

# Banking Across Borders: Are Chinese banks different?

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**WORKSHOP ON BANKING AND FINANCE  
IN EMERGING MARKETS  
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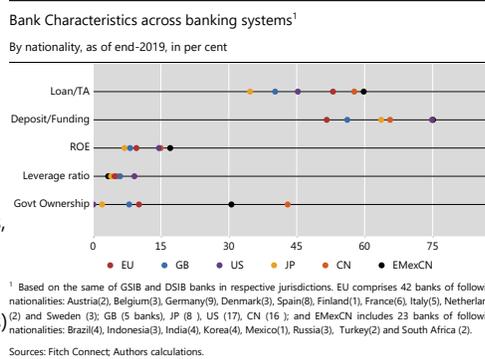


## Our research questions

**What drives the global footprint of Chinese banks? Are they different?**

### Motivation

- China is the 2<sup>nd</sup> largest economy, largest banking system (total assets)
- Chinese banks
  - 7% of cross-border bank claims,
  - Lending to 196 out of 216 countries,
  - Top lenders for 63 out of 143 EMDEs,
  - 24% of total EMDE lending,
  - Large government ownership (43%, comparable only to other EME banks)



## We find that...

**Are Chinese Banks Different?** To our surprise: *not really that much*

Chinese banks' type of global reach **resembles** AE Banks.

- Distance to their borrowing EMDEs is less of a barrier than that of other EMDE banks and more like US or European banks.
- This similarity is present despite Chinese banks' different ownership structure and more recent global expansion.

For most banks, bilateral economic **ties** (trade, portfolio flows, FDI) between lender and borrower countries **positively** correlate with cross-border lending.

- For CN banks (EMDE-to-EMDE lending):
  - Strong positive correlation with **trade** (Similar to US banks), but
  - No FDI effect,
  - Negative Ptf investment effect.

## Related Literature

**Gravity** models in cross-border finance.

- Porter & Rey 2005, Aviat & Coeurdacier 2017, Brei & von Peter 2017.

**Financial** holdings related to past **trade** and/or other **investments**, beyond gravity variables.

- Lane (2006) for equity holdings and trade.
- Lane and Milesi-Ferretti (2008) for bond holdings and trade.
- Andrade and Chhaochharia (2010) use historical FDI positions as proxy of information endowments for asset holdings.
- Karolyi, Ng, Prasad (2015) find that past trade and capital assets can generate information endowments for EME investors.

Our contribution

- **Nationality approach to global banking** Coppola et al 2020, Damgaard and Elkjaer 2017  
=> **distance** captures global network of affiliates
- **Other economic ties can reduce information asymmetries.** Caballero et al 2018, Claessens and van Horen 2020
- **Chinese banks' global expansion** Horn et al 2019

## Data and Sample

BIS LBSN (2018q2)

Cross-border claims by bank nationality " $XBC_{ij}$ "

Why claims by bank **nationality**?

- More comprehensive and detailed, as financial **centers** host many nationalities.
- More **reporters** than in consolidated data
- Construct **distance** measure: nationality-residence-borrower

Traditional **gravity** variables

- Distance, common language, colony, etc. (CEPII)

**Bilateral** international economic ties

- **Trade** (UN Comtrade Database)
- **Capital Flows**
  - FDI (Damgaard and Elkjaer 2017, reflecting the **ultimate** investment economy)
  - Portfolio investment (IMF CPIS)

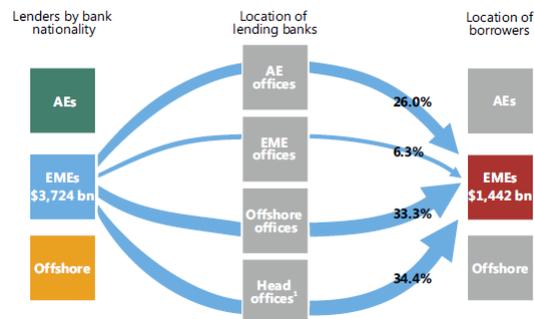
=> **cross-sectional** data on 39 lending parents, 185 borrower countries

## What is an appropriate distance measure in banking?

When EME banks lend to EMEs, only 1/3 is extended from home offices.

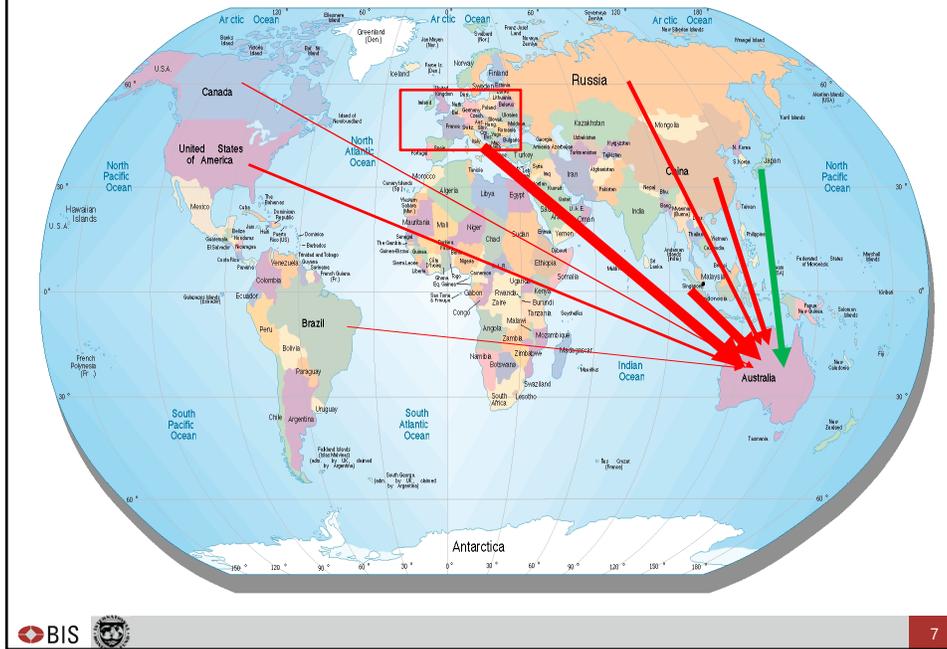
Cerutti, Koch and Pradhan 2018

For CN banks, 41% of EME lending via OFCs McGuire & van Rixtel 2012



=> global affiliate network!

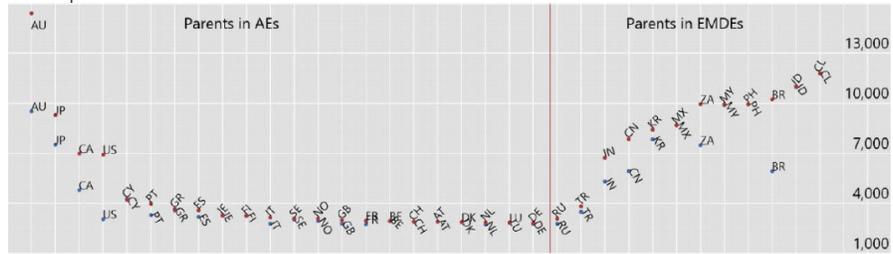
## Global network affiliates – distance matters!



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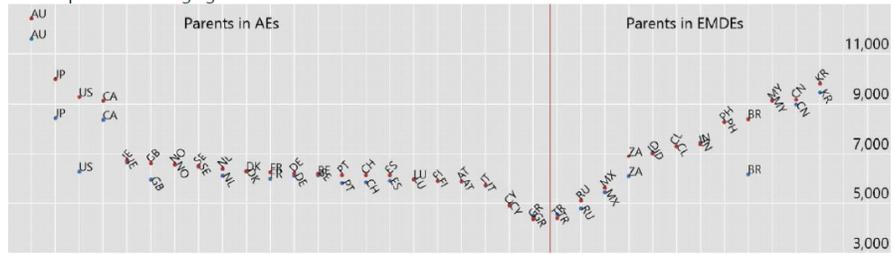
## Weighted distance < Simple distance

Counterparties in advanced countries



• Simple distance • Weighted distance

Counterparties in Emerging market economies



• Simple distance • Weighted distance

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# Empirical Analysis

## I. Cross-sectional approach

$$\ln(XBC_{lb}) = \alpha + \beta_d \ln(Dist_{lb}) + \beta'_g \mathbf{OtherGRAVITY}_{lb} + \beta'_e \ln(\mathbf{ECON}_{lb}) + \mathbf{FE}(\mathbf{PC}_l, \mathbf{BC}_b)' + \varepsilon_{lb} \quad (1)$$

With lending parent country "l" and borrowing country "b".

$XBC_{lb}$  cross-border claims, excl. interoffice (2018q2)

$Dist_{lb}$  distance

$\mathbf{GRAVITY}_{lb}$  common language, colony

$\mathbf{ECON}_{lb}$  Trade, Portfolio investment, FDI (lagged)

$\mathbf{FE}$  separate parent and borrowing country fixed effects

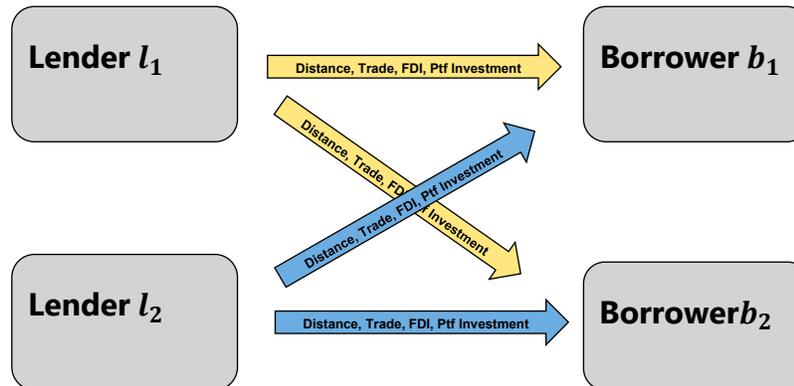
Standard errors clustered by parent country.

In line with theoretical derivations of gravitational models for financial holdings.

Okawa and van Wincoop 2012; Lane and Milesi-Ferretti 2008

## I. Cross-sectional approach

FE absorb country-specificities (size, financial system characteristics, etc.).



## I. Cross-sectional approach: Weighted distance

|                          | All counterparty countries |                      |                      |                      |                      |                      | AEs                 | EMDEs                | OFFs                 |
|--------------------------|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|----------------------|----------------------|
|                          | (1)                        | (2)                  | (3)                  | (4)                  | (5)                  | (6)                  | (7)                 | (8)                  | (9)                  |
| <b>Weighted Distance</b> | -1.609***<br>(0.137)       | -0.870***<br>(0.121) | -1.270***<br>(0.112) | -1.510***<br>(0.134) | -0.712***<br>(0.101) | -0.702***<br>(0.102) | -0.233*<br>(0.132)  | -0.808***<br>(0.144) | -1.007***<br>(0.247) |
| Colony (0/1)             | 1.568***<br>(0.399)        | 0.792***<br>(0.241)  | 1.389***<br>(0.318)  | 1.526***<br>(0.374)  | 0.774***<br>(0.231)  |                      |                     |                      |                      |
| Language (0/1)           | 0.922***<br>(0.239)        | 0.476**<br>(0.199)   | 0.626***<br>(0.215)  | 0.807***<br>(0.230)  | 0.300<br>(0.197)     |                      |                     |                      |                      |
| Trade                    |                            | 0.777***<br>(0.061)  |                      |                      | 0.651***<br>(0.064)  | 0.682***<br>(0.064)  | 0.676***<br>(0.094) | 0.660***<br>(0.072)  | 0.479***<br>(0.141)  |
| Investment               |                            |                      | 0.403***<br>(0.043)  |                      | 0.302***<br>(0.042)  | 0.307***<br>(0.042)  | 0.346***<br>(0.072) | 0.318***<br>(0.043)  | 0.336***<br>(0.091)  |
| FDI                      |                            |                      |                      | 0.115***<br>(0.032)  | 0.026<br>(0.024)     | 0.033<br>(0.025)     | 0.048**<br>(0.023)  | 0.062*<br>(0.033)    | 0.110*<br>(0.064)    |
| Adjusted R-square        | 0.702                      | 0.734                | 0.724                | 0.704                | 0.746                | 0.745                | 0.831               | 0.683                | 0.750                |
| R2_all-FF                | 0.0654                     | 0.0958               | 0.0870               | 0.0679               | 0.108                | 0.107                | 0.193               | 0.0492               | 0.142                |
| Observations             | 5,090                      | 5,090                | 5,090                | 5,090                | 5,090                | 5,090                | 1,071               | 3,700                | 319                  |
| Fixed Effects            | CPC+PC                     | CPC+PC               | CPC+PC               | CPC+PC               | CPC+PC               | CPC+PC               | CPC+PC              | CPC+PC               | CPC+PC               |
| PCs                      | 39                         | 39                   | 39                   | 39                   | 39                   | 39                   | 39                  | 39                   | 39                   |
| CPCs                     | 185                        | 185                  | 185                  | 185                  | 185                  | 185                  | 31                  | 143                  | 11                   |

## II. Cross-sectional approach: differences across lenders

$$\ln(XBC_{lb}) = \alpha + \beta_d \ln(Dist_{lb}) + \beta'_e \ln(ECON_{lb}) + (\gamma_{dl}' C_l(0/1) * \ln(Dist_{lb})) + \sum_{k=0}^3 (\gamma_{lk}' C_l(0/1) * \ln(ECON_{lb}^k)) + FE(PC_l, BC_b)' + \varepsilon_{lb} \quad (2)$$

With lending parent country  $l$  and borrowing country  $b$

$XBC_{lb}$  cross-border claims, excl. interoffice (2018q2)

$Dist_{lb}$  weighted distance

$ECON_{lb}$  Trade, Portfolio investment, FDI (lagged)

$C(0/1)$  indicator of parent country (AE, EME, CN, US, JP)

$FE$  separate parent and borrowing country fixed effects

Standard errors clustered by parent country.

## II. Cross-sectional approach: differences across lenders

|                             | Counterparty countries: Advanced |                     | Counterparty countries: EMDEs |                      |
|-----------------------------|----------------------------------|---------------------|-------------------------------|----------------------|
|                             | Simple<br>(1)                    | Weighted<br>(2)     | Simple<br>(3)                 | Weighted<br>(4)      |
| <b>Standalone Variables</b> |                                  |                     |                               |                      |
| Distance                    | -0.203<br>(0.246)                | -0.431**<br>(0.183) | -0.440*<br>(0.250)            | -0.666***<br>(0.192) |
| Trade                       | 0.597***<br>(0.123)              | 0.567***<br>(0.108) | 0.504***<br>(0.081)           | 0.521***<br>(0.084)  |
| Investment                  | 0.379***<br>(0.113)              | 0.371***<br>(0.107) | 0.366***<br>(0.045)           | 0.381***<br>(0.047)  |
| FDI                         | 0.120**<br>(0.058)               | 0.112*<br>(0.056)   | 0.115**<br>(0.046)            | 0.108**<br>(0.043)   |

- Simple distance **understates** the effect.
- Larger **distances** deter cross-border bank lending to EMDEs more than to AEs.
- Trade, portfolio investment and FDI, **positive** relationship.

## II. Differences across lenders: Distance\*C(0/1)

|                             | Counterparty countries: Advanced |                     | Counterparty countries: EMDEs |                      |
|-----------------------------|----------------------------------|---------------------|-------------------------------|----------------------|
|                             | Simple<br>(1)                    | Weighted<br>(2)     | Simple<br>(3)                 | Weighted<br>(4)      |
| <b>Standalone Variables</b> |                                  |                     |                               |                      |
| Distance                    | -0.203<br>(0.246)                | -0.431**<br>(0.183) | -0.440*<br>(0.250)            | -0.666***<br>(0.192) |
| <b>Interaction Effects</b>  |                                  |                     |                               |                      |
| Dist*CN(0/1)                | 1.221***<br>(0.285)              | -0.083<br>(0.204)   | -0.207<br>(0.255)             | -0.065<br>(0.200)    |
| Dist*US(0/1)                | 0.641**<br>(0.249)               | 0.361**<br>(0.170)  | -0.126<br>(0.345)             | -0.041<br>(0.163)    |
| Dist*JP(0/1)                | -3.274***<br>(0.956)             | 3.109***<br>(0.327) | -0.099<br>(0.254)             | -0.801***<br>(0.165) |
| Dist*EU(0/1)                | 0.156<br>(0.251)                 | 0.272<br>(0.209)    | -0.205<br>(0.252)             | 0.076<br>(0.208)     |
| Dist*EMDEexCN(0/1)          | -0.041<br>(0.307)                | -0.111<br>(0.246)   | -1.076**<br>(0.417)           | -0.699*<br>(0.358)   |

- Distance **less** pronounced for CN banks than for other EME banks.
- Distance for CN banks lending to EME borrowers **similar** to AE banks

## II. Differences across lenders: Trade\*C(0/1)

|                             | Counterparty countries: Advanced |                      | Counterparty countries: EMDEs |                      |
|-----------------------------|----------------------------------|----------------------|-------------------------------|----------------------|
|                             | Simple<br>(1)                    | Weighted<br>(2)      | Simple<br>(3)                 | Weighted<br>(4)      |
| <b>Standalone Variables</b> |                                  |                      |                               |                      |
| Distance                    | -0.203<br>(0.246)                | -0.431**<br>(0.183)  | -0.440*<br>(0.250)            | -0.666***<br>(0.192) |
| Trade                       | 0.597***<br>(0.123)              | 0.567***<br>(0.108)  | 0.504***<br>(0.081)           | 0.521***<br>(0.084)  |
| <b>Interaction Effects</b>  |                                  |                      |                               |                      |
| Trade*CN(0/1)               | -0.097<br>(0.078)                | -0.163*<br>(0.084)   | 0.452***<br>(0.083)           | 0.453***<br>(0.083)  |
| Trade*US(0/1)               | -0.195**<br>(0.084)              | -0.299***<br>(0.092) | 0.398***<br>(0.066)           | 0.408***<br>(0.073)  |
| Trade*JP(0/1)               | -0.475***<br>(0.078)             | -0.419***<br>(0.087) | 0.228**<br>(0.087)            | 0.176*<br>(0.090)    |
| Trade*EU(0/1)               | 0.041<br>(0.100)                 | 0.031<br>(0.104)     | 0.189**<br>(0.093)            | 0.226**<br>(0.091)   |
| Trade*EMDEexCN(0/1)         | 0.195<br>(0.157)                 | 0.177<br>(0.158)     | 0.061<br>(0.108)              | 0.091<br>(0.107)     |

- **Bilateral Trade more** pronounced for CN banks, similar to US banks when lending to EME borrowers.

## II. Differences across lenders: Ptf Investment\*C(0/1)

|                              | Counterparty countries: Advanced |                            | Counterparty countries: EMDEs |                             |
|------------------------------|----------------------------------|----------------------------|-------------------------------|-----------------------------|
|                              | Simple<br>(1)                    | Weighted<br>(2)            | Simple<br>(3)                 | Weighted<br>(4)             |
| <b>Standalone Variables</b>  |                                  |                            |                               |                             |
| Distance                     | -0.203<br>(0.246)                | <b>-0.431**</b><br>(0.183) | -0.440*<br>(0.250)            | <b>-0.666***</b><br>(0.192) |
| Trade                        | 0.597***<br>(0.123)              | 0.567***<br>(0.108)        | 0.504***<br>(0.081)           | 0.521***<br>(0.084)         |
| Investment                   | 0.379***<br>(0.113)              | 0.371***<br>(0.107)        | 0.366***<br>(0.045)           | <b>0.381***</b><br>(0.047)  |
| <b>Interaction Effects</b>   |                                  |                            |                               |                             |
| Investment*CN(0/1)           | 0.312***<br>(0.099)              | 0.389***<br>(0.096)        | -0.601***<br>(0.062)          | <b>-0.590***</b><br>(0.062) |
| Investment*US(0/1)           | -0.018<br>(0.089)                | -0.025<br>(0.089)          | -0.040<br>(0.047)             | -0.060<br>(0.049)           |
| Investment*JP(0/1)           | 0.370***<br>(0.095)              | 0.250**<br>(0.093)         | 0.025<br>(0.048)              | 0.046<br>(0.050)            |
| Investment*EU(0/1)           | -0.018<br>(0.101)                | -0.013<br>(0.098)          | -0.123**<br>(0.057)           | -0.129**<br>(0.059)         |
| Investment*<br>EMDEexCN(0/1) | -0.093                           | -0.080                     | -0.088                        | -0.080                      |

- Portfolio investment has a **negative** correlation for CN banks to EME borrowers.

## II. Differences across lenders: FDI\*C(0/1)

|                             | Counterparty countries: Advanced |                            | Counterparty countries: EMDEs |                             |
|-----------------------------|----------------------------------|----------------------------|-------------------------------|-----------------------------|
|                             | Simple<br>(1)                    | Weighted<br>(2)            | Simple<br>(3)                 | Weighted<br>(4)             |
| <b>Standalone Variables</b> |                                  |                            |                               |                             |
| Distance                    | -0.203<br>(0.246)                | <b>-0.431**</b><br>(0.183) | -0.440*<br>(0.250)            | <b>-0.666***</b><br>(0.192) |
| Trade                       | 0.597***<br>(0.123)              | 0.567***<br>(0.108)        | 0.504***<br>(0.081)           | 0.521***<br>(0.084)         |
| Investment                  | 0.379***<br>(0.113)              | 0.371***<br>(0.107)        | 0.366***<br>(0.045)           | 0.381***<br>(0.047)         |
| FDI                         | 0.120**<br>(0.058)               | 0.112*<br>(0.056)          | 0.115**<br>(0.046)            | <b>0.108**</b><br>(0.043)   |
| <b>Interaction Effects</b>  |                                  |                            |                               |                             |
| FDI*CN(0/1)                 | 0.121<br>(0.085)                 | 0.102<br>(0.081)           | -0.170***<br>(0.053)          | <b>-0.162***</b><br>(0.053) |
| FDI*US(0/1)                 | -0.034<br>(0.068)                | 0.004<br>(0.065)           | -0.181***<br>(0.045)          | -0.137***<br>(0.048)        |
| FDI*JP(0/1)                 | -0.054<br>(0.057)                | -0.110*<br>(0.056)         | -0.185***<br>(0.049)          | -0.273***<br>(0.045)        |
| FDI*EU(0/1)                 | -0.141**<br>(0.063)              | -0.137**<br>(0.060)        | -0.056<br>(0.066)             | -0.054<br>(0.063)           |
| FDI*EMDEexCN(0/1)           | 0.056<br>(0.110)                 | 0.056<br>(0.108)           | -0.064<br>(0.067)             | -0.034<br>(0.066)           |

### III. Isolating Chinese banks: policy initiatives

Explore China's specific arrangements:

- Belt and Road Initiative (BRI)
- swap lines

#### Findings

- Confirms positive **trade** effect.
- BRI indicator is insignificant.
- Swap line marginally significant

| Variables                   | X=BRI 2015             |                          |                        |                          | X=Swap line            |                          |                        |                          |
|-----------------------------|------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|------------------------|--------------------------|
|                             | Simple distance<br>(1) | Weighted distance<br>(2) | Simple distance<br>(3) | Weighted distance<br>(4) | Simple distance<br>(5) | Weighted distance<br>(6) | Simple distance<br>(7) | Weighted distance<br>(8) |
| <b>Standalone Variables</b> |                        |                          |                        |                          |                        |                          |                        |                          |
| Distance                    | -0.524<br>(0.472)      | -0.337<br>(0.665)        | -0.600<br>(0.498)      | -0.432<br>(0.755)        | -0.200<br>(0.381)      | -0.210<br>(0.593)        | -0.280<br>(0.382)      | -0.345<br>(0.547)        |
| X                           | -0.302<br>(0.649)      | 3.590<br>(10.688)        | -0.363<br>(0.674)      | 2.585<br>(10.532)        | 1.359*<br>(0.720)      | 0.437<br>(7.583)         | 1.360*<br>(0.715)      | -0.942<br>(7.419)        |
| Trade                       | 0.935***<br>(0.190)    | 0.922***<br>(0.248)      | 0.936***<br>(0.189)    | 0.920***<br>(0.248)      | 0.932***<br>(0.190)    | 0.952***<br>(0.208)      | 0.928***<br>(0.189)    | 0.946***<br>(0.207)      |
| Investment                  | -0.038<br>(0.185)      | -0.037<br>(0.338)        | -0.042<br>(0.184)      | -0.034<br>(0.336)        | -0.150<br>(0.206)      | -0.217<br>(0.237)        | -0.149<br>(0.203)      | -0.213<br>(0.231)        |
| FDI                         | 0.032<br>(0.133)       | 0.047<br>(0.223)         | 0.031<br>(0.131)       | 0.043<br>(0.219)         | 0.042<br>(0.134)       | 0.027<br>(0.157)         | 0.037<br>(0.132)       | 0.016<br>(0.154)         |
| <b>Interaction Effects</b>  |                        |                          |                        |                          |                        |                          |                        |                          |
| X*Distance                  |                        | -0.460<br>(1.060)        | -0.357<br>(1.057)      |                          | 0.103<br>(0.693)       |                          | 0.249<br>(0.680)       |                          |
| X*Trade                     |                        | 0.032<br>(0.441)         | 0.043<br>(0.433)       |                          | -0.163<br>(0.556)      |                          | -0.156<br>(0.556)      |                          |
| X*FDI                       |                        | -0.018<br>(0.293)        | -0.021<br>(0.287)      |                          | 0.002<br>(0.322)       |                          | 0.015<br>(0.320)       |                          |
| X*Investment                |                        | -0.011<br>(0.391)        | -0.025<br>(0.388)      |                          | 0.370<br>(0.434)       |                          | 0.365<br>(0.431)       |                          |
| Constant                    | 3.233<br>(4.848)       | 1.554<br>(6.794)         | 3.929<br>(5.019)       | 2.442<br>(7.549)         | 0.208<br>(3.995)       | 0.290<br>(6.042)         | 0.960<br>(3.968)       | 1.562<br>(5.578)         |
| Observations                | 137                    | 137                      | 137                    | 137                      | 137                    | 137                      | 137                    | 137                      |
| R-squared                   | 0.354                  | 0.355                    | 0.355                  | 0.356                    | 0.368                  | 0.372                    | 0.368                  | 0.373                    |

### Summary and policy implications

We find that: Chinese banks' type of global reach resembles a lot AE Banks.

- Distance to their borrowing EMDEs less of a barrier than that of other EMDE banks and more like US or European banks,
- Also strong positive correlation with trade (Similar to US banks),
- But, no FDI effect and Negative Ptf investment effect.

#### Policy Implications

- If recent **trade tensions** translate into a significant decline in global trade, we would **expect that cross-border bank lending would also fall**.
- If the ongoing **liberalization** of ptf investment makes China more similar to other AE and EME countries, we could expect a further **increase** in CN cross-border bank lending.

## Thank you

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