

Online Appendix for Country characteristics in foreign bank investments and risk taking: The role of shared culture, common institutions, and geographic proximity

Data description

The total volume of ultimate risk foreign claims in BIS-reporting countries rose from 24 trillion USD over the 2006-2007 period to 26 trillion USD by 2011-2012. In terms of asset composition, over the 2006-2007 period 17 percent of UR foreign claims consisted of credit commitments, 20 percent of guarantees and 11 percent of derivatives. By 2011-2012, these shares changed to 14 percent, 33 percent and 15 percent, respectively. The rest of foreign claims consisted of government bonds, asset-backed securities, etc. The majority (approximately 52 percent) of banks' foreign claims are held in the non-financial private sector in the recipient country. Roughly one-third of the bilateral claims are invested in banks, while the remaining claims are invested in the public sector.

List of Countries

List of BIS-reporting (source) countries in estimation sample: Australia, Austria, Belgium, Brazil, Canada, Chile, Denmark, France, Germany, Greece, Ireland, Italy, Japan, Mexico, the Netherlands, Panama, Portugal, Spain, Sweden, Switzerland, Taiwan, Turkey, the United Kingdom and the United States.

List of recipient (destination, or host) countries in estimation sample: Angola, Argentina, Armenia, Australia, Austria, Barbados, Belgium, Belize, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Canada, Cayman Islands, Chile, China, Colombia, Cuba, Cyprus, Czech Republic, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Eritrea, Estonia, Finland, France, Gabon, Germany, Greece, Grenada, Guatemala, Honduras, Hong Kong, Hungary, India, Indonesia, Iran, Ireland, Israel, Italy, Japan, Jordan, Korea, Kuwait, Latvia, Lebanon, Malaysia, Malta, Mexico, Moldova, Mozambique, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Qatar, Russia, Saint Lucia, Saudi Arabia, Singapore, Slovakia, South Africa, Spain, St. Vincent, Sweden, Switzerland, Syria, Taiwan, Thailand, Trinidad and Tobago, Turkey, Turkmenistan, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, and Venezuela.

Alternative Specifications

Accounting for international trade

Because our specification incorporates the ideas behind a gravity model, we would also expect that many of our explanatory variables would also be significantly correlated to bilateral trade shares. However, it could also be the case that international trade is an omitted variable in our specification if banks allocate their portfolio to follow trading patterns (as discussed in Aviat and Coeurdacier, 2007). To determine if our main results are driven by the connection between our explanatory variables and trade, we re-estimate the results in Table 4, adding a measure of export share in each estimation. Specifically, export share is the share of exports of the banks' source country that go to the destination country. The construction of this variable parallels that of our portfolio share variable.

The results are shown in Appendix Table 3. Higher export shares correspond to significantly higher portfolio shares in all ten specifications. However, our major conclusions discussed above remain. While the inclusion of the export share reveals the relationship between *contiguous* and bank portfolio shares to be less robust, *distance* between countries remains significant in all estimations, confirming the role of geography. The importance of shared colonial heritage is comparable to our main results in Table 4, and the role of information flows (phone calls) remains highly significant (although drops in magnitude). Furthermore, in this new set of estimations, common legal system becomes significant in all estimations, making this result a bit sharper. Overall, while we do find evidence that trade and bank portfolio allocations move together, this relationship does not completely explain the effects of geography, common institutional arrangements, shared colonial history, and information exchange.

Target sector-specific estimation

The considerations that go into banks' choices of how much of their foreign portfolio to allocate to a given host country may also depend on the target sector of investment (Temesvary, 2015).¹ We explore these potential differences in the foreign portfolios of the one source country that provides a sector-specific version of its foreign exposures: the United States.² Since such detailed sector-specific data is only available for one source country, we have to make some adjustments to our main specifications accordingly: we exclude explanatory variables with limited variation, and apply a random effects analysis.³

¹ For instance, there may be substantial differences in the intensity of monitoring that is necessary for a claim acquired in another large bank across borders, versus an investment in a privately owned company abroad. Informational asymmetries in foreign investments may be less severe when the financial transaction takes place between banks (Hale 2012). Claims extended to governments may be motivated by political considerations as well.

² The BIS provides such sectoral breakdown of the data aggregated at the host country level, but not for bilateral claims. Therefore, we look for sector-specific claims data from source countries' central banks. Fortunately one source country (the United States) also provides a more detailed breakdown of the aggregated dataset that it supplies to the BIS as part of the Consolidated Banking Statistics. This more detailed version of the BIS-type dataset for the U.S., collected and made publicly available by the U.S.'s Federal Financial Institutions Examination Council, provides information on U.S. banks' immediate counterparty and ultimate risk bilateral claims in three sectors in each host country: the banking sector, the non-financial private sector and the public sector.

³ Specifically, none of the destination countries for U.S. bank investments share a common currency, only two destination countries are contiguous, and there are only three destination countries from which the U.S. was colonized. Therefore, we exclude these variables from our estimation due to their limited variation. In addition, because we only have one source country and, at most, two observations for each

We obtain similar results for both immediate counterparty claims and ultimate risk claims, and allow us to draw a few broad conclusions.⁴ First, information exchange, as measured by cross-border phone calls remains positively and significantly associated with all types of portfolio shares. Second, there are some differences in the variables that are associated with portfolio allocations to different sectors. Investments in the banking sector is positively related to sharing a common language. Sharing a common language does not have a statistically significant relationship to acquiring claims in the public sector, and is significant in only one of the specifications that examines portfolio shares in the private sector. In addition, sharing a common legal origin is negatively related to investments in the public sector. While this result may be an artifact of examining only data on U.S. banks⁵, it is also consistent with sovereign lending being driven by geo-political considerations.

Tobit estimation

We also explore if our results are robust to an additional specification that might be suggested by potential left-censoring of the data. There are a small number of observations in our main dataset that have zero entries for bilateral bank portfolio shares. To determine if this affects our conclusions, we estimate a Tobit model with our pooled dataset used to generate our main results. The Tobit specification yields results that are very close to the pooled specification presented in Table 4 and we do not present them in detail here.⁶

destination country, we are unable to include fixed effects for the destination countries and the source country. Instead, we estimate a country-specific random effects model for destination countries of U.S. cross-border bank claims.

⁴ Detailed sector-specific results are available from the authors upon request.

⁵ Many of the other countries in the data set that share a common legal origin with the U.S. are also former British colonies, many of them with less stable governments.

⁶ The detailed results of this Tobit specification are available from the authors upon request.

Appendix Table 1: SUR specification – Immediate Counterparty Portfolio Shares

Time Period	(1) 2006-2007	(2) 2011-2012	(3) 2006-2007	(4) 2011-2012	(5) 2006-2007	(6) 2011-2012
<i>Culture</i>						
Common Language	-0.788 (0.79)	-0.425 (0.89)	0.108 (0.96)	0.228 (1.11)	0.472 (1.04)	0.571 (1.20)
Genetic Distance	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)	0.001 (0.00)	0 (0.00)	0.001 (0.00)
Destination Colony	6.019*** (1.42)	6.466*** (1.60)	2.908* (1.69)	4.867** (1.96)	2.83 (1.74)	4.829** (2.02)
<i>Geography</i>						
Contiguous	0.793 (0.57)	1.347** (0.64)	0.974 (0.79)	1.535* (0.92)	0.942 (0.82)	1.503 (0.95)
Distance	-0.0003*** (0.00)	-0.0003*** (0.00)	-0.0003*** (0.00)	-0.0004*** (0.00)	-0.0004*** (0.00)	-0.0004*** (0.00)
<i>Institutions</i>						
Common Legal	0.38 (0.42)	0.875* (0.47)	0.39 (0.51)	1.141* (0.59)	0.54 (0.55)	1.431** (0.64)
Common Currency	-0.136 (0.73)	-0.157 (0.82)	-0.249 (0.90)	-0.493 (1.04)	-0.395 (0.94)	-0.709 (1.08)
<i>Information</i>						
Phone Calls	0.640*** (0.05)	0.595*** (0.06)	0.612*** (0.06)	0.617*** (0.07)	0.611*** (0.07)	0.617*** (0.08)
<i>Regulations</i>						
Relative Supervisory Power (source - host)	-0.898 (1.38)	-0.382 (1.51)				
Relative Private Monitoring (source - host)			-0.917*** (0.35)	-0.32 (0.32)		
Relative Banking Restrictions (source - host)					-0.15 (0.47)	-3.087*** (0.50)
Host and Source Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
p-value for null hypothesis that the coefficients on regulation variables are equal across time periods		0.69		0.16		0.000
Observations	488	488	372	372	347	347
R-squared	0.77	0.71	0.78	0.74	0.79	0.75

The dependent variable is the quarterly share of a BIS-reporting source country's investment in a given host country in the source country's banking sector's total IC foreign claims, averaged over the 2006-2007 and 2011-2012 periods. Standard errors in parentheses. ***significant at 1%, **significant at 5%, *significant at 10%.

Appendix Table 2: SUR specification – Ultimate Risk Portfolio Shares

	(1)	(2)	(3)	(4)	(5)	(6)
Time Period	2006-2007	2011-2012	2006-2007	2011-2012	2006-2007	2011-2012
<i>Culture</i>						
Common Language	-0.102 (0.87)	-0.014 (0.94)	1.062 (1.04)	1.006 (1.16)	1.332 (1.08)	1.32 (1.22)
Genetic Distance	0 (0.00)	0.001 (0.00)	-0.001 (0.00)	0 (0.00)	-0.001 (0.00)	0 (0.00)
Destination Colony	6.981*** (1.50)	8.480*** (1.61)	2.814 (1.81)	6.018*** (2.03)	2.737 (1.87)	6.000*** (2.11)
<i>Geography</i>						
Contiguous	0.749 (0.61)	1.491** (0.66)	1.045 (0.89)	1.702* (0.99)	0.923 (0.91)	1.589 (1.03)
Distance	-0.0003*** (0.00)	-0.0003*** (0.00)	-0.0003*** (0.00)	-0.0003*** (0.00)	-0.0004*** (0.00)	-0.0004*** (0.00)
<i>Institutions</i>						
Common Legal	0.201 (0.42)	0.499 (0.45)	0.147 (0.52)	0.61 (0.58)	0.32 (0.55)	0.775 (0.63)
Common Currency	-0.645 (0.69)	-0.422 (0.74)	-0.22 (0.84)	-0.217 (0.94)	-0.362 (0.88)	-0.344 (0.99)
<i>Information</i>						
Phone Calls	0.646*** (0.06)	0.569*** (0.06)	0.599*** (0.08)	0.589*** (0.08)	0.585*** (0.08)	0.574*** (0.09)
<i>Regulations</i>						
Relative Supervisory Power (source - host)	0.004 (0.51)	-1.323 (1.67)				
Relative Private Monitoring (source - host)			2.379*** (0.43)	0.061 (0.45)		
Relative Banking Restrictions (source - host)					-0.096 (0.26)	-2.170*** (0.54)
p-value for null hypothesis that the coefficients on regulation variables are equal across time periods						
		0.44		0.000		0.001
Observations	461	461	348	348	326	326
R-squared	0.72	0.68	0.73	0.70	0.74	0.71

The dependent variable is the quarterly share of a BIS-reporting source country's investment in a given host country in the source country's banking sector's total UR foreign claims, averaged over the 2006-2007 and 2011-2012 periods. Standard errors in parentheses.

***significant at 1%, **significant at 5%, *significant at 10%

Appendix Table 3: Accounting for International Trade: Estimation of the Main Specifications (Table 4) now Including a Measure of Trade Relationships

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Immediate Counterparty Portfolio Shares					Ultimate Risk Portfolio Shares				
<i>Geography</i>										
Contiguous	-0.7847** (0.380)	-0.7247* (0.378)	-0.5581 (0.391)	-0.4751 (0.443)	-0.5585 (0.460)	-0.3290 (0.429)	-0.4956 (0.424)	-0.3477 (0.438)	-0.1880 (0.500)	-0.2113 (0.515)
Distance	-0.0001*** (0.000)	-0.0001*** (0.000)	-0.0001*** (0.000)	-0.0001*** (0.000)	-0.0002*** (0.000)	-0.0001** (0.000)	-0.0001** (0.000)	-0.0001*** (0.000)	-0.0001*** (0.000)	-0.0001*** (0.000)
<i>Institutions</i>										
Common Legal	0.7401*** (0.247)	0.7674*** (0.247)	0.7308*** (0.265)	0.7726*** (0.291)	0.8111*** (0.304)	0.6168** (0.260)	0.5902** (0.258)	0.4800* (0.277)	0.5538* (0.306)	0.5946* (0.318)
Common Currency	-0.1701 (0.450)	0.1560 (0.452)	-0.4738 (0.470)	-0.3493 (0.518)	-0.4085 (0.532)	-0.5532 (0.455)	-0.2033 (0.453)	-0.8548* (0.467)	-0.6260 (0.512)	-0.6772 (0.525)
<i>Information</i>										
Phone Calls	0.3372*** (0.040)	0.3407*** (0.040)	0.2666*** (0.041)	0.2467*** (0.046)	0.2458*** (0.047)	0.4071*** (0.047)	0.4377*** (0.047)	0.3464*** (0.047)	0.2989*** (0.055)	0.2941*** (0.056)
<i>Culture</i>										
Common Language	-0.2901 (0.470)	-0.1833 (0.473)	-0.1116 (0.504)	0.2453 (0.548)	0.4916 (0.590)	-0.3890 (0.545)	-0.3552 (0.542)	-0.1841 (0.578)	0.1896 (0.624)	0.3806 (0.654)
Genetic Distance		0.0004 (0.000)	0.0002 (0.000)	0.0000 (0.000)	0.0000 (0.000)		0.0009** (0.000)	0.0007 (0.000)	0.0007 (0.001)	0.0007 (0.001)
Destination Colony		4.3486*** (0.893)	4.5619*** (0.908)	3.4062*** (0.977)	3.3259*** (0.999)		7.9939*** (1.055)	7.0912*** (1.034)	5.5520*** (1.130)	5.5212*** (1.152)
<i>Trade Connectedness</i>										
Export Share	42.7611*** (2.790)	42.4786*** (2.774)	43.1479*** (2.812)	44.3361*** (2.976)	44.5219*** (3.074)	36.2396*** (3.377)	36.7610*** (3.339)	38.0421*** (3.368)	40.4201*** (3.573)	40.3155*** (3.667)
<i>Regulations</i>										
Relative Supervisory Power (source - host)			-0.0395 (0.186)					-0.0440 (0.196)		
Relative Private Monitoring (source - host)				-0.0596 (0.077)					-0.0754 (0.086)	
Relative Banking Restrictions (source - host)					-0.0697 (0.094)					-0.0888 (0.099)
# of Source – Host Pairs	696	679	596	583	564	638	622	542	532	515
Time and Source and Host										
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,359	1,327	1,082	951	910	1,264	1,233	1,000	875	839
R-squared	0.742	0.750	0.787	0.798	0.799	0.686	0.702	0.741	0.749	0.749

This table depicts the results of our main specification in Equation (1), now including a measure of trade connectedness (export share, defined as the share of the source country's total exports going to the given host country). The dependent variables are defined as the quarterly shares of a BIS-reporting source country's investment in a given host country in the source country's banking sector's total foreign claims, averaged over the 2006-2007 and 2011-2012 periods. The explanatory variables are defined in the text. Standard errors are in parentheses. ***significant at 1%, **significant at 5%, *significant at 10%