Internet Appendix to
"Collateral Spread and Financial Development"[*]

This online appendix serves as a companion to our paper "Collateral Spread and Financial Development." It reports results not reported in the main text due to space constraints. We present results in the order they appear in the main paper.

1. Table IA.I reports the sample distribution by industry classification.

2. Table IA.II reports summary statistics for key variables in the loan-level data from Argentina that also provides information on firm financials. While the dataset is a panel over 1995 to 2001, summary statistics are reported after taking the time-series average of each firm, thus leaving us with 587 observations (one for each firm).

3. Table IA.III reports the results of Table VII after collapsing the data at the country level. These results are mentioned at the end of Section III.C. Table IA.III shows that the difference in firm-specific and non-specific coefficients (the object of main interest) is marginally significant at around the 15% level, but not in the IV specification. However, country-level OLS tests are very conservative in terms of standard errors since they do not take full use of the underlying data at the loan level.

4. Table IA.IV summarizes the results of tests for heterogeneity in risk scales mentioned in Section IV.A of the paper. We first split countries by GDP per capita (above/below median) and allow for risk scales to be different for countries in the lower and upper half of the GDP per capita distribution. Column (1) below shows that there is no significant difference in the risk scales as we go from low income to high income countries. Column (2) takes the predicted default estimates from column (1) and estimates collateral spread. Column (2) thus allows for heterogeneity in risk scales for high vs. low income countries. However, the estimated collateral spread (1.94) is very similar and statistically indistinguishable from the corresponding estimate that does not allow for risk-scale heterogeneity (i.e., estimate of 2.11 in column (4) of Table V).

   Columns (3) and (4) repeat the exercise of columns (1) and (2), but this time split countries by their financial development rank (i.e., private credit to GDP). As before, risk scales are not significantly different across the two groups of countries, and the estimated collateral spread (which takes into account any heterogeneity in risk scale) is very similar at 1.90.

5. Table IA.V replicates the results of Table 4 of Rajan and Zingales (1998, RZ) paper while restricting their sample to the nine countries that are common between their paper and ours (Chile, India, Korea, Malaysia, Pakistan, Singapore, South Africa, Sri Lanka, and Turkey). For ease of comparison, we report the original RZ coefficient and standard errors, as well as those estimated in our subsample. As we

discuss in Section IV.D, the coefficient estimates in our subsample are very similar to those in the RZ sample (the ones reported in **bold**). Moreover, the coefficient estimates remain significant despite the reduction in number of observations. Note that we use the exact same STATA code used by RZ (available from their web site) in estimating our subsample coefficients.[1]

References

Rajan, Raghuram and Luigi Zingales, 1998, Financial dependence and growth, *American Economic Review* 88, 559-587.

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[1] A quick statistical calculation may be useful here. The number of countries in most papers on law, finance, and growth varies from 30 to 45 (a factor of two to three relative to countries in our sample). Thus, in terms of standard errors, if our data are representative (as all tests confirm), then all else equal our standard errors will increase by a factor of $\sqrt{N}$, or 1.4 to 1.7 times the literature. However, to the extent we get additional power using firm-level data, and to the extent the effects are stronger in our subsample (as is the case in the replication of Rajan and Zingales' results, for example), then the loss in power due to the smaller number of countries is compensated.

Table IA.I
Data Description By Industry

The table presents the distribution of data by industry. The data come from a sample of 8,414 small and medium-sized firms in 15 emerging markets borrowing from a large multinational bank. Although the original sample is a six-month panel over two years, this table only uses information from the first observation for each firm in the sample. All loans are made in the local currency, but appear reported in the bank's system in US Dollars for comparison purposes. There are 86 industry segments. We aggregate into one industry-group (Industry = 87) those firms where the industry was not specified.

	Industry	# of Firms	Av. Loan Size ('000s)	% of Total Firms	% of Total Lending	# of Countries
1	Apparel	438	748.44	5.21	11.08	14
2	Transportation	427	176.53	5.07	2.55	14
3	Consruction materials	395	313.14	4.69	4.18	13
4	Construction	394	219.35	4.68	2.92	10
5	Wholesale-Apparel	317	451.05	3.77	4.83	11
6	Wholesale- Elec. Goods	264	515.11	3.14	4.60	12
7	Machinery	263	276.05	3.13	2.45	12
8	Textiles	260	408.18	3.09	3.59	13
9	Consumer Goods	256	503.97	3.04	4.36	13
10	Wholesale- Groceries	246	364.43	2.92	3.03	15
11	Chemicals	227	306.75	2.70	2.35	15
12	Rubber and Plastic	218	345.12	2.59	2.54	12
13	Healthcare	216	84.35	2.57	0.62	8
14	Wholesale-Pro. & Comm. Goods	194	357.91	2.31	2.35	15
15	Wholesale-Non-Dur. Goods	191	465.07	2.27	3.00	13
16	Food Products	174	518.29	2.07	3.05	13
17	Wholsale- Chem. Goods	170	453.49	2.02	2.60	13
18	Wholesale- Machinery	166	389.02	1.97	2.18	12
19	Wholesale- Dur. Goods	149	201.28	1.77	1.01	8
20	Bus. Serv.- Misc.	141	196.83	1.68	0.94	13
21	Wholesale- Lumber	134	363.74	1.59	1.65	12
22	Bus. Serv.- Equip. Rental	122	54.72	1.45	0.23	5
23	Bus. Serv.- Printing	115	485.80	1.37	1.89	9
24	Electrical Equip.	114	387.82	1.35	1.49	12
25	Electronic Equip.	103	582.41	1.22	2.03	10
26	Toys	95	484.36	1.13	1.55	12
27	Wholsale- Plumb. & Heat. Equip.	91	475.04	1.08	1.46	12
28	Automobiles and Trucks	90	490.76	1.07	1.49	9
29	Software	90	339.62	1.07	1.03	8
30	Retail- Misc.	84	265.51	1.00	0.75	11
31	Bus. Serv.- Engineers & Acc.	79	168.46	0.94	0.45	12
32	Steel Works	77	479.50	0.92	1.25	12
33	Wholesale- Paper Prod.	76	396.49	0.90	1.02	11
34	Wholsale- Auto Parts	74	355.96	0.88	0.89	12
35	Retail- Auto Dealers	73	301.30	0.87	0.74	10
36	Personal Services	73	539.57	0.87	1.33	13
37	Business Supplies	73	121.69	0.87	0.30	7
38	Wholesale- Sporting Goods	70	256.65	0.83	0.61	8
39	Real Estate	69	109.17	0.82	0.25	5
40	Wholesale- Home Furnish.	62	787.20	0.74	1.65	11
41	Fabricated Prod.	61	546.33	0.72	1.13	12

	Data Description By Industry (cont'd)				
42	Printing & Publishing	59	326.67	0.70	0.65	11
43	Bus. Serv.- Advertising	58	126.59	0.69	0.25	7
44	Wholesale- Drugs	54	308.98	0.64	0.56	12
45	Wholesale- Metals & Minerals	52	409.82	0.62	0.72	12
46	Bus. Serv.- PR & Consulting	50	89.29	0.59	0.15	8
47	Pharmaceutical Prod.	49	706.76	0.58	1.17	9
48	Wholesale- Misc.	47	423.92	0.56	0.67	10
49	Shipping Containers	45	352.24	0.53	0.54	11
50	Retail- Apparel	44	333.65	0.52	0.50	7
51	Retail- Gas Stations	43	80.28	0.51	0.12	5
52	Trading	42	107.07	0.50	0.15	6
53	Wholesale- Petro. Prod.	41	751.02	0.49	1.04	8
54	Restaurants & Hotels	39	319.56	0.46	0.42	7
55	Hardware	37	519.22	0.44	0.65	8
56	Entertainment	35	45.76	0.42	0.05	3
57	Wholesale- Farm Prod.	32	554.78	0.38	0.60	9
58	Candy & Soda	30	177.40	0.36	0.18	5
59	Industrial Metal Mining	30	711.07	0.36	0.72	8
60	Bus. Serv.- Comp. Serv.	26	110.93	0.31	0.10	4
61	Shipbuilding, Railroads	21	288.97	0.25	0.21	6
62	Wholesale- Beer & Wine	21	290.94	0.25	0.21	7
63	Retail- Electronic Stores	20	170.10	0.24	0.11	5
64	Telecommunications	18	296.69	0.21	0.18	6
65	Measuring & Control Equip.	17	42.14	0.20	0.02	4
66	Agriculture	16	520.59	0.19	0.28	4
67	Wholesale- Waste Material	16	570.05	0.19	0.31	6
68	Medical Equip.	16	63.44	0.19	0.03	8
69	Bus. Serv.- Cleaning	16	357.38	0.19	0.19	8
70	us. Serv.- Personal Supply Serv.	14	681.30	0.17	0.32	5
71	Beer & Liquor	14	477.96	0.17	0.23	5
72	Retail- Food Stores	13	218.92	0.15	0.10	3
73	Retail- Drug Stores	13	98.32	0.15	0.04	4
74	Retail- Home Furnish.	13	66.47	0.15	0.03	5
75	Retail- Home Supply	11	135.15	0.13	0.05	3
76	Wholesale- Jewellery	11	66.98	0.13	0.02	5
77	Retail- Merchandise Stores	11	382.06	0.13	0.14	7
78	Insurance	8	38.14	0.10	0.01	2
79	Retail- Lumber	8	244.86	0.10	0.07	7
80	Utilities	7	53.74	0.08	0.01	4
81	Petro. & Natural Gas	6	537.38	0.07	0.11	4
82	Banking	5	114.44	0.06	0.02	2
83	Other	4	394.56	0.05	0.05	4
84	Retail- Department Stores	3	35.79	0.04	0.00	1
85	Tobacco Prod.	2	62.56	0.02	0.00	2
86	Defense	1	26.32	0.01	0.00	1
87	Not Specified	365	47.38	4.34	0.58	10
	Total	8,414		100.00	100.00	15

Table IA.II
Summary Statistics,
Firm-level Argentine Data

This table presents summary statistics for the 587 firms from Argentina between the period 1995 to 2001 for which we have detailed audited financial and interest rate data. This dataset is part of the same cross-country lending program described in the paper. This information was hand-collected from the credit dossiers of the firms. Besides ex-ante Risk grade measures we also have also balance sheet, income statement, and interest rate information, among other variables. The differences in the number of observations correspond to missing dependent variables.

Variable	Mean	Median	SD	Min	Max	Obs
Risk Grade			0.76	1.00	4.00	587
A	0.13					
B	0.43					
C	0.39					
D	0.04					
Total Asset ('000s)	9171.17	4427.00	13875.56	35.00	159051.00	587
Net Worth ('000s)	4434.33	1981.50	7035.32	-46.00	67868.00	586
Net Worth/Total Assets	0.49	0.46	0.28	-0.04	4.27	586
Net Worth/Total Sales	0.39	0.28	0.36	-0.01	3.26	583
Net Collateral ('000s)	5858.65	2956.83	8988.35	-5936.96	121213.00	587
Net Collateral/Total Assets	0.68	0.71	0.22	-2.05	1.26	587
Net Collateral/Total Sales	0.52	0.42	0.43	-0.31	6.02	584
ROA	0.11	0.08	0.14	-0.33	1.52	587
EBITDA/Sales	0.14	0.12	0.11	-0.93	0.71	584
Lending Interest Rate	0.077	0.062	0.052	0.010	0.300	417
Aggregate Interest Rate	0.086	0.071	0.049	0.013	0.290	389

TABLE IA.III
Composition of collateral and financial development, country-level regressions

This table shows the results in columns (1) and (2) of Table VII when the data are collapsed at the country level, and the country-specific coefficient is regressed on a constant. It shows that the difference in firm-specific and non-specific coefficients (which is the object of main interest) is marginally significant at around 15% levels, but not so in IV specification. Columns (1) through (4) report OLS estimates. Columns (5) and (6) report IV estimates. Standard errors are reported in parenthesis.

Dependent Variable	Country-Specific "Collateral Quality Spread" of Collateral Type:					
	Non-Specific	Firm-Specific	Non-Specific	Firm-Specific	Non-Specific	Firm-Specific
Instrument for Private Credit to GDP					All Three	All Three
			OLS		IV	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Private Credit to GDP			-1.05	1.01	-1.40	0.27
			(0.95)	(1.12)	(1.20)	(1.00)
Constant	1.55	0.54	2.22	-0.10	2.44	0.37
	(0.50)	(0.43)	(1.03)	(0.67)	(1.16)	(0.71)
No of Obs.	15	15	15	15	15	15
R^2			0.06	0.08	0.06	0.04
	p-value of difference in the constant in (1) and (2)		p-value of diff. in private credit to GDP coeff. in (3) & (4)		p-value of diff. in private credit to GDP coeff. in (5) & (6)	
	0.15		0.17		0.36	

TABLE IA.IV
Testing for risk-scale heterogeneity

This table allows for heterogeneity in risk scales across countries by splitting countries in different ways. We use these heterogeneous risk scales to test whether such heterogeneity has an impact on our estimate of collateral spread. We first split countries by GDP per capita (above/below median) and allow for risk scales to be different for countries in the lower and upper half of the GDP per capita distribution (columns (1) and (2)). We then split countries by the level of private credit to GDP (columns (3) and (4)).

	Countries Split By:			
	GDP per Capita		Private Credit to GDP	
Dependent Variable	Default?	Coll. Rate	Default?	Coll. Rate
	(1)	(2)	(3)	(4)
Grade=B	2.08		0.87	
	(0.98)		(0.79)	
Grade=C	4.61		3.30	
	(1.37)		(0.93)	
Grade=D	9.64		5.49	
	(2.32)		(1.54)	
(Grade=B) ✕ (Above Median)	-1.11		0.99	
	(1.26)		(1.14)	
(Grade=C) ✕ (Above Median)	-2.49		-0.46	
	(1.60)		(1.34)	
(Grade=D) ✕ (Above Median)	-3.91		1.95	
	(2.57)		(1.97)	
Predicted Default		1.94		1.90
		(0.20)		(0.19)
Log Approved Loan	1.25	2.73	1.27	2.79
	(0.20)	(0.43)	(0.20)	(0.42)
Country ✕ Industry FE	Yes	Yes	Yes	Yes
Sales Size Indicator FE	Yes	Yes	Yes	Yes
No of Obs.	8,414	8,414	8,414	8,414
R^2	0.29	0.51	0.29	0.51

TABLE IA.V
Industry growth and Various measures of development

REPLICATION OF TABLE 4 OF RAJAN AND ZINGALES (1998)

This table replicates the primary result in Rajan and Zingales (1998), while restricting the RZ sample to nine countries that are common between the RZ sample and ours. The countries are: Chile, India, Korea, Malaysia, Pakistan, Singapore, South Africa, Sri Lanka, and Turkey.

Variable	Financial Development Measured As:											
	Total Capitalization		Bank Debt		Accounting Standards		Accounting Standards In 1983		Accounting Standards and Capitalization		Instrumental Variables	
	RZ Sample	Our Sample	RZ Sample	Our Sample	RZ Sample	Our Sample	RZ Sample	Our Sample	RZ Sample	Our Sample	RZ Sample	Our Sample
Industry's Share of Total Value Added In Manufacturing In 1980	-0.91 (0.25)	-0.67 (0.25)	-0.90 (0.25)	-0.63 (0.24)	-0.64 (0.20)	-0.68 (0.24)	-0.59 (0.22)	-0.48 (0.27)	-0.44 (0.14)	-0.64 (0.25)	-0.65 (0.20)	-0.63 (0.24)
External Dependence × Total Capitalization	0.07 (0.02)	0.05 (0.02)							0.01 (0.01)	-0.03 (0.04)		
External Dependence × Domestic Credit to Private Sector			0.12 (0.04)	0.17 (0.08)								
External Dependence × Accounting Standards					0.16 (0.03)	0.20 (0.03)			0.13 (0.03)	0.30 (0.19)	0.17 (0.04)	0.15 (0.12)
External Dependence × Accounting Standards In 1983							0.10 (0.04)	0.30 (0.16)				
No. of Obs.	1,217	285	1,217	285	1,067	231	855	192	1,042	231	1,067	231
R^2	0.29	0.41	0.29	0.42	0.35	0.49	0.24	0.33	0.42	0.49	0.35	0.49