply capture more loans in larger countries (sampling weight as the inverse of loans by country and year).
- Second, related, and most important, the effect of country size might capture countries' preferences toward economic risk-taking. This would also imply that low creditor rights are an endogenous decision of large countries due to their specific characteristics.
- Alesina, Spolaore, and Wacziarg (2005) suggest that large country size has two important drawbacks for economic outcomes: (i) large administrative and congestion costs and (ii) population heterogeneity.
- Controlling for administrative costs (e.g., government expenditure to GDP, expenditures for health, education, institutional quality, etc.) does not affect our inferences. In contrast, we find that population heterogeneity (ethnic fractionalization and different subnational economic preferences) largely explains the impact of country size on loan spreads.

Why controlling for country size eliminates the effect of creditor rights

- We introduce the interaction term between country size and ethnic fractionalization and find that the positive effect of country size is stronger for more ethnically fractionalized countries.

- Alesina, Spolaore and Wacsiarg (2005) note that fractionalized countries bear higher economic risks.

- We find that in the corporate market, this risk is priced by banks to produce higher loan spreads.

Does pricing of risk in large countries ease with culture of risk-taking and trust?

We use information on economic preferences for risk-taking and trust, which are calculated for subnational regions worldwide with data from a large global survey on 80,000 individuals from 76 countries (Falk et al., 2018). We then hand-match the location of firms' headquarters to these subnational regions.

We then use the interaction terms

Country size*Regional-risk-taking

Country size*Regional trust

We find that the positive effect of country size is weaker in countries with a culture of high risk-taking preferences and countries with trust in their subnational regions.

Contribution

- First, we show the importance of country size as an explanatory variable of bank lending decisions in the global syndicated loans market, especially vis-à-vis the established effect of creditor rights (but also vis-à-vis other country-specific controls).

- Second, we show that the key mechanisms driving the effect of country size are:
  - (i) ethnolinguistic fractionalization, which amplifies the effect of country size and is priced as risk in syndicated loan markets
  - (ii) economic preferences for risk-taking and trust, which mitigate the positive effect of country size on loan spreads.