The Role of Foreign Banks in Trade

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Motivation

- Global financial crisis showed that shocks are easily transmitted internationally through internationally active banks
- Lively debate in both academic and policy circles on risks and benefits of financial globalization
- Focus mainly on understanding the risks
- Understanding the benefits very limited attention

This paper

- Focus on potentially important benefit of internationally active banks: their ability to finance international trade
- Specifcally, examine whether the local presence of foreign banks (i.e. “brick and mortar” operations) has a positive impact on exports

Main take-away

- Foreign banks can facilitate trade
- Especially when large, globally active banks invest in financially underdeveloped countries
- Suggest foreign banks have important benefits for real economy

Why do banks matter for trade?

- Long time lags associated with international trade imply that exporters need more working capital financing
- Exporters rarely have capacity to evaluate default risk and usually turn to banks to provide payment insurance and guarantees
- Ample empirical evidence (tranquil and crisis times) that finance facilitates trade

Why should foreign banks matter for trade?

- Providing finance for trade is specialized business, mostly done by large, global banks
  - ✓ Specialized products (i.e. letters of credit) and hedging currency risk
- Expect local affiliates of these banks to have advantage providing these products
  - ✓ Especially compared to domestic banks in financially less developed countries

Why should <u>foreign</u> banks matter for trade?

- Foreign banks have been found to introduce new and better lending technologies and to increase competition
- Increase in quality and reduction in the costs of financial intermediation → improved access to finance
  - ✓ Caveat: for certain firms and in certain countries
- Given that finance is more important for exporters, this can especially benefit trade

Why should foreign banks matter for trade?

- Might be able to reduce risks specific to financing exporting firms
  - ✓ Might better deal with international enforcement problems
  - ✓ Foreign banks may provide a substitute commitment technology when legal enforcement is weak
  - ✓ Might be better able to assess risk at both the exporter and importer side of transaction

Why should foreign banks matter for trade?

- If these factors contribute to greater availability of external finance for exporting firms, then the presence of *foreign banks* should have a positive impact on export over and above general financial sector development

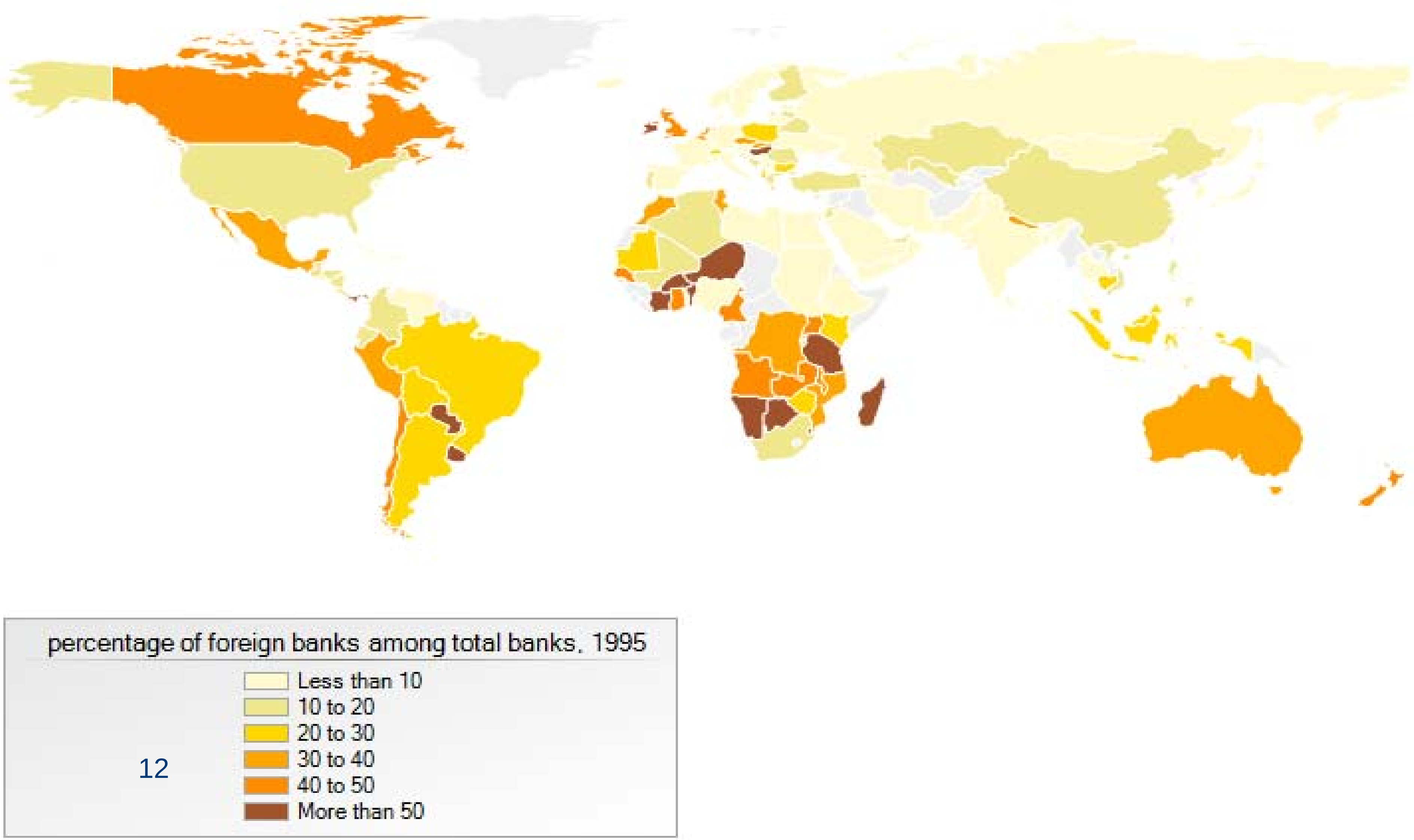
This paper

- Combine detailed data on bilateral, sectoral trade with bilateral data on foreign bank presence across 95 exporting and 122 importing countries between 1995 and 2007
- Two important facts that we will exploit

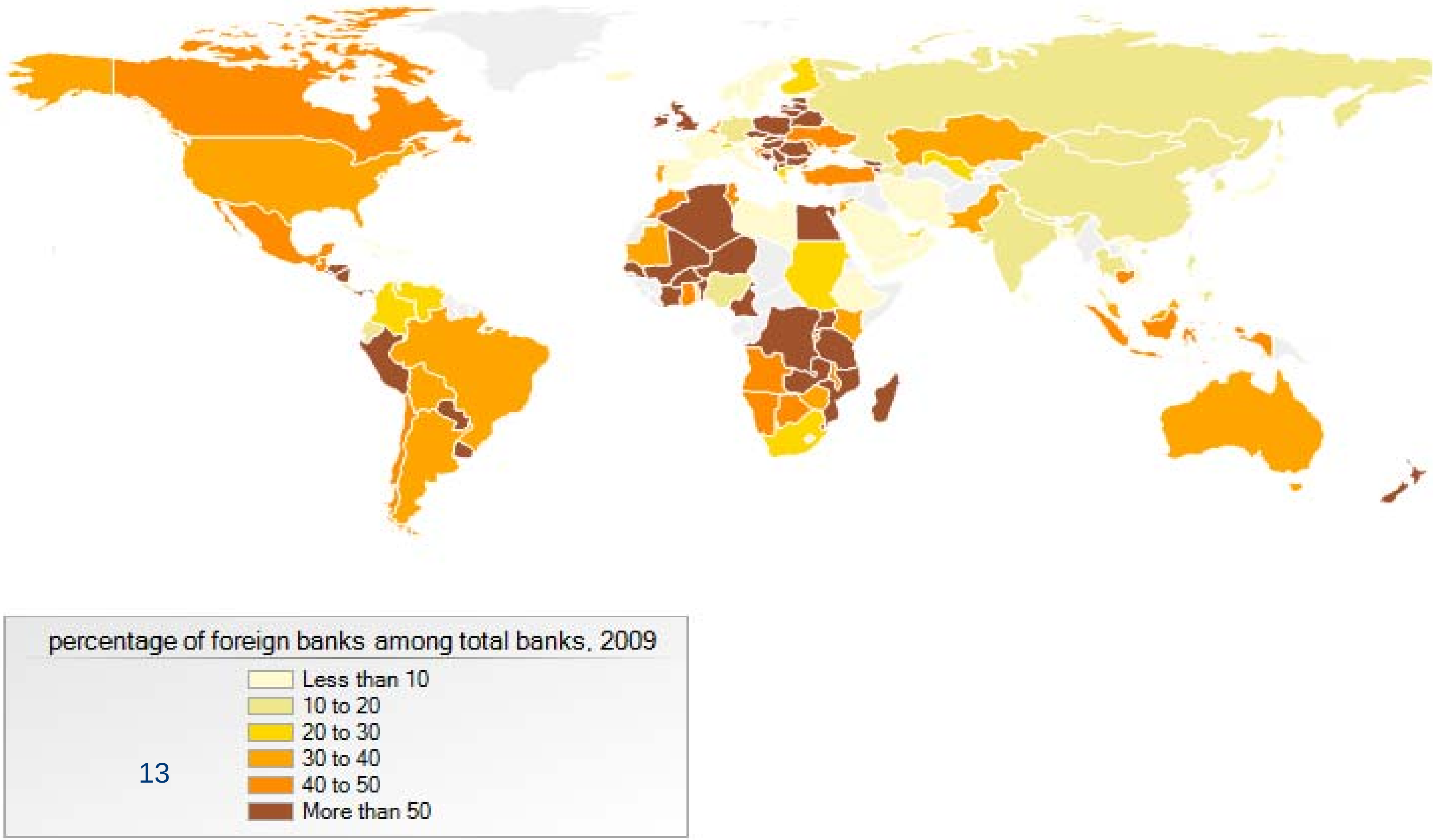
Fact 1

- Foreign bank presence varies importantly among exporting countries and within a country over time (due to substantial number of entries by foreign banks) (Claessens and Van Horen, 2014)
- Allows us to exploit both cross-section and time-series variation

Foreign bank presence (1995)



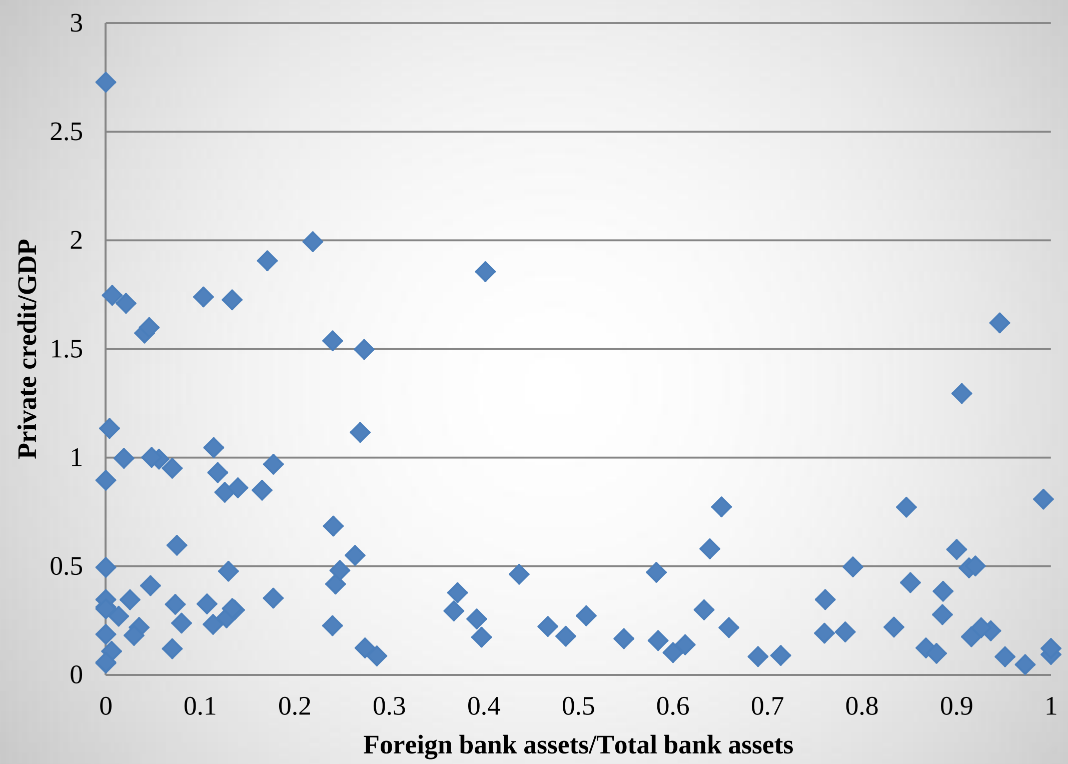
Foreign bank presence (2009)



Fact 2

- Little relationship between financial sector development and the presence of foreign banks
- Allows us to isolate the impact of foreign bank presence over and beyond financial development

Foreign bank presence and financial development



- Countries can be financially highly developed or underdeveloped with few or many foreign banks present

Preview of findings

- Present two sets of evidence that demonstrate that foreign banks can facilitate trade

1) Panel analysis: Positive relationship between share of foreign banks and exports in sectors more dependent on external finance (controlling for financial development)

2) Event study: Entry of a foreign bank from the importing country boosts bilateral exports more in sectors more dependent on external finance

   - Impact especially strong when globally active banks are investing in financially underdeveloped countries
   - Indicates that (transfer of) specialized knowledge and technology for trade financing is important

Related literature

- Impact of foreign banks

  Claessens, Demirguc-Kunt and Huizinga, 2001; Clarke, Cull, Martinez Peria and Sanches, 2003; Demirguc-Kunt, Laeven and Levine, 2004; Detragiache, Gupta and Tressel, 2008; Bruno and Hauswald, 2013; Claessens and van Horen, 2014

  - ✓ Our paper: presence of foreign banks has beneficial impact on real economy by facilitating trade, but country characteristics matter

- Trade and finance

  Kletzer and Bardhan, 1987; Beck, 2002, 2003; Greenaway, Guariglia and Kneller, 2007; Manova, 2008, 2013; Berman and Hericourt, 2010; Minetti and Zhu, 2011; Becker, Chen and Greenberg, 2013; Hale, Candelaria, Caballero and Borisov, 2013; Bronzini and D'Ignazio, 2013

  - ✓ Our paper: local presence of foreign banks plays role in trade over and above financial sector development

- Finance and growth

  King and Levine, 1993a, b; ; Jayaratne and Strahan 1996; Demirguc-Kunt and Maksimovic, 1998, Levine and Zervos, 1998; Rajan and Zingales, 1998; Michalski and Ors, 2012

  - ✓ Our paper: global financial integration, through local presence of foreign banks, can generate economic growth by facilitating international trade

Data

Data

- We need to combine several data sources
  - ✓ Sectoral, bilateral trade data
  - ✓ Bilateral data on foreign bank presence
  - ✓ Sectoral data on external finance dependency

Trade data

- Bilateral trade flows at sectoral level (UN Comtrade):
  - ✓ 134 countries
  - ✓ 28 manufacturing sectors (3-digit ISIC industry level)
  - ✓ 1995-2007 (excluding global financial crisis)
  - ✓ On average country exports to over 70 countries if it exports in a sector

Foreign bank data

- Foreign bank presence (Claessens and Van Horen, 2014):
  - ✓ Ownership information of 5,324 banks active for at least one year over the period 1995-2009 in 137 countries
  - ✓ Bank foreign owned if > 50% shares held by foreigners
  - ✓ If foreign, home country of majority foreign shareholder provided
  - ✓ Data matched to Bankscope for balance sheet information
- Excluding offshore centers and countries with <60% banks asset info available: 95 exporting and 122 importing countries

Foreign bank data

- Bank ownership database has two important features:
  1) Ownership information is time-varying
     - Know the importance of foreign banks in financial intermediation for each year in sample period
     - Exploit in panel analysis
  2) For each foreign bank the country in which the parent is headquartered is known
     - Know exact year when bank from importing country for first time entered exporting country
     - Exploit in event study and to examine channels through which foreign banks facilitate trade

Foreign bank data

- Some numbers (2007):
  - ✓ 1,043 foreign banks headquartered in 77 different home countries active in our sample of exporting countries
  - ✓ Importance foreign banks ranges from 0 to 100 percent
  - ✓ On average, 11 foreign banks from six different home countries
  - ✓ In 78 percent of exporting-importing pairs at least one foreign bank present; in 6 percent bank from importing country
  - ✓ Number of foreign bank entries between 1995 and 2007 ranges from 0 to 39 with average of 7

Industry data

- Exploit industry differences wrt need for external finance
  - ✓ Can control for all time-(in)variant exporting country characteristics that can simultaneously influence foreign bank presence and level of exports
- Producers in certain industries incur higher up-front investment that cannot be generated internally, thus requiring more external finance (Rajan and Zingales, 1998)
- Viewed as sector-specific, technologically-determined characteristics innate to manufacturing process and unlikely determined by share of foreign banks
- At the same time, if foreign banks facilitate trade, firms in these sectors should benefit more

Industry data

- *External finance dependency*: fraction of total capital expenditure not financed by internal cash flows from operations
- Based on data for all publicly-listed US companies available in Compustat averaged over 1986-1995 (Manova, 2013)
  - ✓ Relative ranking matters, which unlikely changes over time
  - ✓ US most advanced financial system: behavior and choices of firms likely reflect optimal choices in external financing

The role of foreign banks in trade: panel analysis

Empirical methodology

- *Aim*: examining whether a higher presence of foreign banks is associated with a higher level of exports in sectors more dependent on external finance
- If foreign banks facilitate trade through greater availability of external finance, then their presence should disproportionally benefit exports in sectors more dependent on external finance
- Identification rests on allowing the impact of foreign bank presence to differ with respect to dependency on external finance

Empirical methodology

- *Dependent variable:* log of value of exports from country *i* to country *j* in 3-digit ISIC sector *s* in year *t*

- *Foreign bank presence (FB):*
  - ✓ Share assets of all foreign banks active in exporting country *i* in total bank assets in exporting country *i* at time *t* (preferred measure, but only available 2005-2007)
  - ✓ Dummy which is one if at least one foreign bank is present in exporting country *i* at time *t*
  - ✓ Share in numbers

- *Importing country foreign bank presence (IFB):*
  - ✓ Same as above, but only banks from importing country included

Empirical methodology

- Our model:

$$lnE_{ijst} = \beta_1 FB_{it} \cdot extfin_s + \gamma_1 IFB_{ijt} \cdot extfin_s + \gamma_2 IFB_{ijt} + \delta_1 FD_{it} \cdot extfin_s \\ + \kappa' X_t + \epsilon_{it} + \mu_{jt} + \varphi_s + \eta_{ijst},$$

- If foreign banks (from importing country) play a positive role in facilitating trade then:
  - ✓ More exports in industries with high dependency on external finance
  - ✓ $\beta_1 > 0; \gamma_1 > 0$

Empirical methodology

- Control variables:
  - ✓ Financial development (private credit/GDP) interacted with sector measure of external finance dependency
  - ✓ Exporter-year fe to control for all time-(in)variant exporting country characteristics that can simultaneously influence foreign bank presence (or financial development) and the level of exports
  - ✓ Importer-year fe to control for (time-varying) changes in demand at the importer side
  - ✓ Industry fe to control for time-invariant industry characteristics that might affect trade patterns
  - ✓ Distance between exporter and importer country
- OLS, standard errors clustered by exporter-importer pair

Baseline results

	1995-2007		2005-2007	1995-2007		2005-2007
	dummy	number share	asset share	dummy	number share	asset share
	[1]	[2]	[3]	[4]	[5]	[6]
FB * extfin	0.181***	0.111*	0.730***	0.178***	0.098	0.724***
	(0.052)	(0.067)	(0.062)	(0.052)	(0.068)	(0.063)
IFB * extfin				0.200***	2.816***	1.298***
				(0.054)	(0.621)	(0.392)
IFB				0.520***	5.519***	2.859***
				(0.056)	(0.658)	(0.544)
FD * extfin	1.732***	1.736***	1.679***	1.733***	1.741***	1.678***
	(0.028)	(0.028)	(0.035)	(0.028)	(0.028)	(0.035)
Distance	-1.712***	-1.712***	-1.838***	-1.667***	-1.679***	-1.817***
	(0.023)	(0.023)	(0.026)	(0.023)	(0.023)	(0.026)
Fixed effects	Exporter-year, importer-year and industry					
Obs	1,726,604	1,726,604	476,551	1,726,604	1,726,604	473,162
R2	0.559	0.559	0.575	0.561	0.561	0.575

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Countries with higher share of foreign banks export relatively more in sectors more dependent on external finance

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Effect over and beyond impact of financial development on exports in sectors more dependent on external finance

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Impact more pronounced when foreign banks are headquartered in the importing country

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Economic effect:

- One st dev increase in FB means exports in sector at 75th pctile of external financing dependency are 7.3 pp higher than in sector at 25th pctile
- For IFB: 9.1 pp
- Comparison: for FD 29.4 pp

Robustness tests

- Adding importer-year-industry fixed effects
- Adding bilateral fixed effects
- Control for other country characteristics (including financial linkages) interacted with external finance dependency:
  - ✓ Institutions, financial linkages, factor endowments
- Control for domestic output
- Cluster by exporter-industry
- Study extensive margin:
  - ✓ Probit using dummy whether there is export from country *i* to country *j* in sector *s* at time *t*

The role of foreign banks in trade: event study

Empirical methodology

- Exploiting cross-sector variation in external financing needs importantly reduces endogeneity issues, but some reversed causality concerns might remain
- Foreign bank investment decisions not random
  - ✓ Possible they choose to invest in those countries where financing needs are high because of high exports, but local banks are not able to provide financing
  - ✓ Foreign banks might follow their multinationals
- Use sector interactions, so requires systematic correlation of foreign bank entry with exports and the sector-specific characteristic of external financing

Empirical methodology

- Conduct event study approach to establish causality (Trefler, 2004; Manova, 2008)
- *Event*: Bank from importing country *j* for the first time entered exporting country *i* (i.e. establishment of a new bilateral link)
  - ✓ Only between 1995 and 2004 to avoid impact global financial crisis
  - ✓ 193 entries by banks from 66 importing countries in 77 exporting countries

Empirical methodology

- Isolate impact of foreign bank presence on trade purely from within country changes over time.
- Identification rests on allowing the impact of foreign bank presence to differ with respect to dependency on external finance
- *Dependent variable*: the (log of) average exports from country *i* to country *j* in sector *s* between (*t+1*, *t+3)* and *(t-1*, *t-3)*, where *t* is the year of the event

Empirical methodology

- Our model:

$$\Delta E_{ijs} = \beta_1 extfin_s + \epsilon_t + \eta_{ijs},$$

- If entry of foreign bank from importing country plays a positive role in facilitating trade then:
  - ✓ Stronger export growth in industries with high dependency on external finance
  - ✓ $\beta_1 > 0$

Empirical methodology

- Control variables:
  - ✓ First-differencing effectively removes all sector-country pair fixed effects: control for variations in initial conditions at the sector-country pair level at the time of entry
  - ✓ In addition, control for event-year fe
- OLS, standard errors double clustered by exporter and by importer

Results

	Base	Controlling for pre-entry trend	No crisis in 3 years before entry	No equity market liberalization in 3 years before or after entry	Dependent variable is export growth between t-1 and t+4	Extensive margin
	[1]	[2]	[3]	[4]	[5]	[6]
Extfin	0.254***	0.138***	0.260***	0.293***	0.294***	0.328***
	(0.070)	(0.063)	(0.069)	(0.074)	(0.077)	(0.126)
Constant	0.316***	-0.008**	0.406***	0.307***	0.232***	0.161***
	(0.154)	(0.181)	(0.085)	(0.154)	(0.118)	(0.178)
Fixed effects	event-year fixed effects					
Obs	3,997	3,326	3,558	3,696	3,378	1,034
(Pseudo-)R2	0.045	0.038	0.047	0.051	0.071	0.020

- Within 3 years after entry of foreign bank from importing country, exports to this country grow 31.6 percent faster
- But impact stronger when sector more dependent on external finance

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<u>Economic effect:</u>

- Move from 25th to 75th pctile of external financing dependency increases growth rate with 8.1 percentage points (22 percent higher compared to mean)

Robustness

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- Possible that a pre-entry trend exists
- Control for this by taking difference in growth rates between "placebo-event" and real event
- The higher the need for external finance in sector, the higher the growth differential

Robustness

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- Focused on intensive margin (79 percent of observations)
- Also find impact on the extensive margin
- After entry probability that firms in sector start exporting to country in which bank headquartered is higher for sectors more dependent on external finance

Channels

- Question: *how* do foreign banks faciliate trade?
- Use event study and exploit that importing and exporting countries differ substantially in many dimensions
- Differentiate between globally active and non-globally active banks
  - ✓ Globally active banks more likely have specialized skills in trade financing
  - ✓ Globally active: all foreign banks whose parents are headquartered in top 10 countries when ranked according to number of exporting countries in which banks are active

Channels

- Globally active foreign banks
  - ✓ Tend to be especially benefical in exporting countries with low level of financial development
    - Suggests that (transfer of) specialized knowledge and technology for trade financing is important
  - ✓ Impact especially strong in exporting countries that lack creditor information
    - Suggests these banks can help overcome information problems
  - ✓ Impact not affected by strength of contracting environment and distance between exporting and importing country

Channels

- Non-globally active foreign banks
  - ✓ Only positive impact if foreign banks sufficiently important in financial intermediation in exporting country
    - Suggests that institutions have to be conducive to foreign banks for these banks to be able to have impact
  - ✓ Level of financial development or creditor information irrelevant, but (very) weak contract enforcement reduces beneficial impact
  - ✓ Beneficial impact diminishes with distance
    - Foreign banks easier operate in countries that are closer (Mian, 2006)

Conclusion

- Use unique dataset of bilateral foreign bank presence combined with data on bilateral sector exports for 95 exporting countries
- Foreign banks can facilitate trade
- Especially when large, globally active banks invest in financially underdeveloped countries
- Suggest foreign banks have important benefits for real economy
- Need to take this into account when assessing the future role of banks that are active internationally

THANK YOU