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Chinese Banks and Their EMDE Borrowers: Have Their Relationships Changed in Times of Geoeconomic Fragmentation?

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ABSTRACT: While Chinese banks have become the top cross-border lender to EMDEs, their expansion has slowed recently, both in terms of volume and market share. Also, the strong correlation of China's bilateral trade and its banks' cross-border lending has weakened, while during 2020-22 lending became more positively correlated with FDI. In our paper, we analyse these patterns and we explore the role of borrower risk variables and foreign policies. Our findings show that, although the shifting correlation from trade to FDI is a general EMDE phenomenon, China's Belt and Road Initiative reinforces it. By contrast, borrowers that potentially benefit from geoeconomic fragmentation do not display stronger FDI-lending relationships. We also find that Chinese banks exhibit different levels of risk tolerance relative to other bank nationalities as borrower country risk variables are positively correlated with Chinese banks' market shares, but not with their amounts of cross-border lending.

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WORKING PAPERS

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Prepared by Catherine Casanova, Eugenio Cerutti, and Swapan-Kumar Pradhan [1]

[1] Cerutti is at the International Monetary Fund (IMF), Casanova at the Swiss National Bank (SNB) and Pradhan are at the Bank of International Settlements (BIS). We thank Katharina Bergant, Yingyuan Chen, Bryan Hardy, Ken Kang, Nir Klein, Goetz von Peter, Dmitry Plotnikov, Christoph Trebesch, as well as the seminar participants at the IMF Macrofinancial Seminar, ECB and Bank of Italy 2024 China Expert Workshop, the Kiel-Göttingen-CEPR Workshop on China, and BIS and SNB internal seminars. The views expressed in this article are those of the authors and do not necessarily reflect those of the BIS, the IMF, or the SNB.

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I. Introduction

Bilateral economic relationships, including Chinese cross-border bank lending, were affected by the COVID pandemic and geoeconomic fragmentation trends. Currently, China is not only the second largest economy in the world and a trade powerhouse, but also has the world's largest banking system. For most emerging market and developing economies (EMDEs), Chinese banks are the largest cross-border creditors.[1] While the geographical distribution of Chinese banks' claims resembles that of banks from advanced economies (AE) along several dimensions, they differed pre-pandemic in some specific way: their cross-sectional geographical distribution pattern was correlated more than any other bank nationality with trade. By contrast, there was no such strong correlation with FDI, and, unlike all other creditor banks, their lending was correlated negatively with Chinese portfolio investment patterns (Cerutti, Casanova, and Pradhan, 2023). Since 2020, global cross-border bank lending has slowed down and many other relationships have been affected. The magnitude of China's cross-border claims has also received special attention since the pandemic, especially due to discussions about the large sovereign indebtedness of some low-income countries (Horn et al, 2021 and 2023). In this context, a better understanding of Chinese banks' cross-border bank lending behavior is key for assessing potential risks and spillovers during challenging times with increasing levels of geoeconomic fragmentation (Aiyar et al 2023).

The aim of this paper is to analyze the evolution of the global footprint of Chinese banks and its potential drivers like bilateral economic ties, borrower risk variables, and policy initiatives. As dependent variables, we study both outstanding amounts and market shares between 2017 and 2022. Our focus is on Chinese cross-border bank lending to EMDEs, with our novel usage of market shares helping us to put Chinese banks' behavior into perspective relative to that of other reporting bank nationalities worldwide. As potential drivers, we take bilateral economic ties, borrower characteristics and policy initiatives into account. More precisely, bilateral economic ties between borrower and lender country capture trade, FDI and portfolio investments of China with each borrowing EMDE. As borrower-side characteristics we use borrower risk variables such as the EMDE's debt burden, the rating of the respective sovereigns' debt, whether the country is a fuel and/or commodity exporter, as well as an indicator about the country's governance, covering corruption perceptions. In terms of foreign policies, we then take political or security considerations into account. As China-specific policy initiatives, we explore the role of central bank swap lines as well as the Belt and Road Initiative (BRI). With respect to the borrower countries' foreign polies, we consider two variables on geoeconomics fragmentation. First, we follow Gopinath et al (2024) by studying the role of connector countries defined as borrowers that substitute for declining Chinese imports to the US. Second, we consider the borrower countries' voting behavior in the UN General Assembly by drawing on the "International Political Distance" (IPD) measure developed by Bailey et al (2017). Finally, we study the role of sanctions, by looking at military, financial and trade sanctions that imposed by Western countries on EMDE borrower countries.

To get a complete, undistorted picture, taking a nationality perspective of the BIS locational banking statistics (BIS LBS) is key. Only a nationality perspective captures the global business of Chinese banks, including the lending behavior of foreign affiliates besides the headquarters' business. Foreign affiliates stand behind the global reach of international banks and they are key to understanding their business. International banks lend across borders with loans booked either from the home country of their headquarters, or by their affiliates

[1] Since 2016, Chinese banks have represented the largest banking system in the world (Cerutti and Zhou, 2018). Their foreign claims are substantial, although those seem relatively small when compared to their domestic business.

(branches or subsidiaries) located abroad (either in financial centers or third countries/jurisdictions). Following Cerutti, Koch, and Pradhan (2018) and Cerutti, Casanova, and Pradhan (2023), we take advantage of both publicly and non-publicly available BIS locational banking statistics (LBS) in order to exploit the banks' nationality perspective while using the residence perspective to capture the important role of bank affiliates abroad.[2]

Against the backdrop of a slowing global expansion, the pre-pandemic trend of Chinese banks' global expansion changed, with recent data revealing more diverse patterns. We document that Chinese banks significantly increased their cross-border bank lending to EMDEs between 2016 and 2019.[3] Their market share grew by about 5 percentage points, reaching almost 17 percent of the total cross-border bank lending to EMDEs when the pandemic hit. Ever since, Chinese banks' cross-border lending has slowed, although 65 EMDE borrowers (out of 140 EMDEs) still have Chinese banks as their top lender in 2023.

Three findings emerge from our empirical analysis of Chinese banks' cross-border lending to EMDEs. First, we show that the correlation patterns of cross-border lending and bilateral economic ties have changed significantly since the pandemic. As highlighted in Cerutti, Casanova, and Pradhan (2023), before the pandemic bilateral trade was strongly correlated with the amount of cross-border bank lending by Chinese banks. This relationship has significantly weakened. During the 2020-22 period, it is bilateral FDI that has turned out to be much more positively correlated with both outstanding amounts and market shares of Chinese banks' cross-border lending. By contrast, portfolio investment mostly displays a negative correlation, which, as highlighted in Cerutti, Casanova, and Pradhan (2023), is explained by the bias in Chinese investment of debt and equity towards AEs.

Second, our results suggest that borrower country characteristics also shape the lending outcomes, especially in terms of market shares. While higher corruption perceptions do not themselves translate into larger amounts of Chinese cross-border lending, the market share of Chinese banks was clearly positively correlated with this variable, capturing a different level of risk tolerances relative to other bank nationalities during the entire period 2017-2022. Although to a lower degree, something similar happened with EMDE debt burden capacity in terms of total debt service payments to government revenues. Chinese banks increased their market shares, on average, vis-à-vis other bank nationalities in countries with higher debt burden. While all other bank nationalities were more inclined to lend to EMDE commodity exporters across both periods, Chinese banks lent even more to those countries, but only pre-pandemic. That latter finding equally applies to both the outstanding amounts and market shares of cross-border lending.

Our third set of findings relates to various foreign policies and geopolitical considerations. While BRI participation of the borrower country and the presence of PBOC swap lines with the borrower's central bank generally increased the amounts of Chinese banks' cross-border lending, higher market shares were only associated with BRI participation, especially post-pandemic. Also, we find that BRI membership augments the correlation between cross-border lending and FDI, especially during 2020-22. By contrast, we do not find a reinforcing of the correlation between cross-border lending and FDI in the case of EMDE borrowers that could potentially benefit from geoeconomic fragmentation, such as connector countries (displaying already in our

[2] This paper differs from our previous work along the following dimensions: (i) we exploit confidential data from 2016 to 2022; (ii) we study the evolution of markets shares as they allow us to explore how and why Chinese banks' lending behavior deviates from global trends; and (iii) we take a closer look at borrower risk characteristics, sanctions, and China-specific policies.

[3] Cross-border bank lending as defined in this paper excludes claims by foreign affiliates on the home country of their headquarters.

sample simultaneous increases in export shares to the US as well as imports and FDI from China) or countries voting closer with the US at the UN (capturing potential present and/or future access to the US markets). Regarding sanctions, there is no evidence that Chinese banks have systematically taken advantage of Western countries military, financial, and trade sanctions on specific borrower countries and increased lending to those countries, on average.

Our contributions to the literature are threefold. First, we provide a novel analysis of the evolution of Chinese banks' cross-border lending that not only focuses on Chinese banks, but also their lending evolution relative to that of other reporting bank nationalities. In this context, our analysis complements the expanding literature on Chinese financial flows to EMDEs. Agarwal, Gu, and Prasad (2020) analyze the allocation patterns of Chinese institutional investors, which constitute the main channel for foreign portfolio investment outflows during 2010s. Somewhat more closely related, Horn et al (2021) focused on Chinese official lending—which includes direct lending by the Chinese state and state-owned Chinese entities— from 1949 to 2017. They document that much of China's external lending is official, meaning that it is undertaken by the Chinese government, state-owned policy banks, or state-owned commercial enterprises and banks. Also, they highlight that the terms of China's state-driven international loans typically resemble commercial rather than official lending.[4] Cerutti, Casanova, and Pradhan (2023) offered a similar coverage of Chinese banks as our current paper, but their analysis was limited to a cross-sectional analysis capturing 2018 while comparing borrowers in AEs and EMDEs. Our new findings highlight that some key relationships changed since 2020. In addition, our novel analysis of market shares is an important contribution relative to the large emerging literature on Chinese official and/or private lending, which does not compare Chinese banks' behavior with that of other bank nationalities.

Second, we expand the type of borrower country characteristics. The typical analysis of cross-border bank lending based on the BIS international banking statistics has often used panel regressions with demand-related borrower country control variables. The goal often was to analyze demand-side forces such as borrower country GDP growth (e.g., among others, McGuire and Tarashev 2008 and Cerutti 2015), the credit cycle with credit growth to the private sector variables (Avdjiev and Takats 2019), and/or the related creditworthiness of borrowers in a given economy with borrower country fiscal and current account performance variables (Avdjiev and Takats 2019). Other variables related to the healthiness of public finances and/or the external sector have been often been included, because economies with more fiscal space tend to be more resilient in the face of adverse external shocks (Kaminsky, Reinhart, and Vegh, 2005) and higher current account deficits make economies more vulnerable to sudden stops and reversals (Milesi-Ferretti and Razin, 2000; Calvo, Izquierdo, and Mejia, 2004). We follow that trend, but our focus is on the borrower country risk variables, such as debt burden capacity, sovereign country ratings, and corruption perceptions, with the objective to capture variables that might drive the risk perception of cross-border bank lenders. In addition, we include indicator variables highlighting fuel- or commodity-exporting countries.

Third, our analysis sheds light on the relationship between Chinese banks' global business and Chinese policy initiatives, such as the BRI, and geoeconomic fragmentation trends. The BRI is a China-led effort to improve connectivity and regional cooperation on a trans-continental scale through large-scale investments (Nedopil, 2023). While new vehicles have been formed to help with the financing, such as the Silk Road Fund, most of the Chinese funding for these projects originates from both state-directed development and commercial banks

[4] While our analysis does not include the Chinese government and state-owned non-bank commercial enterprises, our coverage of Chinese banks is more comprehensive—it covers all deposit-taking banks, including Chinese development banks and state-owned commercial banks—and allows a comparison with other bank nationalities.

(OECD 2018). In addition, our analysis also complements recent papers that analyze Chinese "rescue" operations (e.g., through Central bank swap lines and/or official lending). Horn et al (2023) highlight that almost all Chinese rescue loans have gone to low- and middle-income BRI countries with significant debts outstanding to Chinese banks. Our results highlight the importance of the BRI as well as the close relationship that Chinese banks have with their most dependent borrowers, especially in terms of even higher levels risk tolerance. We also contribute to the quickly expanding literature on geoeconomic fragmentation by providing the first evidence on Chinese banks' cross-border lending. Gopinath et al (2024) find that the extent of the reallocations across importing partners and FDI sources has surged since the onset of the COVID-19 pandemic. Our analysis documents a shift in the correlation of Chinese cross-border bank lending from trade to FDI during 2020-22. Although this shift seems to be a more general phenomenon across all EMDE borrowers, our findings suggest that this FDI-lending correlation is higher for countries part of the BRI. By contrast, countries often highlighted as potentially benefiting from geoeconomic fragmentations trends, such as connector countries or countries voting closer to the US in the UN GA, have not experienced higher FDI-lending correlation in the case of EMDE borrowers.[5]

The still growing international footprint of Chinese banks and their already dominant role vis-a-vis EMDE borrowers demands a better understanding of how their lending evolves. This is particularly true in the current situation with increasing levels of geoeconomic fragmentation. The international financial environment during the 2020s has been very difficult for many EMDEs, especially for frontier economies that have remained without access to international bond markets. Not only did they need to cope with the pandemic's impact on domestic and global activity, but also did they face challenges from the global monetary tightening.

The rest of the paper is structured as follows. Section II shows the overall evolution of cross-border lending in terms of quarterly FX-corrected amounts as well as market shares. Section III describes our empirical approach, while Section IV presents the main results. Finally, Section V summarizes our conclusions.

[5] See Annex Table 7 for the list connector countries that we identified. Annex Table 10 describes our variables, data sources, and where applicable, the methodology to derive them.

II. Expansion of Chinese Banks' Cross-Border Lending

Taking a nationality perspective is important for analyzing the expansion of Chinese banks. It paints a more complete, undistorted picture of global banking than the frequently used concept of residence. According to the nationality perspective in the BIS LBS, claims of resident banks in different reporting jurisdictions are attributed to the home country of banks. As pointed out by Cerutti, Casanova, and Pradhan (2023), this is especially important in the case of Chinese banks' cross-border lending. About 40 percent of their cross-border claims to EMDEs are extended from their home country, while 12 percent are extended from offices in host AEs, and about 43 percent are extended from host offshore centers and the rest from offices in other host EMDEs as of end-2022.

The recent rise in the number of BIS reporting countries offers a unique opportunity to map and analyze the evolution of cross-border banking relationships worldwide not only for AE banks, but also for banks from EMDEs. This is especially the case for Chinese banks. They started to report in 2016, with aggregate figures covering, among other banks, the three policy banks (China Development Bank, the China Export-Import Bank, and the Agricultural Development Bank of China) as well as China's four largest commercial banks by assets that are state-owned (Industrial and Commercial Bank of China, Bank of China, China Construction Banks, Agricultural Bank of China).[6] The BIS data, however, also has its limitations. Cross-border claims that are extended by Chinese bank' affiliates located in non-BIS reporting countries cannot be allocated to their respective parent bank. That said, the BIS data is still the most comprehensive dataset on bank lending that exists globally by capturing information from 47 reporting countries.

Chinese banks expanded significantly over the recent years, with their foreign affiliates playing a key role. The share of Chinese banks' cross-border lending in all parent banks' lending is about 7 percent of total claims on all borrowers worldwide. But the global footprint of Chinese banks is very concentrated on EMDE borrowers. Chinese banks account for about 17percent of all claims extended by banks worldwide to borrowers in EMDEs as of end-2022.[7] Moreover, 65 EMDEs already borrowed more from Chinese banks than from any other bank nationality in 2022. Further, Chinese banks tend to extend these EMDE claims by affiliates located abroad. While the foreign affiliates of Chinese parent banks only account for about 44 percent of China's total claims on all borrowers worldwide, for borrowers in EMDEs, that share reaches more than 60 percent.

[6] As highlighted in BIS (2019), the definition of "banks" conforms to other widely used definitions, such as "Deposit-taking corporations, except the central bank" used in the System of National Accounts (SNA) and in the Balance of Payments Manual (BPM6); or "other (than central bank) depository institutions" used in the IMF money and banking statistics. Across reporting countries, being a deposit-taking institution also captures mortgage and financial institutions that are licensed as credit institutions, as this license permits them to accept deposits even if they do not do so. In the case of China, the BIS LBS do not include the insurance corporation Sinosure.

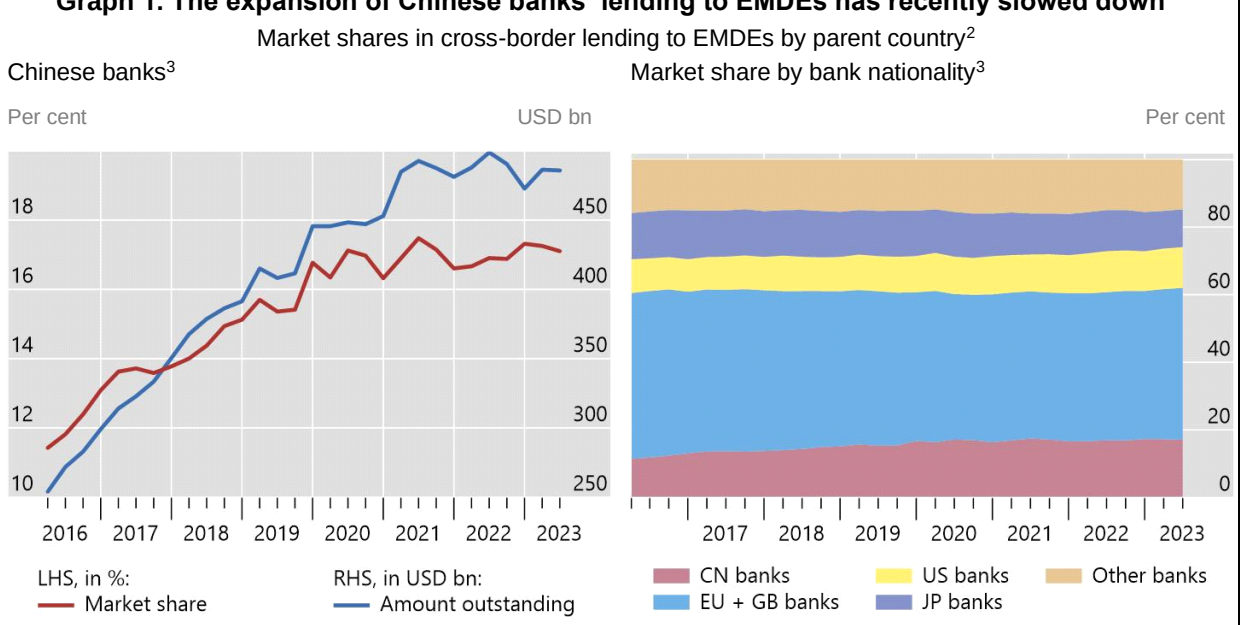
[7] Excluding large cross-border claims by foreign affiliates on home (China) country. This figured is based on a counterparty country breakdown of cross-border claims by Chinese banks reported by China and more than 30 BIS reporting countries hosting Chinese banks (source: BIS locational banking statistics by nationality).

A. Evolution of Cross-Border Bank Lending and Market Shares

Although Chinese banks grew their market share in cross-border lending to EMDEs by one third from when they started to report to BIS in 2016 to 2019, more recent evidence suggests that it peaked during the pandemic. Overall, the market share of Chinese cross-border bank lending increased by 5 percentage points over the 2016-2019 period (Graph 1). In 2016, Chinese banks made up about 11 percent of all outstanding loans on borrowers in EMDEs. This market share increased during the pre-pandemic years, reaching 17 percent in 2019. This increase in Chinese banks' market share was mostly at the expense of European and Japanese banks, but not US banks. And, it is worth noting that technical or accounting procedures do not explain this increase. Our figures take exchange rate fluctuations into account as both the currency composition of outstanding loans as well as the relative value of an outstanding loan in a specific currency denomination might have changed. In our empirical analysis, we will explore the changing patterns described below while taking correlations with other economic activities and borrower characteristics into account.

Graph 1. The expansion of Chinese banks' lending to EMDEs has recently slowed down[1]

Market shares in cross-border lending to EMDEs by parent country[2]



[1] Yearly changes (Fx- and break-adjusted) are added to Q4 2015 stocks in subsequent years. [2] Cross-border claims on 140 EMDEs while excluding claims on the home country of respective EDME parents (so-called backflows). [3] As a percentage of total cross-border claims on EMDEs by all 36 parents.

Sources: BIS locational banking statistics (by nationality); authors' calculation.

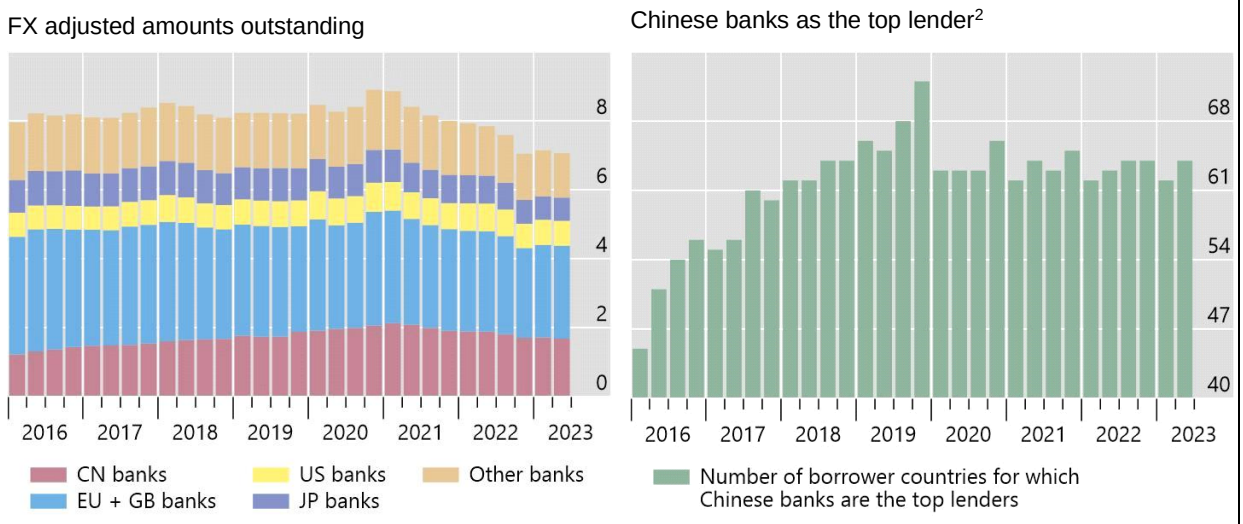
While there is a lot of heterogeneity across EMDEs, many EMDE borrowers have became very dependent on Chinese banks' lending over time. These increases in cross-border bank lending were large enough to trigger an increase in Chinese banks' cross-border bank claims relative to these EMDE borrowers' GDP. On average, Chinese banks' lending rose from 1.4 percent of borrowers' GDP in 2016 to 1.9 percent percent in 2019 (Graph 2, left-hand panel). At first sight, these figures seem relatively small, but they mask substantial size differences across individual EMDE borrowers, which includes large EMDEs. For example, for Laos the stock of outstanding

cross-border bank loans reaches more than 90 percent of the country's GDP in 2022. For Djibouti, Cambodia, Liberia, Maldives and Tonga between 20 to 45 percent.[8]

The pandemic triggered a slowdown in global cross-border bank lending, but with a lot of heterogeneity across time and lenders. During the early COVID-19 pandemic quarters (2020Q1-Q3), Chinese banks increased their market share in cross-border lending to EMDEs, on average, but starting in 2020Q4 that pattern changed. Chinese banks even slightly decreased their average market share in cross-border lending. Other bank nationalities also reduced their cross-border bank lending during several quarters. The overall slowdown in cross-border bank lending to EMDEs is such that a fall in the stock of the total cross-border bank lending as percentage of EMDE borrowers' GDP is clearly visible (Graph 2, left-hand panel).

Graph 2. Chinese banks' lending as share of their borrowers' GDP falls after the pandemic

Lending to EMDEs as shares of the borrower country's GDP by bank nationality[1], in percent



[1] The sample relates to cross-border claims on 141 EMDEs, excluding claims on home country of respective EMDE parent banks. [2] Cross-border lending to 140 EMDEs, excluding China as borrower country.

Sources: IMF World Economic Outlook (April 2023); BIS locational banking statistics (by nationality); authors' calculation

From the perspective of individual borrowers, the number of countries for which China is the most important lender slightly decreased. As of end 2019, for 72 EMDEs, Chinese banks were the most important lender among all bank nationalities extending cross-border loans to them (right-hand panel of Graph 2). That number of most dependent borrowers fell during the pandemic, stabilizing at around 65 out of a total of 140 EMDE borrowers.

[8] For Marshall Islands, an offshore destination, that figure reaches even more than 1000 percent of the country's GDP. For confidentiality reason, actual percentage figures are not quoted.

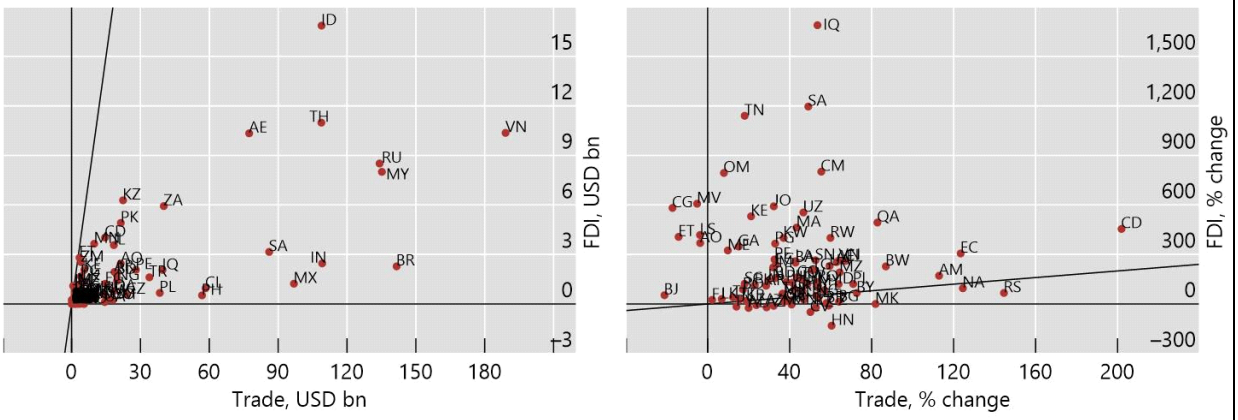
B. Evolution of Chinese Trade and FDI

While other financial relationships of China with EMDEs are mostly driven by trade, the role of Chinese FDI has increased significantly after the pandemic. The left-hand side panel of Figure 3 shows that the average amount of trade during 2020-22 has been much larger than the average 2020-22 FDI for most EMDEs, especially for large EMDEs. Nonetheless, China's bilateral FDI and trade patterns changed during 2020-22. As shown in the right-hand panel of Figure 3, bilateral FDI volumes saw much higher increases than trade for most EMDE counterparty countries.

Graph 3. China's Trade and FDI[1]

Based on average amounts during the period

Average amounts during 2020-22, in USD billion[2] Percentage change in 2020-22 compared to 2016-19



[1] Based on sample of 86 counterparty countries in EMDEs. [2] KR values are (311.47, 7.7)

Sources: IMF CDIS; COM Trade; authors' calculation

C. What Does the Average Borrower of Chinese Banks Look Like?

The average borrower country of Chinese banks differs from that of other bank nationalities. We focus on five different measures to capture the creditworthiness or risk profile of the different EMDE borrower countries in our sample (Graph 4). First of all, we resort to two IMF measures on whether or not a country is a commodity and/or fuel exporter and, second, an index on how corrupt a borrower country is perceived to be. Further, we use the average rating of the sovereign across a range of public rating agencies to reflect the markets' perception of a country's creditworthiness. Finally, to assess a country's debt burden, we use two alternative measures: i) external public debt over GDP and ii) total debt service relative government revenues.[9]

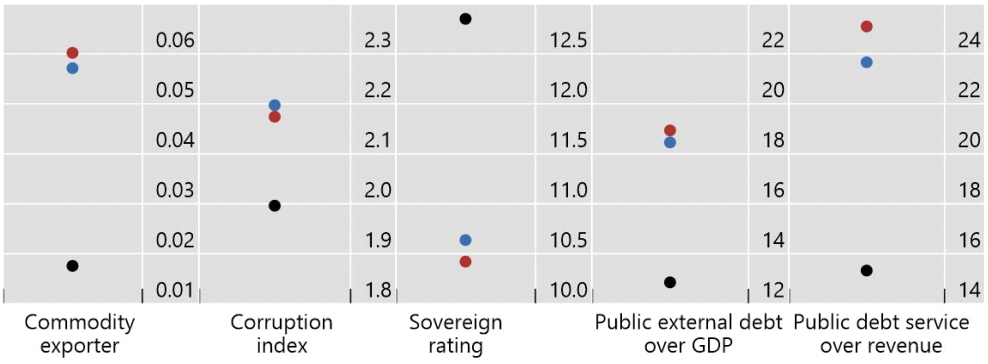
For each lending parent bank, we can create a stylized borrower country profile with average characteristics across all its borrowers. To do so, we proceed by borrower characteristic and use bilateral outstanding volumes

[9] Annex Tables 3 and 4 give the descriptive statistics of our empirical analysis. Note that for the descriptive statistics the borrower characteristics are implicitly weighted by the number of observations in our panel data and they rely on the whole sample period from 2016 to 2022. By contrast, the graphs presented in this section use outstanding volumes as weights while drawing on figures from 2022.

of cross-border loans as weights and then sum across all 85 borrowers that enter our empirical analysis for each lending parent country in a particular year. Our aim is to contrast the typical borrower of Chinese banks (red and blue dots in Graph 4) with that of all other reporting bank nationalities. For the comparison group (black dots), we weight all parent banks except for China by their total outstanding credit.

Graph 4. Average borrowers' profile of Chinese banks and other lenders, end-2022[1]

Weighted by share of cross-border lending to counterparty borrowing countries



The Corruption index has been rescaled such that lower scores mean that a borrower country is perceived as being less corrupt. To do so, we have set the lowest score to zero and then we divided by the standard deviation of the new scores.

Red coloured symbols = Chinese banks as top lenders to 35 out of 85 EMDE borrowers; Blue coloured symbols = Chinese banks as lenders to 86 EMDE borrowers; Black coloured symbols = Other 35 bank nationalities[2] as lenders to 86 EMDE borrowers.

[1] The list of counterparty countries is restricted to 85 EMDEs as in the regression sample. [2] Weighted score derived for all individual bank nationalities, and then the aggregate score for 35 bank nationalities is calculated as weighed score of individual parents.

Sources: IMF Fiscal Survey; BIS locational banking statistics; authors calculations

The average borrower country of Chinese banks is more likely to be a commodity exporter, less creditworthy and/or riskier than the comparison profile revealed by other lending bank nationalities. While blue dots in Graph 4 show the average borrower across all EMDEs that Chinese banks lend to, the red dots isolate the subset of borrowers for which Chinese banks are the most important lenders and which are thus most dependent on Chinese banks. Black dots reflect the comparison profile of an average borrower that all other bank nationalities typically lend to. Blue and red dots tend to be close, while black dots show some distance to them. This suggests that the average borrower from Chinese banks differs significantly from the comparison group in that it is more likely to be a commodity exporter, is perceived as more corrupt, carries a lower sovereign rating and reports higher debt burdens in terms of public external debt and debt service both scaled, respectively.

D. Sanctions Imposed by China and/or Western Countries

Besides China-specific policies like the Belt and Road Initiative (BRI) or swap line agreements that the PBOC has in place with other central banks, sanctions might have an impact on Chinese banks' cross-border lending to EMDE borrowers. We focus on military sanctions in our empirical baseline analysis, as they can be considered more exogenous to global cross-border lending practices. That said, military sanctions might still deter banks from extending cross-border loans in the presence of geopolitical tensions between a bank's parent country and the respective borrower country. Vice versa, sanctions might also give an opportunity for other bank nationalities to fill the gap if their parent country is not the one imposing them. In this section, we illustrate the occurrence of sanctions that later enter our empirical analysis. We distinguish between military, trade and financial sanctions as described in and provided by Syropoulos et al (2022).

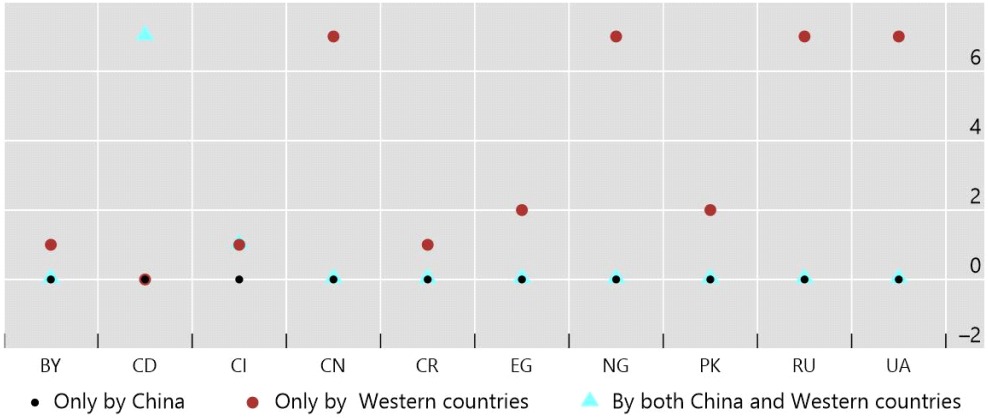
While financial sanctions are the most frequently imposed type of sanctions from Western countries, for China it is trade sanctions that are most frequently imposed, but at a lower level that other countries. Our illustration takes into account whether Western countries[10] imposed sanctions on a standalone basis, China imposed them on a standalone basis, or whether China and Western countries imposed a specific type of sanction on a particular EMDE in parallel. Hence, Graphs 5 to 7 show the number of years for which sanctions are imposed by either one of these groups. For military sanctions, there is only one country, namely the Democratic Republic of Congo, on which both China and Western countries imposed them during our entire sample period of 6 years (see blue triangle for CD in Graph 5).

Trade sanctions are the most frequently applied type of sanctions by China, which on a standalone basis are imposed on some Eastern-European countries. Besides, there is one country where Chinese trade sanctions are imposed in parallel to Western countries (Bulgaria). For financial sanctions, there is effectively no country on which China imposes sanctions on a standalone basis, but three African countries on which they are imposed in parallel (Democratic Republic of the Congo, Nigeria and Rwanda). Our empirical analysis primarily takes military sanctions into account, while trade and financial sanctions only enter the in-depth analysis of Chinese cross-border lending and the impact of policies.

[10] We use "Western countries" as a simplification to refer to sanctions imposed by: AT, AU, BE, CA, DE, DK, ES, FI, FR, GB, GR, IE, IT, JP, LU, NO, NL, PT, SE or US.

Graph 5. Military sanctions by China and Western countries[1]

Number of years with imposed sanctions during 2016-2022

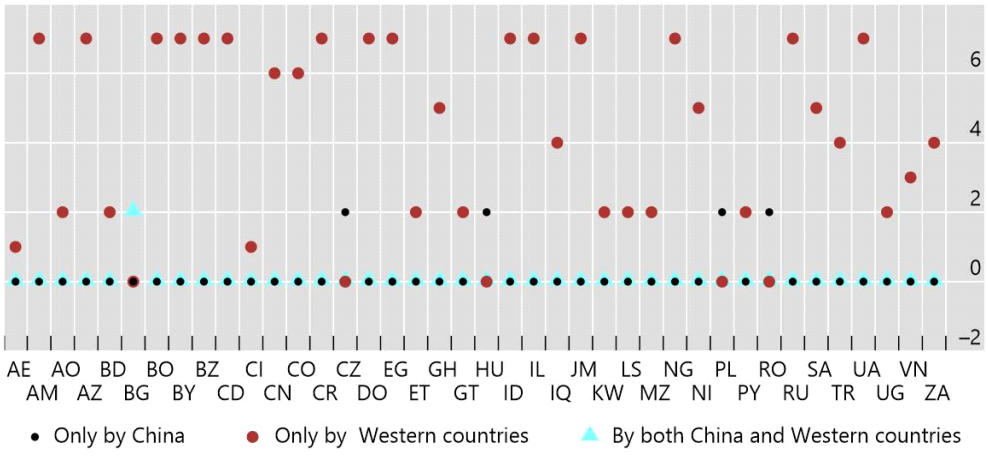


1 The list of counterparty countries is restricted to 86 EMDEs as in the regression sample. 2 Black dots represents 0 occurrence of military sanctions imposed only by China.

Sources: Global sanctions database (Syropoulos et al, 2022); authors calculations

Graph 6. Trade sanctions by China and Western countries[1]

Number of years with imposed sanctions during 2016-2022

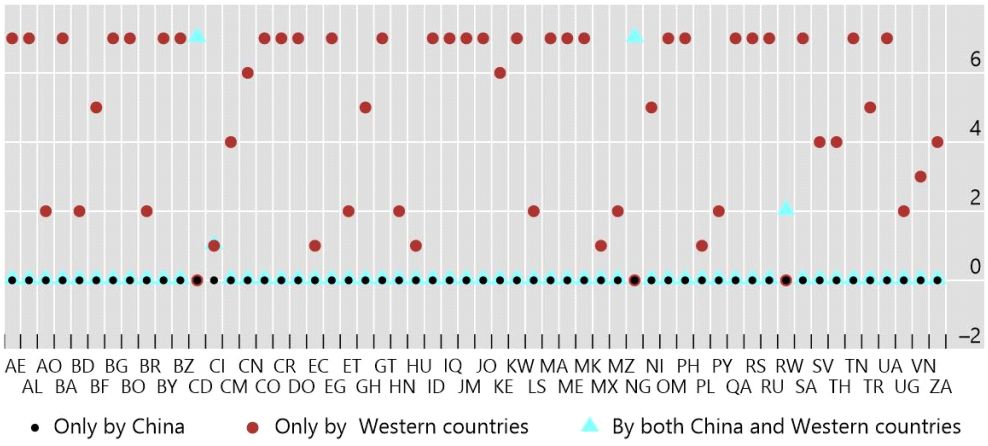


1 The list of counterparty countries is restricted to 86 EMDEs as in the regression sample. 2 Black dots represents 0 occurrence of military sanctions imposed only by China.

Sources: Global sanctions database (Syropoulos et al, 2022); authors calculations

Graph 7. Financial sanctions by China and Western countries[1]

Number of years with imposed sanctions during 2016-2022



1 The list of counterparty countries is restricted to 86 EMDEs as in the regression sample. 2 Black dots represents 0 occurrence of military sanctions imposed only by China.

Sources: Global sanctions database (Syropoulos et al, 2022); authors calculations

III. Empirical Approach

This section presents our empirical approach, to uncover shifting correlation patterns. We proceed in three stages, by starting with a general setup including all lending parent countries, then highlighting differences with Chinese banks as lenders on average, and finally restricting the analysis to Chinese banks only to fully exploit their borrower heterogeneity (BRI, central bank swap lines, Chinese sanctions). We apply these stages to annual panel data with up to 86 emerging or developing countries as borrowers for the years 2017 to 2022.[11] We then split that entire period into a pre-pandemic period ranging from 2017 to 2019 and a second period covering the years 2020 to 2022. Annex Tables 3 and 4 provide some descriptive statistics on the full sample with all bank lending nationalities and the smaller sample only capturing Chinese banks as lenders.

A. General Approach: How Lending Relates to Economic Ties and Borrower Characteristics

Our baseline regression studies the effect of distance, bilateral economic ties and borrower country characteristics on two different variables capturing cross-border bank lending. In this context, the dependent variable ($Lending_{l,b,t}$) refers to the logged amount of outstanding loans between lender country *l* to borrowers in country *b* in year *t.*

$$Lending_{l,b,t} = \alpha + \beta_d \ln(Dist_{lb}) + \boldsymbol{\beta_e'} \ln\left(\boldsymbol{ECON_{l,b,t-1}}\right) + \boldsymbol{\beta_b'} \boldsymbol{Borrower\_CPC_{b,t-1}} + \boldsymbol{FE}(Lender\_PC) + \boldsymbol{FE}(Y) + \varepsilon_{l,b,t} \quad (1)$$

[11] While the sample size of borrower countries is kept at 85 countries in most tables to keep it constant across specifications due to data availability issues with some borrower country characteristics, we have checked that the results for Trade and FDI are similar for a sample of about 140 countries if we restrict the analysis to bilateral economic ties and distance.

As covariates, we borrow from the gravity literature. First, we let the weighted distance measure from Cerutti, Casanova, and Pradhan (2023) act as an overall proxy for informational frictions $\ln(Dist_{lb})$.[12] Second, the 3x1 vector $\mathbf{ln}(\boldsymbol{ECON}_{\boldsymbol{l,b,t-1}})$ refers to the logged volume of bilateral trade as the sum of imports and exports, $\ln(Trade_{l,b,t-1})$, total portfolio investment capturing debt plus equity investment, $\ln(Investment_{l,b,t-1})$ and foreign direct investment denoted as $\ln(FDI_{l,b,t-1})$. As a way to mitigate potential endogeneity concerns, we lag these economic relationship variables by one year.[13] This gravitational approach originates from the trade literature, as highlighted in Cerutti, Casanova, and Pradhan (2023). Highlighting the role of information asymmetries, the gravitational approach has been frequently applied in empirical studies of cross-border finance (e.g., Aviat and Coeurdacier, 2007; Buch, 2002, Lane, 2006; Lane and Milesi-Ferretti, 2008; Porter and Rey, 2005). Also, a series of theoretical contributions has supported such models for financial holdings (e.g., Okawa and van Wincoop, 2012).

Further, we let different borrower country characteristics enter specification (1). The vector $\boldsymbol{Borrower\_CPC}_{\boldsymbol{b,t-1}}$ captures two binary variables with $Sanction_{b,t-1}$, indicating whether any western country/China had imposed military sanctions on the respective borrower country in the previous year and $Commo_b$ highlighting borrower countries that export a lot of fuel or commodities. The vector also features an index for corruption with higher values of $Corrupt_{b,t-1}$ signaling countries that are perceived as relatively more corrupt.[14] Finally, the vector brings in two different measures of the debt burden, $DebtBurden_{b,t-1}$ either defined as external public debt relative to GDP or public debt service over government revenues. All variants of specification (1) feature separate lender parent-country fixed effects that absorb time-invariant lender country characteristics (like economic size and banking system characteristics) and year fixed effect.

B. Highlighting Chinese Banks as Lenders

As a second step, we highlight the nuances when Chinese banks act as lending parent bank nationality. To do so, we interact all covariates with an indicator $C_{l,b,t}(0/1)$ signaling that Chinese banks stand behind the bilateral lending relationship either by extending credit from their headquarters or any affiliated located abroad.

$$Lending_{l,b,t} = \alpha + \beta_d \ln(Dist_{lb}) + \boldsymbol{\beta_e'}\,\mathbf{ln}(\boldsymbol{ECON}_{\boldsymbol{l,b,t-1}}) + \boldsymbol{\beta_b'}\boldsymbol{Borrower\_CPC}_{\boldsymbol{b,t-1}} \quad (2)$$
$$+\gamma_d C_{l,b,t}(0/1) * \ln(Dist_{lb}) + \boldsymbol{\gamma_e'}\boldsymbol{ln}(\boldsymbol{ECON}_{\boldsymbol{lb}}^{\boldsymbol{k}}) * C_{l,b,t}(0/1)$$
$$+ \boldsymbol{\gamma_b'}\boldsymbol{Borrower\_CPC}_{\boldsymbol{b,t-1}} * C_{l,b,t}(0/1) + \boldsymbol{FE}(Lender\_PC) + \boldsymbol{FE}(Y) + \varepsilon_{l,b,t}$$

[12] This weighted distance measure goes beyond the traditional simple geographical distance between the capitals of borrower and lender countries used in gravitational models, by taking both the nationality perspective and banks' organizational lending structures into account. This measure covers not only the cross-border lending of international banks from their headquarters, but also the global network of affiliates as highlighted in the literature. It weighs, across all locations (home and foreign BIS reporting countries) from where a given bank nationality extends cross-border claims to a specific borrower country, each location-borrower distance by the relative importance of this location for the respective borrower-lender bank relationship. For interoffice transfers, defined as cross-border funds that local affiliates in the borrower country receive from their headquarters or other affiliates in third BIS reporting countries, are assigned a notional one-kilometer distance since the affiliate and the borrower are in the same country. This variable is available at https://www.eugeniocerutti.com/datasets.

[13] As robustness checks, Section IV (footnote 14) describes the results when using dynamic panel estimation techniques and when using lender parent country-by-year fixed effects instead of separate fixed effects to address these two dimensions.

[14] Javorcik and Wei (2009) has shown that a high level of corruption is likely to exacerbate information asymmetries in cross-border investment. Also, corruption is often used as a component of proxies for country risk/sovereign risk (see Panizza (2017) for a discussion.

Now, the dependent variable ($Lending_{l,b,t}$) either refers to i) the logged amount of outstanding loans between lender country *l* to borrowers in country *b* in year *t,* or ii) the market share of lender country *l* relative to all lenders that extend loans to borrowers in country *b* in year *t* Otherwise, specification (2) builds on the previous specification featuring the same lending outcomes, $Lending_{l,b,t}$ and covariates. Again, we add separate lender parent-country and year fixed.

C. Focusing on Chinese Lenders with Interactions of Borrower Characteristics

In our third stage of the analysis, we isolate Chinese banks as lenders in order to be able to explore some China-specific variables in the analysis. First, we again build on specification (1), but only use bilateral lending outcomes $Lending_{l,b,t}$ for Chinese banks.

$$Lending_{l,b,t} = \alpha + \beta_d \ln(Dist_{lb}) + \boldsymbol{\beta_e'} \ln\left(\boldsymbol{ECON_{l,b,t-1}}\right) + \boldsymbol{\beta_b'} \boldsymbol{Borrower\_CPC_{b,t-1}} + \boldsymbol{\delta_p'} \boldsymbol{Policy_{l,b,t-1}}(\mathbf{0/1}) + \boldsymbol{FE}(Y) + \varepsilon_{l,b,t} \quad (3)$$

Again, the dependent variable ($Lending_{l,b,t}$) either gives the logged amount of outstanding loans between China and borrowers in country *b* in year *t,* or ii) the market share of Chinese banks as lenders relative to all lenders that extend loans to borrowers in that particular borrower country *b* in year *t.* Besides the borrower country characteristics, we take foreign policy initiatives by China into account. The indicator variable $\boldsymbol{Policy_{l,b,t-1}}(\mathbf{0/1})$ captures, for instance, whether or not the borrower country is part of the Belt and Road Initiative (BRI) or whether the local central bank maintains a swap line with the Peoples Bank of China (PBOC). All variants of specification (3) include year fixed effects.

Finally, to better understand the correlations between Chinese FDI and bilateral cross-border bank lending, we use interaction effects. Specification (4) adds the respective interactions of FDI and trade with specific policy variables that also capture geoeconomic fragmentation trends.

$$Lending_{l,b,t} = \alpha + \beta_d \ln(Dist_{lb}) + \boldsymbol{\beta_e'} \ln\left(\boldsymbol{ECON_{l,b,t-1}}\right) + \boldsymbol{\beta_b'} \boldsymbol{Borrower\_CPC_{b,t-1}} + \boldsymbol{\delta_p'} \boldsymbol{Policy_{l,b,t-1}}(\mathbf{0/1}) + \boldsymbol{\rho_F'} \boldsymbol{Policy_{l,b,t-1}}(\mathbf{0/1}) * \ln\left(FDI_{l.b,t-1}\right) + \boldsymbol{\rho_T'} \boldsymbol{Policy_{l,b,t-1}}(\mathbf{0/1}) * \ln\left(Trade_{l.b,t-1}\right) + \boldsymbol{FE}(Y) + \varepsilon_{l,b,t} \quad (4)$$

More specifically, as policy variables, in addition to joining the BRI, we also take into account that some borrower EMDEs could benefit from geoeconomic fragmentation trends. First, we create a group of “connector countries” for borrowers that might have helped offset lower US imports from China by simultaneously reporting higher export shares to the US as well as higher shares of imports and of FDI from China. Second, we consider the voting behaviour of borrowers in the UN General Assembly as a measure of geopolitical distance. To do so, we createan indicator that signals a voting behavior that is relatively close to that of the US based on Ideal Point distance (IPD) estimates by Bailey et al (2017). Voting closer with the US could potentially bring present and/or future access to the US markets.

IV. Empirical Results

Our empirical analysis of correlation patterns proceeds in three stages. We start by exploring how the evolution of cross-border bank claims as well as market shares broadly correlates with trade, FDI, portfolio, geographical distance, and other borrower specific characteristics capturing indebtedness, perceptions of corruption, being a commodity exporter, and the presence of Western (US, EU or Japanese) sanctions on that particular borrower. Then, we examine whether the effects of those variables on cross-border lending and market shares differ for Chinese banks. In the third stage, we isolate the cross-border lending of Chinese banks. We study some specific China-specific policies, such as BRI participation or central bank swap lines before taking other types of sanctions, geoeconomic fragmentation proxies, and the effects for most dependent borrower countries into account.

A. A Board Analysis Across All Bank Nationalities

The evolution of the amount of cross-border bank lending seems to be correlated with both bilateral economic ties and borrower country characteristics. Table 1 presents our cross-border lending results for all 36 lending parent banks and 85 EMDE borrower countries based on specification (1). Besides bilateral economic ties, we study the impact of borrower characteristics, such as the perception of its governance (i.e., corruption perceptions), being a commodity and/or fuel exporter, exhibiting a high debt burden and maybe poor sovereign rating as well as being sanctioned by Western countries. For the debt burden, we use two different indicators of indebtedness that relate to a borrowers' repayment capacity. More precisely, as our DebtBurden measure, columns 1-3 refer to external public debt over GDP and columns 4-5 feature total debt service relative government revenues. Further, we distinguish between 3 different periods. Columns 1 and 4 present the whole sample period from 2016-2022, columns 2 and 4 feature 2016-2019 and columns 3 and 6 feature 2020 to 2022.

Overall, bilateral economic ties between the borrower and the lender countries positively correlate with outstanding volumes of bilateral cross-border lending. As captured in Table 1, cross-border lending is clearly, on average, a positive function of lagged trade, FDI and portfolio investment, even when adjusted for foreign-exchange fluctuations and breaks in series[15,16]. There are no clear differences on the magnitudes of these correlations before (2016-19) and after (2020-22) the pandemic. As highlighted by Cerutti, Casanova, and Pradhan (2023), in their cross-sectional 2018 analysis, the positive correlation patterns with bilateral economic ties might indicate complementarities between international banking and other types of economic interaction. These complementarities could be driven by different motivations. One such motivation might be a "follow your customer considerations" (Buch 1999, Claessens and van Horen 2015). Another motivation might be that the other economic ties reduce information asymmetries between borrower and lender, in the sense of the information endowments presented by Andrade and Chhaochharia (2010). Moreover, geographical distance

[15] In all our regressions, when the dependent variable is labelled as the amount of cross-border lending, we use outstanding bilateral stocks that are fx- and break-adjusted. For our empirical analysis, we winsorize these adjusted volumes at the 1%-level in each tail and transform with the logarithm to have ln(X+1). Only positive outstanding amounts enter the analysis while missing bilateral claims are replaced by zeros.

[16] When using cross-border lending flows instead of stocks, our results broadly point into the same direction. For example, the perception of corruption reveals similar statistically significant patterns.

between lender and borrower has also the expected negative sign.[17] This negative correlation captures information asymmetries between borrower and lender countries. In addition, as included in other papers of the literature (e.g., Avdjiev et al 2022, Cerutti and Hong 2021), GDP growth seeks to control for demand factors in the counterparty country. The results are a bit mixed, with a positive albeit barely significant coefficient in the post pandemic period.

Borrower country-specific characteristics are also playing a role for the average outstanding amount of cross-border bank lending, broadly confirming our expectations. We find evidence that for a commodity exporting countries, outstanding amounts of bilateral cross-border bank lending tend to be higher. By contrast, for countries with higher corruption perceptions, outstanding amounts of cross-border bank lending are lower. The presence of Western military sanctions also seems to negatively weigh on cross-border bank lending post-pandemic. Results on our measures of debt burden and sovereign rating are less conclusive at this stage. Higher amounts of public external debt to GDP are positively correlated with cross-border lending, but the coefficient is relatively small (a one standard deviation of public external debt to GDP would increase lending by just 0.08 percent).[18]

[17] Following Cerutti, Casanova, and Pradhan (2023), our distance measure goes beyond the traditional simple geographical distance between the capitals of borrower and lender countries used in gravitational models, by taking both the nationality perspective and banks' organizational lending structures into account.

[18] We also explore different types of dynamic panel estimations. First, we add the lag of the dependent variable to the set of regressor shown in specification (1). Annex Table 1B presents those results. Our findings for the economic ties and borrower characteristics remain intact. Some borrower characteristics turn less significant, while others become even more significant. Apart from adding the lagged dependent variable, we estimate a dynamic panel for small T and large N as most appropriately handled in Stata's "xtdpdml" command. However, that sophisticated command only runs on a subset of our data, namely for a strictly balanced panel in terms of borrower-lender relationships and up to 4 years of data. Hence, our results for the 2017-2019 period with one year of lags as shown in columns 2 and 5 generate qualitatively similar results. Further, we restricted our sample to those bilateral relationships that existed for the full 2017-22 period while using standard estimation techniques. In this way, we could avoid that those entries and exits of bilateral relationship affect our results. Our key findings remained intact. The results of all these robustness checks are available upon request.

Table 1. How Cross-border Lending Relates to Bilateral Ties and Borrower Characteristics

FX- and break-adjusted stocks *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.296***	0.310***	0.280***	0.287***	0.301***	0.271***
	(0.009)	(0.012)	(0.013)	(0.009)	(0.012)	(0.013)
FDI	0.171***	0.171***	0.171***	0.171***	0.170***	0.171***
	(0.006)	(0.009)	(0.009)	(0.006)	(0.009)	(0.009)
PFI	0.293***	0.292***	0.297***	0.293***	0.291***	0.298***
	(0.008)	(0.011)	(0.012)	(0.008)	(0.011)	(0.012)
Dist	-0.302***	-0.330***	-0.284***	-0.315***	-0.347***	-0.293***
	(0.018)	(0.025)	(0.026)	(0.019)	(0.025)	(0.026)
DebtBurden	0.004***	0.004***	0.003***	0.001	0.002	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
SovRating	0.008*	0.006	0.011*	-0.000	-0.002	0.002
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
Corruption	-0.244***	-0.233***	-0.249***	-0.265***	-0.255***	-0.270***
	(0.021)	(0.030)	(0.030)	(0.021)	(0.030)	(0.030)
Commodity	0.409***	0.409***	0.412***	0.419***	0.421***	0.417***
	(0.024)	(0.034)	(0.034)	(0.024)	(0.034)	(0.034)
WSanction	-0.062	0.032	-0.168**	-0.086*	0.009	-0.199***
	(0.049)	(0.065)	(0.075)	(0.049)	(0.065)	(0.075)
∆GDP	0.032	-0.719***	0.347**	-0.007	-0.689***	0.277
	(0.141)	(0.245)	(0.172)	(0.143)	(0.251)	(0.173)
Constant	2.043***	2.328***	1.874***	2.375***	2.678***	2.184***
	(0.187)	(0.257)	(0.266)	(0.171)	(0.234)	(0.244)
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.745	0.747	0.743	0.744	0.747	0.743
Fixed Effects	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table shows the estimation results as presented in specification (1) for 36 lending parent countries (PCs) and up to 86 borrower countries (BCs). The dependent variable is the logarithm of outstanding cross-border bilateral lending with ln(X+1). Only positive outstanding amounts enter the analysis while missing bilateral claims are replaced by zeros. Outstanding stocks are fx- and break-adjusted and then winsorized at the 1%-level in each tail. Trade, FDI, PFI and distance enter the analysis in logs. ∆GDP is in % and all other variables are either indicators or categorial variables referring to the borrower counterparty country. WSanction refers to military sanctions that are imposed by Western countries on the respective borrower countries All covariates are lagged by one year. Columns 1-3 show the results for Debt Burden as external public debt scaled by GDP, while Columns 4-6 show those for public debt service over government revenues. Columns 1 and 4 refer to the full period ranging from 2016 to 2022, while columns 2 and 5 isolate the years 2016-19 and columns 3 and 6 only show 2020-22. All columns include separate lending parent and year fixed effects. Annex Table 3 exhibits the corresponding descriptive statistics, Annex Table 5 gives the bank nationalities, Annex Table 6 lists all included counterparty countries and Annex Table 10 describes our variables and data sources. Standard errors in parentheses are clustered by lending parent country. Robust standard errors in parentheses with *** p<0.01, ** p<0.05, * p<0.1

B. Are Chinese Banks Different?

Is there anything special about Chinese banks' cross-border lending? To answer this question, we build on the similar full sample regression presented in Table 1, but we now interact our variables with an indicator when Chinese parent banks act as lenders as described in equation (2). Then, we include a novel analysis where the dependent variable is the market share of Chinese cross-border bank lending for each EMDEs. That share helps us to put the Chinese banks' behavior into perspective as it allows us to study how their cross-border lending to a specific borrower deviates from that of other bank nationalities[19]. First with respect to the correlation patterns of other economic ties such as trade of FDI and lending. And, second with respect to the risk profile of borrowers that is reflected in the borrower characteristics.

For Chinese banks, it seems that FDI correlations have gained in importance at the expense of trade relationships since the pandemic. Our results on the amount of bilateral lending suggest that there are some core differences for Chinese banks, but these differences also seem to change over time. The interaction coefficients for trade captures that Chinese banks have a higher positive correlation with trade than the average bank nationality, but that this was a pre-pandemic phenomenon only (Table 2). Chinese banks' cross-border lending correlation with trade was more than 1.5 times the average of other nationalities during pre-pandemic years, and it returned to the average during 2020-22. The opposite seems to be happening with FDI, the correlation with FDI was more than double during the pandemic, but insignificant in 2017-19. Instead, distance does not display a much different correlation from the average bank nationality. Portfolio investment was overall negatively correlated, before and after the pandemic, with cross-border lending in the case of Chinese banks. Overall, these results align well with the 2018 cross-sectional findings in Cerutti, Casanova, and Pradhan (2023), and the specific negative correlation pattern with portfolio investment can be explained by the Chinese concentration of portfolio investment in AEs.

Regarding the borrower characteristics, our regression results suggest that the average correlations with Chinese banks' lending differ significantly from that of other global bank nationalities. There are some parallels with the average borrower in Graph 4, but the regression results go several steps further as they offer a more insightful perspective by controlling for other factors throughout the estimation period. Five core findings emerge from that analysis of outstanding stocks. First, Chinese banks lend relatively more to EMDE borrowers with high public debt service to revenue ratios, especially after the pandemic (columns 4-6). Second, EMDE debt risks as measured by the rating of sovereign debt seem to deter cross-border lending by Chinese banks relatively more when considering the full period. Third, the interaction coefficients with the perception of corruption index are not statistically significant. This result suggests that, while Chinese banks do not deviate significantly, banks generally curtail their cross-border lending when facing borrowers whose perception of being corrupt is relatively higher. Fourth, Chinese banks seem to lend more to countries imposed with Western military sanctions. Fifth, being a commodity exporter increases Chinese banks' cross-border lending above the positive average shown by other bank nationalities' correlations with cross-border bank lending to these borrowers, especially during the pre-Covid period.

[19] In total we capture 36 bank lending nationalities including China. Other bank nationalities entering our sample are AT, AU, BE, BH, BR, CA, CH, CL, CN, CY, DE, DK, ES, FI, FR, GB, GR, ID, IE, IN, IT, JP, KR, LU, MX, MY, NL, NO, PA, PH, PT, RU, SE, TR, US and ZA as also described in Annex Table 5. Please note that our analysis is conducted at the bilateral level of a national banking system and their borrower countries. With respect to the lending bank nationality, our observations hence capture different regulatory frameworks, the presence of different banking groups and other banking system characteristics at the aggregate level. See Cerutti, Casanova, and Pradhan (2023) for an analysis of average characteristics of the banking systems.

Table 2. Chinese Banks' Lending Patterns Differ from that of Other Bank Nationalities

FX- and break-adjusted stocks *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.291***	0.304***	0.275***	0.283***	0.295***	0.268***
	(0.009)	(0.012)	(0.013)	(0.009)	(0.012)	(0.013)
FDI	0.162***	0.167***	0.156***	0.162***	0.166***	0.156***
	(0.006)	(0.009)	(0.009)	(0.006)	(0.009)	(0.009)
PFI	0.303***	0.300***	0.310***	0.303***	0.299***	0.312***
	(0.008)	(0.011)	(0.012)	(0.008)	(0.011)	(0.012)
Dist	-0.312***	-0.339***	-0.294***	-0.324***	-0.355***	-0.301***
	(0.019)	(0.026)	(0.027)	(0.019)	(0.026)	(0.027)
DebtBurden	0.003***	0.004***	0.003***	0.001	0.002	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
SovRating	0.011**	0.008	0.014**	0.002	0.000	0.004
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
Corruption	-0.254***	-0.244***	-0.256***	-0.273***	-0.265***	-0.277***
	(0.021)	(0.030)	(0.030)	(0.021)	(0.029)	(0.030)
Commodity	0.387***	0.392***	0.384***	0.395***	0.403***	0.387***
	(0.024)	(0.034)	(0.034)	(0.024)	(0.034)	(0.034)
WSanction	-0.077	0.014	-0.177**	-0.101**	-0.007	-0.210***
	(0.050)	(0.066)	(0.076)	(0.050)	(0.065)	(0.076)
Trade*CN	0.368***	0.472***	-0.009	0.344***	0.441***	-0.028
	(0.104)	(0.152)	(0.123)	(0.102)	(0.150)	(0.122)
FDI*CN	0.147***	0.055	0.563***	0.132***	0.043	0.537***
	(0.049)	(0.058)	(0.072)	(0.049)	(0.056)	(0.072)
PFI*CN	-0.392***	-0.428***	-0.312***	-0.423***	-0.458***	-0.349***
	(0.070)	(0.108)	(0.083)	(0.070)	(0.111)	(0.084)
Dist*CN	-0.070	-0.059	0.054	-0.159	-0.178	-0.025
	(0.146)	(0.255)	(0.171)	(0.138)	(0.243)	(0.158)
DebtBurden*CN	0.007	0.010	0.009	0.014***	0.013	0.015***
	(0.005)	(0.008)	(0.006)	(0.005)	(0.011)	(0.005)
SovRating*CN	-0.091***	-0.092	-0.045	-0.085**	-0.104*	-0.037
	(0.035)	(0.057)	(0.043)	(0.034)	(0.055)	(0.042)
Corruption*CN	0.132	0.115	0.364	0.119	0.069	0.348
	(0.202)	(0.317)	(0.225)	(0.205)	(0.323)	(0.231)
Commodity*CN	0.474**	0.526*	0.072	0.577***	0.630**	0.204
	(0.205)	(0.311)	(0.243)	(0.198)	(0.298)	(0.238)
WSanction*CN	0.822***	0.843***	0.892***	0.859***	0.825**	0.929***
	(0.244)	(0.325)	(0.246)	(0.244)	(0.339)	(0.247)
Constant	2.110***	2.383***	1.918***	2.447***	2.746***	2.237***
	(0.190)	(0.264)	(0.270)	(0.174)	(0.241)	(0.248)

(Continued on next page)

Table 2 (*continued*)

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.747	0.750	0.748	0.747	0.749	0.748
Fixed Effects	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table shows estimation results based on specification (2) for 36 lending parent countries (PCs) and up to 86 borrower countries (BCs). The dependent variable is the logarithm of outstanding cross-border bilateral lending with ln(X+1). Only positive outstanding amounts enter the analysis while missing bilateral claims are replaced by zeros. Outstanding stocks are fx- and break-adjusted and then winsorized at the 1%-level in each tail. Trade, FDI, PFI and distance enter the analysis in logs. WSanction refers to military sanctions that are imposed by Western countries on the respective borrower countries All other variables are either indicators or categorial variables referring to the borrower counterparty country. CN highlights those pairs of cross-border bilateral relationships where Chinese parent banks act as lenders. All covariates are lagged by one year. Columns 1-3 show the results for Debt Burden as external public debt scaled by GDP, while Columns 4-6 show those for public debt service over government revenues. Columns 1 and 4 refer to the full period ranging from 2016 to 2022, while columns 2 and 5 isolate the years 2016-19 and columns 3 and 6 only show 2020-22. All columns include both GDP growth as a control variable and separate lending parent and year fixed effects. Annex Table 3 exhibits the corresponding descriptive statistics, Annex Table 5 gives the bank nationalities, Annex Table 6 lists all included counterparty countries and Annex Table 10 describes our variables and data sources. Standard errors in parentheses are clustered by lending parent country *** p<0.01, ** p<0.05, * p<0.1

When turning to the market shares, our results reveal some post-pandemic shifts in lending patterns not only for Chinese, but also for other bank nationalities. Table 3 shows that the factors that are correlated with higher amounts of cross-border bank lending (Table 2) are not necessarily similarly correlated with banks' market shares in specific EMDE markets and that Chinese banks also exhibit patterns that diverge from those of other bank nationalities.

While the basic relationships of bilateral economic ties with market shares resemble that of outstanding amounts in general, after the pandemic, trade correlations lose in strength even more so for Chinese banks than for their competitors. More precisely, our results on market shares for trade, FDI, portfolio flows, and distance reveal coefficient estimates that generally share the same sign with those on the amounts of cross-border bank lending. Some key differences emerge for Chinese banks, which are picked up by the interaction coefficients, however. While relative to their bank competitors, the market shares in cross-border lending reported by Chinese banks were higher pre-pandemic (positive interaction coefficients in columns 3 and 6 of Table 3) with higher trade, this relationship fundamentally changed after the pandemic (negative interaction coefficients in columns 4 and 7 of Table 3). For Chinese banks, the interaction term switches from positive and significant to negative and significant with a coefficient estimate of roughly the same size. For all other bank nationalities, there is also a small decline in the strength of the trade-market share relationship post pandemic, but it is much smaller than for Chinese banks. By contrast, after the pandemic the FDI-lending relationship became much stronger for Chinese banks. This difference seems not to be present in the case of banks of other nationality, given that the general coefficients are very similar across periods. For portfolio investment, the market share regressions are in line with the outstanding amount regressions. They show a negative relationship of Chinese cross-border lending and portfolio investments. Overall, these findings highlight that some core relationships changed during 2020-22 and warrant further investigation, especially for Chinese banks.

The borrower country characteristics also point to some significant changes in the market shares held by Chinese banks relative to those held by other nationalities. First, the interaction coefficient with corruption perceptions is highly significant with a positive coefficient estimate that more than offsets the small negative corruption coefficient estimated for the average bank nationality. Moreover, the differences become even more pronounced post-pandemic. This suggests that Chinese banks generally have a higher market share in cross-border lending to borrowers with lower governance and they even grew that market share over the 2020-22

period. However, a comparison with Table 2 reveals that this result is not driven by higher amounts of Chinese banks' cross-border lending. Instead, it seems that other bank nationalities seem to lend less to those more perceived corrupt borrowers. Second, Chinese banks consistently account for higher lending market shares in those countries that exhibit lower debt capacity (high public debt service to revenue ratio) before and after the pandemic. In that vein, our results on market shares are even more pronounced than those for outstanding amounts of cross-border lending. Again, the comparison of market shares and outstanding amounts seems to point to different risk tolerances between Chinese and other banking systems, as is the case with corruption perceptions. Third, there is only limited evidence that the market shares of Chinese banks in cross-border lending to borrowers with Western sanctions changed. While for other bank nationalities the significant coefficient estimates did not change much in size, for Chinese banks the interaction effects are insignificant. Finally, there is evidence that the market shares vis-a-vis commodity exporters was higher for Chinese banks than that of other bank nationalities, on average. To further investigate these changes in lending patterns for Chinese banks and explore some China-specific aspects, we now only focus on the bilateral cross-border lending patterns reported by Chinese banks.

Table 3. **Chinese Banks' Lending Patterns Differ from that of Other Bank Nationalities**

Market share in fx- and break-adjusted amounts *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.175***	0.215***	0.124***	0.170***	0.213***	0.119***
	(0.028)	(0.041)	(0.041)	(0.027)	(0.038)	(0.037)
FDI	0.233***	0.226***	0.238***	0.234***	0.228***	0.238***
	(0.022)	(0.031)	(0.030)	(0.022)	(0.031)	(0.030)
PFI	0.236***	0.223***	0.251***	0.252***	0.241***	0.266***
	(0.026)	(0.037)	(0.038)	(0.027)	(0.038)	(0.038)
Dist	-1.364***	-1.587***	-1.179***	-1.351***	-1.573***	-1.160***
	(0.100)	(0.153)	(0.128)	(0.098)	(0.149)	(0.125)
DebtBurden	0.007*	0.005	0.007	-0.014***	-0.017***	-0.014***
	(0.003)	(0.006)	(0.004)	(0.002)	(0.004)	(0.003)
SovRating	-0.165***	-0.184***	-0.144***	-0.207***	-0.220***	-0.192***
	(0.018)	(0.026)	(0.026)	(0.019)	(0.027)	(0.026)
Corruption	-0.461***	-0.511***	-0.400***	-0.509***	-0.517***	-0.471***
	(0.090)	(0.123)	(0.132)	(0.089)	(0.123)	(0.129)
Commodity	0.416***	0.558***	0.283**	0.371***	0.501***	0.230**
	(0.079)	(0.113)	(0.110)	(0.078)	(0.113)	(0.111)
WSanction	-1.583***	-1.556***	-1.600***	-1.715***	-1.639***	-1.780***
	(0.150)	(0.202)	(0.230)	(0.152)	(0.204)	(0.231)
Trade*CN	1.357	2.766*	-2.828*	1.235	2.714*	-2.879**
	(1.044)	(1.469)	(1.549)	(1.024)	(1.456)	(1.425)
FDI*CN	3.106***	2.209***	7.533***	2.807***	2.057***	7.068***
	(0.463)	(0.538)	(0.710)	(0.460)	(0.528)	(0.682)
PFI*CN	-5.277***	-5.701***	-4.440***	-5.927***	-6.308***	-5.293***
	(0.717)	(1.089)	(0.964)	(0.716)	(1.122)	(0.939)
Dist*CN	-1.349	-0.731	-0.230	-2.867**	-2.274	-1.577
	(1.134)	(1.807)	(1.354)	(1.145)	(1.958)	(1.206)
DebtBurden*CN	0.002	0.003	0.058	0.310***	0.243**	0.362***
	(0.059)	(0.095)	(0.074)	(0.062)	(0.119)	(0.067)
SovRating*CN	-1.176***	-1.482**	-0.444	-0.622*	-1.196**	0.215
	(0.395)	(0.585)	(0.548)	(0.346)	(0.530)	(0.472)
Corruption*CN	8.015***	5.812**	12.123***	8.315***	5.533**	12.582***
	(1.908)	(2.823)	(2.420)	(1.840)	(2.766)	(2.216)

(Continued on next page)

Table 3 *(continued)*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Commodity*CN	8.297***	10.402***	2.461	9.969***	11.734***	4.739**
	(1.980)	(2.880)	(2.402)	(1.946)	(2.889)	(2.373)
WSanction*CN	-4.056	-5.230	-1.607	-1.543	-3.959	1.429
	(4.681)	(5.800)	(6.984)	(4.627)	(5.879)	(6.775)
Constant	13.712***	15.636***	11.709***	14.637***	16.564***	12.637***
	(1.057)	(1.621)	(1.378)	(0.934)	(1.449)	(1.197)
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.449	0.428	0.492	0.456	0.431	0.505
Fixed Effects	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

C. Zooming In: Exploiting the Heterogeneity Across Chinese Banks' Borrowers

In order to learn more about the characteristics of Chinese banks' cross-border lending, we restrict the sample to the lending outcomes of Chinese banks in this subsection and then further exploit the heterogeneity across borrowers. As a segway into a deeper analysis of Chinese specific traits, we let the results based on that smaller sample reflected in specification (3) confirm the two major findings described in the previous subsection. First, bilateral trade strongly correlates with the amount of cross-border bank lending by Chinese banks before the pandemic (Table 4), but this relationship has weakened during the post-pandemic. Instead, during 2020-22, FDI has turned to be much more positively correlated with both the amount as well as the market share in cross-border bank lending (Table 5).[20],[21] Second, while higher corruption perceptions do not themselves translate into larger cross-border lending across all years (coefficient estimate is often still negative but not statistically significant), the market share of Chinese banks was clearly positively correlated with this variable, capturing different level of risk tolerances. Something similar happened with EMDE debt capacity to repay when using debt service as a ratio of revenues, but only when considering lending amount post-pandemic, but not in market shares. These differences in risk tolerances are at the lending bank nationality level, so they could reflect multiple aspects: different incentives in regulatory frameworks (e.g., Moussawi (2024) highlights that Chinese regulators incentivize cross-border bank activity); the presence of public banks with different objectives (e.g., while Cerutti, Casanova, and Pradhan (2023) document the larger relative presence of public banks in China, Bosshardt and Cerutti (2020) show that public banks lent more during the global financial crisis because of different objectives than private banks); and/or other banking system/country characteristics (e.g., Rithmire (2022) highlights the role of state-business relations interacting with outward investment in China).

[20] The changes in the regression coefficient estimates for trade and FDI between 2017-19 and 2020-22 also capture the changing economic impacts. For example, for Table 4, a one standard deviation increase in trade triggered a 1.6% and 0.6% percent increase in the amount lent during 2017-19 and 2020-22, respectively. Instead, for FDI we have 0.7% and 1.5% increases for the same periods. The standard deviation of variable trade was 2.01 during 2017-19, and 2.02 during 2020-22, these measures for FDI are 2.99 and 2.25, respectively.

[21] Our results for bilateral trade, FDI, and portfolio flows also hold when adding flows from Hong Kong (Province of China), and Macao (Province of China) to the flows reported by mainland China. Hence, our results are not driven by the lack of nationality measures for those bilateral economic relationships.

Table 4. Zooming in on Chinese Banks and Chinese Foreign Policies

FX- and break-adjusted stocks *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.654***	0.774***	0.305**	0.625***	0.744***	0.286**
	(0.107)	(0.158)	(0.135)	(0.106)	(0.156)	(0.133)
FDI	0.346***	0.234***	0.664***	0.330***	0.217***	0.643***
	(0.052)	(0.061)	(0.082)	(0.051)	(0.058)	(0.081)
PFI	-0.107	-0.149	-0.007	-0.132*	-0.183	-0.031
	(0.072)	(0.111)	(0.087)	(0.073)	(0.116)	(0.089)
Distance	-0.121	-0.097	-0.108	-0.201	-0.201	-0.169
	(0.164)	(0.296)	(0.182)	(0.155)	(0.282)	(0.169)
DebtBurden	0.008*	0.011	0.008	0.013***	0.015	0.012**
	(0.005)	(0.008)	(0.006)	(0.005)	(0.012)	(0.005)
SovRating	-0.059*	-0.062	-0.028	-0.057*	-0.071	-0.024
	(0.033)	(0.056)	(0.042)	(0.034)	(0.055)	(0.041)
Corruption	-0.092	-0.153	0.127	-0.117	-0.214	0.110
	(0.202)	(0.330)	(0.231)	(0.205)	(0.340)	(0.235)
Commodity	0.821***	0.923***	0.467*	0.920***	1.034***	0.568**
	(0.204)	(0.312)	(0.253)	(0.196)	(0.295)	(0.243)
WSanction	0.014	0.187	0.048	0.004	0.089	0.070
	(0.268)	(0.362)	(0.352)	(0.259)	(0.348)	(0.339)
BRI	0.831***	0.763**	0.774**	0.847***	0.781**	0.790**
	(0.253)	(0.361)	(0.362)	(0.253)	(0.364)	(0.357)
Swap line used	0.698***	0.841***	0.496*	0.739***	0.967***	0.496*
	(0.195)	(0.277)	(0.267)	(0.185)	(0.276)	(0.252)
Constant	2.072	1.906	1.868	3.264**	3.510	2.821
	(1.780)	(3.115)	(2.114)	(1.627)	(2.840)	(1.920)
Observations	510	255	255	510	255	255
Adjusted R-squared	0.524	0.439	0.644	0.527	0.439	0.647
Fixed Effects	year	year	year	year	year	year
PCs	1	1	1	1	1	1
BCs	85	85	85	85	85	85
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table shows estimation results for specification (3) with China as the only lending parent bank nationality and up to 86 borrower countries (BCs). The dependent variable is the logarithm of outstanding cross-border bilateral lending with ln(X+1). Only positive outstanding amounts enter the analysis while missing bilateral claims are replaced by zeros. Outstanding stocks are fx- and break-adjusted and then winsorized at the 1%-level in each tail. Trade, FDI, PFI and distance enter the analysis in logs. WSanction refers to military sanctions that are imposed by Western countries on the respective borrower countries All other variables are either indicators or categorial variables referring to the borrower counterparty country. All covariates are lagged by one year. Columns 1-3 show the results for Debt Burden as external public debt scaled by GDP, while Columns 4-6 show those for public debt service over government revenues. Columns 1 and 4 refer to the full period ranging from 2016 to 2022, while columns 2 and 5 isolate the years 2016-19 and columns 3 and 6 only show 2020-22. All columns include both GDP growth as a control variable and separate lending parent and year fixed effects. Annex Table 4 exhibits the corresponding descriptive statistics, Annex Table 5 gives the bank nationalities, Annex Table 6 lists all included counterparty countries and Annex Table 10 describes our variables and data sources. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

We now look at China-specific policy variables and how they play out in terms of outstanding amounts and market shares. The BRI and Swap line variables offer some interesting nuances in the analysis of Chinese banks' cross-border lending. While both BRI and swap line agreements translate into higher outstanding amounts of cross-border lending across all periods, results for the market shares differ. Before the pandemic,

market shares were higher in countries with usage of swap lines, but not necessarily after. By contrast, the BRI gained importance as Chinese banks' market shares were significantly higher in BRI member countries after the pandemic.[22] Further, as we found in the previous section, even after controlling by BRI and Swap lines, being a commodity exporter implied both a larger amount of lending as well as market shares, especially before the pandemic.

Table 5. Zooming in on Chinese Banks and Chinese Foreign Policies

Market share in fx- and break-adjusted amounts *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	1.563	3.085**	-2.236	1.436	3.112**	-2.284
	(1.054)	(1.487)	(1.622)	(1.033)	(1.483)	(1.496)
FDI	3.672***	2.484***	7.115***	3.429***	2.291***	6.752***
	(0.476)	(0.573)	(0.765)	(0.471)	(0.557)	(0.734)
PFI	-5.339***	-5.881***	-4.125***	-5.909***	-6.517***	-4.783***
	(0.749)	(1.131)	(1.014)	(0.753)	(1.169)	(0.996)
Distance	-0.213	0.024	0.332	-1.584	-1.315	-0.923
	(1.247)	(2.192)	(1.472)	(1.207)	(2.291)	(1.287)
DebtBurden	-0.010	-0.016	0.020	0.295***	0.247**	0.324***
	(0.059)	(0.096)	(0.076)	(0.064)	(0.125)	(0.071)
SovRating	-1.115***	-1.457**	-0.561	-0.566	-1.109**	0.087
	(0.394)	(0.590)	(0.561)	(0.362)	(0.558)	(0.494)
Corruption	7.760***	4.999*	12.093***	8.085***	4.698	12.695***
	(1.882)	(2.892)	(2.445)	(1.827)	(2.855)	(2.260)
Commodity	8.357***	11.116***	2.579	9.843***	12.411***	4.361*
	(1.933)	(2.879)	(2.397)	(1.907)	(2.890)	(2.357)
WSanction	-12.983**	-13.162*	-10.567	-10.459**	-12.539*	-6.009
	(5.498)	(7.157)	(8.866)	(5.262)	(6.886)	(8.220)
BRI	7.881***	5.113	10.706***	7.680***	4.941	10.452***
	(2.224)	(3.117)	(2.941)	(2.234)	(3.144)	(2.897)
Swap line used	7.294**	9.001**	4.759	6.989**	10.027***	3.188
	(3.186)	(4.175)	(4.702)	(2.868)	(3.720)	(4.212)
Constant	11.918	10.830	5.743	15.839	16.163	8.002
	(15.663)	(26.150)	(21.177)	(13.035)	(23.721)	(16.112)
Observations	510	255	255	510	255	255
Adjusted R-squared	0.380	0.293	0.499	0.407	0.306	0.540
Fixed Effects	year	year	year	year	year	year
PCs	1	1	1	1	1	1
BCs	85	85	85	85	85	85
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table replicates the estimations shown in Table 3A while using a Chinese banks' market share in total lending to a particular borrow country as dependent variable. Market shares rely on the total stocks of outstanding loans adjusted for exchange rate fluctuations and breaks in series. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1 *** p<0.01, ** p<0.05, * p<0.1

[22] In a robustness check, we dropped countries that enter or exit the BRI during the respective periods. As a result, we found that the significance of the BRI coefficient in 2020-22 was not driven by countries that became part of BRI during that period.

What explains the increasing role of FDI? Geoeconomic fragmentation trends?

To better understand the increasing role of FDI, we expand our set of policy-linked variables. Gopinath et al (2024) provide evidence that changes in trade and FDI have happened along geopolitical lines since Russia's invasion of Ukraine. These changes can be traced back to policies induced by strategic considerations, such as national and economic security considerations. Changing flow patterns first occurred in the context of trade tensions between the US and China in July 2018. Since the onset of the COVID-19 pandemic, reallocation patterns across importing partners and FDI sources have seemingly intensified. Moreover, Gopinath et al (2024) highlight that in contrast to the early years of the Cold War, a set of nonaligned "connector countries" are rapidly gaining importance and serving as a bridge between blocs.

Against this backdrop, we explore the increasing correlation patterns between bilateral Chinese FDI and cross-border bank lending using three proxy variables that can reflect the potential impact of foreign policies on EMDE borrowers. As policy variables, first, we again resort to BRI membership. Second, we create a group of "connector countries" defined as 33 borrower EMDEs in our sample that simultaneously saw rising shares of i) exports to the US, ii) received FDI from China, and iii) imports from China. Hence, these connector countries possibly helped substitute at the global level for the declining Chinese imports to the US while creating a triangular flow relationship.[23] Third, we build an indicator on the borrower countries' voting behaviour in the UN General Assembly as a measure of geopolitical distance. Based on Ideal Point Distance (IPD) estimates developed by Bailey et al (2017), our indicator signals a voting behavior that is close to that of the US if the difference falls below the 25th percentile among all 85 EMDE borrower countries. The assumption is that EMDE borrower countries voting closer with the US could benefit from potential present and/or future access to the US markets. Besides their standalone effects, we also analyse how the interaction effects of policy variables with bilateral FDI and trade, respectively.

Our analysis shows that the shift in Chinese banks' cross-border lending correlation from trade-lending to FDI-lending is a general phenomenon, with only the China's Belt and Road Initiative reinforcing it. Tables 6 and 7 refer to specification (4) while jointly adding our three policy indicators and their interactions for both lending amounts and market shares, respectively. For the market share regressions, our results yield several highly significant standalone effects. First of all, while confirming previous findings, the trade and FDI standalone coefficient estimates keep signaling the shifting correlation patterns from 2017-19 to 2020-22.[24] With respect geoeconomic fragmentation, our indicators of "connector countries" and countries that tend to vote like the US in the UN GA have a negative and significant coefficient estimate. These results, which are not present in the lending amount regressions, suggest that non-Chinese bank lenders lend more intensively to those borrower countries. This is not a surprizing result given that both variables were constructed to capture the present and/or future access to the US markets. Western banking system seems to have a preference over these countries over Chinese banks. When turning to the interaction effects, however, we find that BRI seems to augment the FDI-lending correlation during 2020-22. By contrast, this is not the case for the countries that exhibit connector and UN GA voting behavior towards the US. Based on these findings we conclude that the shift in correlation patterns towards FDI is a more general phenomenon,with BRI countries reinforcing the stronger FDI-lending, but with countries that potentially benefit from geoeconomic fragmentation trends not

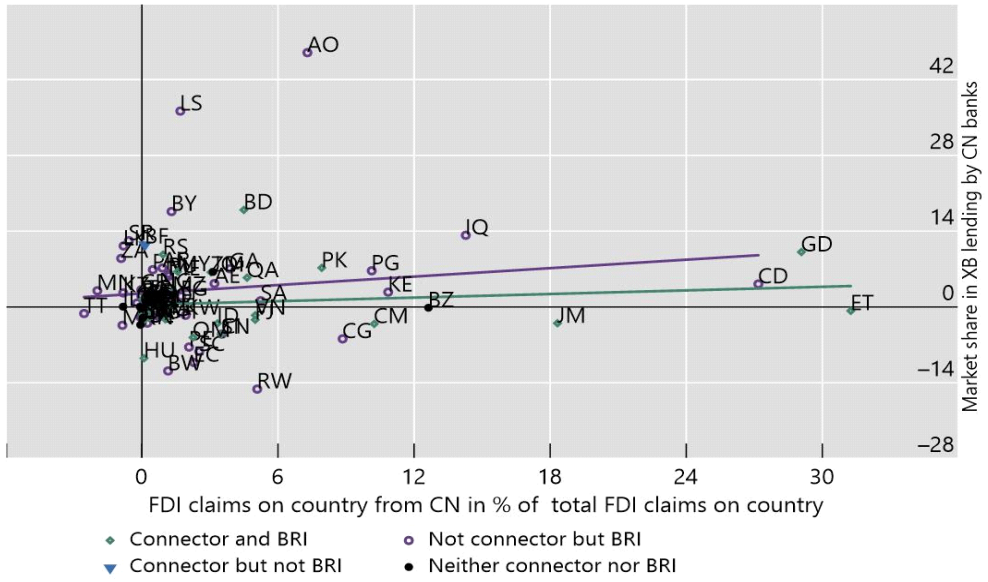
[23] See Annex Table 7 for more details.

[24] This finding remains intact even when adding three policy variables and their respective interactions separately in Annex Table 8 and 9.

displaying stronger FDI-lending relationships at the current stage. This general trend in the FDI-lending correlation is visible in Graph 8, which distinguishes between connector and BRI countries.

Graph 8. Market Share of XB Claims by CN Banks and FDI Claims of CN[1]

Average Percentage Change During 2020-2022 Compared to 2017-2019



[1] R^2 value for "Connector and BRI" is 0.03 and that for "Not connector but BRI" is 0.02

Sources: IMF CDIS; BIS locational banking statistics; Authors calculations.

Table 6. Does Geoeconomic Fragmentation Interact with FDI and Trade?

FX- and break-adjusted amounts *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
L.Trade	0.735***	0.758***	0.429	0.698***	0.713***	0.409
	(0.145)	(0.187)	(0.295)	(0.144)	(0.184)	(0.280)
L.FDI	0.201**	0.159	0.479**	0.189**	0.139	0.456**
	(0.092)	(0.109)	(0.188)	(0.091)	(0.107)	(0.183)
Connector 33	-1.379*	-2.611**	-0.437	-1.466**	-2.838***	-0.480
	(0.725)	(1.074)	(1.036)	(0.709)	(1.044)	(1.005)
Trade * Connector33	0.187*	0.334**	0.202	0.203**	0.369***	0.198
	(0.104)	(0.141)	(0.152)	(0.103)	(0.138)	(0.153)
FDI * Connector33	-0.024	-0.032	-0.210	-0.035	-0.045	-0.200
	(0.086)	(0.103)	(0.143)	(0.086)	(0.103)	(0.140)
BRI	1.643**	1.749	0.920	1.536*	1.557	0.956
	(0.817)	(1.086)	(1.633)	(0.817)	(1.070)	(1.541)
Trade * BRI	-0.202	-0.177	-0.251	-0.189	-0.157	-0.247
	(0.125)	(0.155)	(0.269)	(0.125)	(0.153)	(0.255)
FDI * BRI	0.226**	0.145	0.397*	0.228**	0.156	0.386*
	(0.106)	(0.125)	(0.216)	(0.106)	(0.125)	(0.211)
UN_US voting	-0.728	-0.972	-0.740	-0.744	-1.015	-0.686
	(1.148)	(1.555)	(1.615)	(1.150)	(1.554)	(1.637)
Trade * UN_US voting	0.075	0.192	0.187	0.094	0.216	0.187
	(0.197)	(0.249)	(0.306)	(0.198)	(0.249)	(0.309)
FDI * UN_US voting	-0.112	-0.298	-0.243	-0.126	-0.324	-0.232
	(0.231)	(0.293)	(0.349)	(0.233)	(0.297)	(0.353)
Constant	0.334	1.394	-0.343	1.141	2.572	0.552
	(2.123)	(3.591)	(2.774)	(1.983)	(3.373)	(2.580)
Observations	503	252	251	503	252	251
Adjusted R-squared	0.536	0.448	0.650	0.539	0.452	0.652
Fixed Effects	year	year	year	year	year	year
PCs	1	1	1	1	1	1
BCs	84	84	84	84	84	84
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table shows estimation results for specification (4) with China as the only lending parent bank nationality and up to 84 borrower countries (BCs). The dependent variable is the logarithm of outstanding cross-border bilateral lending with ln(X+1). Connector33 refer to 33 borrower EMDEs that see simultaneous rises in their shares of i) exports to the US ii) received FDI from China, and iii) imports from China. UN_US signals a voting behavior that is close to that of the US in the UN General Assembly building on by Bailey et al (2017). Annex Table 4 exhibits the corresponding descriptive statistics, Annex Table 5 gives the bank nationalities, Annex Table 6 lists all included counterparty countries and Annex Table 10 describes our variables and data sources. Standard errors in parentheses are clustered by lending parent country *** p<0.01, ** p<0.05, * p<0.1

Table 7. Does Geoeconomic Fragmentation Interact with FDI and Trade?

Market share in fx- and break-adjusted amounts *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
L.Trade	1.715	2.244	-1.316	1.394	2.117	-1.215
	(1.558)	(1.987)	(3.764)	(1.626)	(2.084)	(3.609)
L.FDI	2.043**	1.703	5.013**	1.952**	1.590	4.656**
	(0.941)	(1.082)	(2.262)	(0.984)	(1.126)	(2.183)
Connector 33	-20.459**	-24.994**	-20.163	-19.052**	-25.321**	-17.160
	(9.004)	(12.672)	(14.056)	(8.347)	(11.878)	(12.844)
Trade * Connector33	2.076	2.806*	2.414	1.949	2.872*	1.994
	(1.261)	(1.664)	(2.173)	(1.189)	(1.571)	(1.966)
FDI * Connector33	0.652	0.438	-0.171	0.455	0.333	-0.284
	(0.937)	(1.179)	(1.647)	(0.908)	(1.153)	(1.459)
BRI	16.934*	12.101	18.965	13.779	9.137	19.078
	(9.995)	(13.148)	(21.375)	(10.231)	(13.333)	(20.537)
Trade * BRI	-1.782	-0.967	-2.470	-1.423	-0.635	-2.560
	(1.435)	(1.765)	(3.550)	(1.474)	(1.803)	(3.378)
FDI * BRI	2.070*	1.175	2.914	2.032*	1.168	2.975
	(1.068)	(1.254)	(2.513)	(1.085)	(1.272)	(2.387)
UN_US voting	-35.078***	-43.677**	-30.543**	-37.295***	-45.047***	-33.481**
	(11.930)	(17.400)	(15.233)	(11.313)	(16.474)	(14.820)
Trade * UN_US voting	1.968	4.015	1.890	2.754	4.516*	2.922
	(1.964)	(2.655)	(2.759)	(1.826)	(2.482)	(2.600)
FDI * UN_US voting	1.736	0.337	0.821	1.050	-0.264	0.093
	(1.758)	(2.337)	(2.441)	(1.659)	(2.204)	(2.340)
Constant	16.666	21.746	8.416	20.779	26.843	11.828
	(17.953)	(28.033)	(29.271)	(15.743)	(26.045)	(25.097)
Observations	503	252	251	503	252	251
Adjusted R-squared	0.406	0.318	0.504	0.431	0.332	0.543
Fixed Effects	year	year	year	year	year	year
PCs	1	1	1	1	1	1
BCs	84	84	84	84	84	84
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022
	1.715	2.244	-1.316	1.394	2.117	-1.215

This table replicates the estimations shown in Table 6 while using a Chinese banks' market share in total lending to a particular borrow country as dependent variable. Market shares rely on the total stocks of outstanding loans adjusted for exchange rate fluctuations and breaks in series. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

What about the role of other sanctions?

Regarding sanctions, again, there is no large impact of sanctions imposed by Western countries on the cross-border lending of Chinese banks. In this section, we also explore other types of sanctions, and we take into account that China could impose sanctions, in parallel or on a standalone basis. The evidence provided by Tables 4 and 5 on Western sanctions is not conclusive, as Table 4 shows insignificant interaction effects, while Table 5 presents mixed results. For this reason, Table 8 goes more into detail by summarizing our results for countries under military, financial, or trade sanctions that are imposed by either Western countries only, China

only, or both Western and China in parallel.[25] That said, our main focus in on sanctions imposed by Western countries, but we need to control for Chinese sanctions to avoid mixing up the different effects. Depending on the type of sanctions, here, our results differ.

Table 8. Chinese Banks' Lending: Different Types of Sanctions

	Military sanctions			Financial sanctions			Trade sanctions		
Sanctions imposed by	2017 - 2022	2017 - 2019	2020 - 2022	2017 - 2022	2017 - 2019	2020 - 2022	2017 - 2022	2017 - 2019	2020 - 2022
FX- and break-adjusted stocks *as dependent variable*									
Western only	0.06	0.27	0.03	0.13	-0.19	0.53**	-0.59***	-0.64**	-0.47**
	(0.27)	(0.37)	(0.36)	(0.18)	(0.29)	(0.20)	(0.20)	(0.32)	(0.22)
China only							-0.14		-0.18
							(0.84)		(0.84)
Western and China	1.01*	1.72**	-0.51	0.35	0.70	0.06	0.42		0.34
	(0.59)	(0.67)	(0.56)	(0.40)	(0.60)	(0.36)	(0.26)		(0.29)
Market share in fx- and break-adjusted amounts *as dependent variable*									
Western only	-11.69**	-11.58*	-9.86	-7.99***	-11.87***	-3.83	-5.70***	-6.62**	-4.12
	(5.34)	(7.01)	(8.82)	(1.84)	(2.71)	(2.40)	(2.18)	(3.16)	(2.78)
China only	0.00	0.00	0.00				-5.00		-5.71
	(0.00)	(0.00)	(0.00)				(4.43)		(4.73)
Western and China	32.01***	31.98***	25.42***	-0.90	-2.13	0.17	-16.03***		-18.64***
	(6.57)	(9.36)	(5.10)	(9.58)	(13.31)	(11.69)	(3.17)		(3.52)

This table shows estimation results for specification (3) with China as the only lending parent bank nationality and up to 86 borrower countries (BCs). The dependent variable is the logarithm of outstanding cross-border bilateral lending with ln(X+1) in the top panel and Chinese banks' market share in total lending to a particular borrow country in the bottom panel. Only coefficient estimates for the different types of sanctions are reported while other estimates are available upon request. This table shows the results when using External public debt over GDP for the DebtBurden variable. "Western only" is defined such that the indicator switches to one if at least one Western country imposes sanctions. If China imposes the same type of sanctions on that particular counterparty country "Western only" switches to zero again. This table shows the results when using External public debt over GDP for the DebtBurden variable. Results for using debt service over revenues as a measure for the debt burden are available upon request. Annex Table 4 exhibits the corresponding descriptive statistics, Annex Table 5 gives the bank nationalities, Annex Table 6 lists all included counterparty countries and Annex Table 10 describes our variables and data sources. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

While military sanctions imposed by Western countries in isolation are not statistically significant for outstanding stocks of cross-border lending, there is a statistically significant *negative* impact on markets shares. By contrast, we find that, when Western countries and China impose sanctions in parallel, there is a *positive* and statistically significant coefficient estimates for both stocks and market shares. This last result seems counter-intuitive at first sight. However, it can be explained by the fact that there is just one country, the Democratic Republic of the Congo, on which military sanctions are imposed in parallel for the entire sample period of 6 years. When turning to financial and trade sanctions, our results yield some negative estimates that are statistically significant for both outstanding amounts and market shares as dependent variable. Yet, there is only one positive coefficient estimate that is statistically significant which might hint at an increase in cross-border lending by Chinese banks for borrowers on which Western countries imposed sanctions post-pandemic.

[25] Missing coefficients in Table 8 reflect the lack of sanctions for some types and/or countries.

Overall, we can conclude that there is no large response of Chinese cross-border bank lending to Western sanctions.

Do the relationships change for the most dependent borrowers?

Finally, we shed light on those borrowers for which Chinese banks are the most important source of cross-border lending. Our results show that for these most dependent borrowers, the outstanding amounts and market shares lent by Chinese banks are higher, especially for those with governance issues. Tables 9 and 10 present the results for specification (3) while adding a dummy variable that highlights most dependent borrowers for which China is the top lender and the interaction terms of that indicator with the previously discussed borrower characteristics.

Table 9. Chinese Banks' Lending: Effects for Most Dependent Borrowers

Fx- and break-adjusted amounts *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Lender top	2.301***	2.620***	1.698***	2.021***	2.110***	1.520***
	(0.214)	(0.327)	(0.269)	(0.231)	(0.378)	(0.287)
Debt burden* top	-0.001	0.001	-0.002	0.013	0.033*	0.005
	(0.006)	(0.010)	(0.008)	(0.010)	(0.017)	(0.010)
Commodity* top	-0.521*	-0.292	-0.650*	-0.502*	-0.302	-0.594*
	(0.293)	(0.467)	(0.344)	(0.299)	(0.477)	(0.352)
Sovereign rating *top	-0.087**	-0.106*	-0.056	-0.086**	-0.115**	-0.049
	(0.038)	(0.060)	(0.045)	(0.037)	(0.057)	(0.044)
Corruption* top	0.712***	0.863**	0.269	0.711***	0.883**	0.243
	(0.261)	(0.398)	(0.318)	(0.256)	(0.388)	(0.315)
Observations	510	255	255	510	255	255
Adjusted R^2	0.651	0.612	0.706	0.652	0.618	0.707
Fixed effect	year	year	year	year	year	year
				1	1	1
Parents	1	1	1	1	1	1
CPC	85	85	85	85	85	85

This table shows some selected estimation results for specification (3) with military sanctions, while adding interaction effects and a standalone variable. The standalone variable indicates that China is the top lender for a specific borrowing country in that period. We interact this indicator with other borrower characteristics, one at a time for each regression. All other coefficient estimates are available upon request. Otherwise, the regressions are based on the sample for China as the only lending parent bank nationality and up to 86 borrower countries (BCs). The dependent variable is the logarithm of FX- and break-adjusted outstanding cross-border bilateral lending with ln(X+1). Annex Table 4 exhibits the corresponding descriptive statistics, Annex Table 5 gives the bank nationalities, Annex Table 6 lists all included counterparty countries and Annex Table 10 describes our variables and data sources. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

Our results on the standalone indicators first of all confirm the obvious expected sign. It is clear that being a top lender increases both the stocks (Table 9) and the market shares (Table 10) of Chinese banks for those EMDEs for which they are the largest creditors. The question however is, whether among the most dependent borrowers, some of their characteristics are more pronunced.

Table 10. Chinese Banks' Lending: Effects for Most Dependent Borrowers

Market share in fx- and break-adjusted amounts *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Lender top	34.635***	35.557***	31.968***	34.661***	35.469***	32.581***
	(2.191)	(3.086)	(3.055)	(2.266)	(3.502)	(3.047)
Debt burden* top	0.088	0.105	0.068	0.071	0.147	-0.014
	(0.061)	(0.088)	(0.084)	(0.089)	(0.149)	(0.098)
Commodity* top	-7.339***	-4.990	-9.242**	-6.886**	-5.051	-7.962**
	(2.745)	(4.026)	(3.769)	(2.758)	(4.087)	(3.814)
Sovereign Rating* top	-2.859***	-2.869***	-2.705***	-2.264***	-2.482***	-1.919***
	(0.336)	(0.483)	(0.462)	(0.369)	(0.559)	(0.483)
Corruption* top	13.263***	14.251***	10.252***	12.168***	13.909***	8.069***
	(2.115)	(3.215)	(2.716)	(2.179)	(3.278)	(2.652)
Observations	510	255	255	510	255	255
Adjusted R^2	0.738	0.726	0.756	0.742	0.723	0.772
Fixed effect	year	year	year	year	year	year
Parents	1	1	1	1	1	1
CPC	85	85	85	85	85	85

This table replicates the estimations shown in Table 7 while using a specific lending bank nationality's market share in total lending to a particular borrow country as dependent variable. Market shares rely on the total stocks of outstanding loans adjusted for exchange rate fluctuations and breaks in series. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

Our results reveal that it is only in the case of countries with higher corruption perceptions that the interaction with the top lender is consistently positive and significant. While for the market shares these interactions are positive and statistically significant pre- and post pandemic, for outstanding amounts they are only significant during the pre-pandemic period. This suggests that the risk aversion of Chinese banks at banking sector level is lower than that of other bank lending nationalities during both periods. Yet, the outstanding amounts lent to these most dependent borrowers were only higher before the pandemic. That said, there is no such evidence for the most dependent borrowers with higher debt burdens, as interaction terms are predominantly insignificant for both amounts and market shares. Interestly, the interaction for other borrower risk characteristics indicate that, within the group of the most dependent borrowers, Chinese banks tend to lend relatively less to commodity exporters and countries with high sovereign ratings.

V. Conclusions

The purpose of this paper is to analyze the cross-border lending of Chinese banks through the period 2017-22. We take advantage of the now available longer time series on Chinese banks' global expansion to explore the role of bilateral economic ties, borrower risk variables, and policy-related country initiatives some of which reflecting geoeconomic fragmentation trends. To get a complete, undistorted picture, we build on the nationality perspective as provided by the BIS locational banking statistics (BIS LBS) which allows us to study the direct cross-border claims and all claims extended to a particular borrower country by affiliates located outside of a lender's home country.

Our contributions to the literature are threefold. First, by exploring both outstanding amounts and market shares, we provide a novel analysis of the evolution of Chinese banks' cross-border lending that not only focuses on Chinese banks, but also their lending relative to that of other reporting bank nationalities. Second, we expand the type of borrower country characteristics that are included in the typical panel analyses of cross-border lending to examine the borrowers' risk perceptions. Third, we shed light on the relationship between Chinese banks' global business and Chinese policy initiatives such as the BRI or central bank swap lines, as well as the potential role of geoeconomic fragmentation trends (e.g., as captured through connector countries as highlighted in Gopinath et al, 2024).

Against the backdrop of a generally slower expansion post pandemic, three key findings emerge. First, we observe a change in the correlation patterns between Chinese banks' cross-border lending and the other economic ties that China maintains with other EMDEs. Before the pandemic, it was trade that was most strongly correlated with the global expansion of Chinese banks. Since the pandemic, FDI has become much more positively correlated both with outstanding cross-border amounts and the market shares of Chinese banks' lending to a particular borrower country. This seems to be a general phenomenon among EMDE borrowers. Second, our results suggest that borrower country characteristics can significantly shape the lending outcomes, especially in terms of market shares. Our findings highlight that it is not that Chinese banks lend more to countries with debt burden issues and especially higher governance problems, but that their risk aversion, at the banking sector level, is lower than that of other bank lending nationalities. As result we find that their market shares are persistently higher before and after the pandemic. Our results also highlight the close relationship that Chinese banks have with their most dependent borrowers, again pointing to higher levels of risk tolerance with regard to the borrower country governance. Third, while there is mixed evidence on the role of Chinese policy programs and sanctions, part of the larger role of BRI during 2020-22 seems correlated with the more important role of FDI in cross-border Chinese bank lending. Pre pandemic, central bank bilateral swap lines played a significant role in explaining market shares. Post pandemic, the BRI became relatively more important. That said, there is no evidence pointing to a significant impact of geoeconomic fragmentation and Western sanctions on the cross-border lending of Chinese banks. As such, our results highlight the importance of the BRI as well as the close relationships that Chinese banks have with their most dependent borrowers.

A better understanding of Chinese banks' evolving behavior is therefore key for assessing potential risks and spillovers during challenging times with increasing levels of geoeconomic fragmentation. Despite the post-pandemic slowdown of cross-border bank lending, the role of Chinese banks has remained central to EMDEs. More than half of all EMDEs continue to have Chinese banks as top lenders. While Chinese banks' cross-border lending resemble that of banks from AEs along several dimensions (e.g., relationship with most

economic linkages, geographical distance, etc.), there are not only intrinsic differences due to China-specific policies (e.g., BRI), but also different borrower risk tolerances vis-à-vis other bank lenders. These differences could be important in the presence of global and local shocks, possibly reinforced by geoeconomic fragmentation trends. For example, while Chinese banks' cross-border lending is small in relation to their domestic lending, a further domestic slowdown in China could affect their borrowers, especially those joining policy initiatives and those with certain borrower characteristics that make it hard to find alternative sources of credit. All these factors could play an important role for the evolution of global cross-border bank lending in a world with increasing of economic geo-fragmentation.

Annexes

Annex Table 1A: **How cross-border lending relates to bilateral ties and borrower characteristics**

FX- and break-adjusted stocks *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.295***	0.309***	0.279***	0.286***	0.300***	0.270***
	(0.009)	(0.012)	(0.013)	(0.009)	(0.012)	(0.012)
FDI	0.170***	0.171***	0.171***	0.170***	0.170***	0.170***
	(0.006)	(0.009)	(0.009)	(0.006)	(0.009)	(0.009)
PFI	0.297***	0.296***	0.299***	0.297***	0.295***	0.300***
	(0.008)	(0.011)	(0.012)	(0.008)	(0.011)	(0.012)
Distance	-0.303***	-0.331***	-0.285***	-0.317***	-0.348***	-0.294***
	(0.018)	(0.025)	(0.026)	(0.018)	(0.025)	(0.026)
DebtBurden	0.004***	0.004***	0.003***	0.001	0.002	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
SovRating	0.007*	0.006	0.011*	-0.001	-0.003	0.001
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
Corruption	-0.244***	-0.232***	-0.249***	-0.265***	-0.255***	-0.270***
	(0.022)	(0.030)	(0.031)	(0.021)	(0.030)	(0.030)
Commodity	0.409***	0.409***	0.412***	0.418***	0.421***	0.417***
	(0.024)	(0.034)	(0.034)	(0.024)	(0.034)	(0.034)
WSanction	-0.065	0.030	-0.169**	-0.089*	0.007	-0.200***
	(0.049)	(0.065)	(0.076)	(0.049)	(0.065)	(0.075)
∆GDP	0.035	-0.715***	0.347**	-0.006	-0.688***	0.277
	(0.142)	(0.245)	(0.172)	(0.143)	(0.252)	(0.173)
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.744	0.746	0.742	0.744	0.746	0.742
Fixed Effects	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table replicates the estimations shown in Table 1 while using **parent-country by year fixed effects** instead of separate parent and year fixed effects. Robust standard errors in parentheses with *** p<0.01, ** p<0.05, * p<0.1

Annex Table 1B: How cross-border lending relates to bilateral ties and borrower characteristics

FX- and break-adjusted stocks *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Lagged LHS	0.902***	0.899***	0.904***	0.902***	0.899***	0.905***
	(0.005)	(0.007)	(0.007)	(0.005)	(0.007)	(0.007)
Trade	0.033***	0.038***	0.027***	0.032***	0.037***	0.026***
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
FDI	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
PFI	0.023***	0.021***	0.027***	0.023***	0.021***	0.028***
	(0.004)	(0.006)	(0.005)	(0.004)	(0.006)	(0.005)
Distance	-0.019**	-0.029**	-0.011	-0.020***	-0.031***	-0.011
	(0.007)	(0.011)	(0.010)	(0.007)	(0.011)	(0.010)
DebtBurden	0.001*	0.000	0.001	-0.000	0.001	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
SovRating	0.007***	0.005*	0.007**	0.005**	0.005*	0.004
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Corruption	-0.027***	-0.030**	-0.022	-0.030***	-0.033**	-0.027*
	(0.010)	(0.013)	(0.014)	(0.010)	(0.013)	(0.014)
Commodity	0.046***	0.080***	0.012	0.046***	0.083***	0.010
	(0.011)	(0.017)	(0.014)	(0.011)	(0.017)	(0.014)
WSanction	-0.000	0.057*	-0.081**	-0.005	0.055*	-0.091***
	(0.023)	(0.032)	(0.033)	(0.023)	(0.031)	(0.033)
∆GDP	0.048	0.049	0.028	0.037	0.070	0.006
	(0.060)	(0.106)	(0.073)	(0.061)	(0.109)	(0.074)
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.949	0.944	0.953	0.949	0.944	0.953
Fixed Effects s	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table replicates the estimations shown in Table 1 while **adding the lag of the dependent variable to the set of regressors**. Standard errors in parentheses are clustered by lending parent country with Robust standard errors in parentheses with *** p<0.01, ** p<0.05, * p<0.1

Annex Table 2A: Chinese banks' lending patterns differ from that of other bank nationalities: ***FX- and break-adjusted stocks*** *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.290***	0.302***	0.274***	0.282***	0.294***	0.267***
	(0.009)	(0.012)	(0.013)	(0.009)	(0.012)	(0.012)
FDI	0.160***	0.165***	0.156***	0.160***	0.165***	0.155***
	(0.006)	(0.009)	(0.009)	(0.006)	(0.009)	(0.009)
PFI	0.308***	0.304***	0.312***	0.309***	0.303***	0.314***
	(0.008)	(0.011)	(0.012)	(0.008)	(0.011)	(0.012)
Distance	-0.313***	-0.341***	-0.295***	-0.325***	-0.356***	-0.302***
	(0.019)	(0.026)	(0.027)	(0.019)	(0.025)	(0.027)
DebtBurden	0.003***	0.004***	0.003***	0.001	0.002	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
SovRating	0.010**	0.008	0.014**	0.002	0.000	0.004
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
Corruption	-0.253***	-0.244***	-0.256***	-0.273***	-0.265***	-0.277***
	(0.021)	(0.030)	(0.031)	(0.021)	(0.029)	(0.030)
Commodity	0.386***	0.391***	0.384***	0.393***	0.402***	0.386***
	(0.024)	(0.034)	(0.034)	(0.024)	(0.034)	(0.034)
WSanction	-0.078	0.013	-0.178**	-0.102**	-0.008	-0.211***
	(0.050)	(0.066)	(0.077)	(0.050)	(0.065)	(0.076)
Trade*CN	0.369***	0.469***	0.011	0.339***	0.437***	-0.010
	(0.103)	(0.151)	(0.127)	(0.102)	(0.149)	(0.126)
FDI*CN	0.224***	0.095	0.567***	0.206***	0.081	0.541***
	(0.051)	(0.061)	(0.073)	(0.049)	(0.058)	(0.074)
PFI*CN	-0.417***	-0.437***	-0.332***	-0.447***	-0.463***	-0.365***
	(0.070)	(0.108)	(0.084)	(0.071)	(0.111)	(0.086)
Dist*CN	-0.001	-0.007	0.053	-0.100	-0.124	-0.023
	(0.153)	(0.261)	(0.173)	(0.144)	(0.247)	(0.160)
DebtBurden*CN	0.009*	0.011	0.009	0.015***	0.012	0.015***
	(0.005)	(0.008)	(0.006)	(0.005)	(0.011)	(0.005)
SovRating*CN	-0.087**	-0.091	-0.047	-0.086**	-0.106*	-0.040
	(0.035)	(0.056)	(0.043)	(0.034)	(0.054)	(0.043)
Corruption*CN	0.138	0.121	0.343	0.114	0.073	0.329
	(0.202)	(0.318)	(0.228)	(0.204)	(0.323)	(0.234)
Commodity*CN	0.427**	0.523*	0.062	0.541***	0.624**	0.190
	(0.203)	(0.310)	(0.243)	(0.196)	(0.297)	(0.238)
WSanction*CN	0.715***	0.783**	0.878***	0.737***	0.757**	0.913***
	(0.247)	(0.338)	(0.236)	(0.249)	(0.353)	(0.243)
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.747	0.749	0.747	0.747	0.748	0.747
Fixed Effects	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table replicates the estimations shown in Table 1 while using **parent-country by year fixed effects** instead of separate parent and year fixed effects. Standard errors in parentheses are clustered by lending parent country *** p<0.01, ** p<0.05, * p<0.1

Annex Table 2B: Chinese banks' lending patterns differ from that of other bank nationalities:
FX- and break-adjusted stocks *as dependent variable*

	DebtBurden= External public debt/GDP			DebtBurden= Public debt service/ revenues		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Trade	0.032***	0.036***	0.028***	0.031***	0.036***	0.027***
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
FDI	0.015***	0.015***	0.015***	0.015***	0.015***	0.015***
	(0.003)	(0.004)	(0.004)	(0.003)	(0.004)	(0.004)
PFI	0.025***	0.023***	0.028***	0.025***	0.022***	0.029***
	(0.004)	(0.006)	(0.006)	(0.004)	(0.006)	(0.006)
Distance	-0.020***	-0.030***	-0.012	-0.021***	-0.032***	-0.012
	(0.008)	(0.012)	(0.010)	(0.007)	(0.011)	(0.010)
DebtBurden	0.001*	0.000	0.001	-0.000	0.000	-0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
SovRating	0.007***	0.006*	0.007**	0.005***	0.005*	0.004
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Corruption	-0.028***	-0.033**	-0.022	-0.031***	-0.035***	-0.027*
	(0.010)	(0.014)	(0.014)	(0.010)	(0.013)	(0.014)
Commodity	0.043***	0.078***	0.009	0.043***	0.080***	0.007
	(0.011)	(0.017)	(0.014)	(0.011)	(0.017)	(0.014)
WSanction	-0.001	0.058*	-0.084**	-0.005	0.057*	-0.095***
	(0.023)	(0.032)	(0.033)	(0.023)	(0.032)	(0.034)
Trade*CN	0.055*	0.149***	-0.041	0.050*	0.131***	-0.035
	(0.032)	(0.048)	(0.052)	(0.030)	(0.046)	(0.052)
FDI*CN	0.008	0.010	0.028	0.005	0.004	0.027
	(0.013)	(0.015)	(0.040)	(0.013)	(0.014)	(0.040)
PFI*CN	-0.038*	-0.092***	0.004	-0.044**	-0.104***	-0.001
	(0.020)	(0.030)	(0.027)	(0.020)	(0.032)	(0.029)
Dist*CN	-0.013	-0.036	0.014	-0.031	-0.093	0.014
	(0.048)	(0.073)	(0.069)	(0.042)	(0.064)	(0.061)
DebtBurden*CN	0.001	0.006**	-0.002	0.003	0.006	0.002
	(0.002)	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)
SovRating*CN	-0.013	-0.016	-0.012	-0.012	-0.026	-0.001
	(0.014)	(0.017)	(0.024)	(0.014)	(0.017)	(0.022)
Corruption*CN	0.014	-0.002	0.015	0.011	-0.030	0.032
	(0.068)	(0.097)	(0.098)	(0.067)	(0.098)	(0.093)
Commodity*CN	0.078	0.052	0.112	0.099	0.101	0.115
	(0.065)	(0.084)	(0.115)	(0.062)	(0.086)	(0.107)
WSanction*CN	0.051	0.010	0.097	0.058	-0.012	0.142*
	(0.064)	(0.092)	(0.085)	(0.061)	(0.089)	(0.078)
Observations	18,504	9,252	9,252	18,504	9,252	9,252
Adjusted R-squared	0.949	0.945	0.953	0.949	0.945	0.953
Fixed Effects	PC+year	PC+year	PC+year	PC+year	PC+year	PC+year
PCs	36	36	36	36	36	36
BCs	86	86	86	86	86	86
Start	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022

This table replicates the estimations shown in Table 2A while **adding the lag of the dependent variable to the set of regressors**.
Standard errors in parentheses are clustered by lending parent country *** p<0.01, ** p<0.05, * p<0.1

Annex Table 3: Descriptive Statistics

Variables	N	mean	p50	sd	min	max
By counterparty country						
Share AdjStocks[1]	18,504	2.739	0.032	8.368	0.000	93.023
Ln(X+1) AdjStocks[1]	18,504	2.592	1.264	2.868	0.000	11.284
Trade[2]	18,504	5.184	5.280	2.707	0.000	13.549
FDI[2]	18,504	3.304	2.871	3.224	0.000	12.816
PFI[2]	18,504	2.795	1.801	3.044	0.000	12.630
Distance[2]	18,504	8.645	8.862	0.873	0.693	9.894
External Public Debt/GDP[2]	18,504	29.540	27.426	20.074	0.000	108.109
Total Debt/Gov.Revenue[2]	18,504	21.248	17.920	16.326	0.476	117.581
Sovereign Rating[2]	18,504	8.535	7.726	4.084	-1.000	18.000
Corruption[2]	18,504	0.254	0.331	0.620	-1.423	1.572
Commodity[2]	18,504	0.384	0.000	0.486	0	1
GDP growth[2]	18,504	0.053	0.062	0.106	-0.391	0.495
Western Financial Sanction[2]	18,504	0.056	0.000	0.229	0	1
Western Trade Sanction[2]	18,504	0.467	0.000	0.499	0	1
Western Travel Sanction[2]	18,504	0.290	0.000	0.454	0	1

[1] Fx-and break adjusted stocks. [2] One lag as in the regression.
Sources: BIS locational banking statistics (by nationality); CEPII; IMF; UN Comtrade; authors' calculations.

Annex Table 4: Descriptive Statistics – Chinese banks

Variables	N	mean	p50	sd	min	max
By counterparty country						
Share AdjStocks[1]	510	25.238	16.366	25.767	0.000	93.023
Ln(X+1) AdjStocks[1]	510	6.448	7.007	2.687	0.000	10.866
Distance	510	8.465	8.368	2.020	2.421	12.729
Trade	510	5.333	5.854	2.611	0.000	9.949
FDI	510	3.124	3.251	2.398	0.000	9.401
PFI	510	8.848	8.985	0.756	5.154	9.867
External Public Debt/GDP[2]	510	29.805	27.485	19.970	0.000	108.109
Total Debt/Gov. Revenue[2]	510	21.439	18.071	16.314	0.476	117.581
Sovereign Rating[2]	510	8.459	7.477	4.028	-1.000	18.000
Corruption[2]	510	0.254	0.335	0.624	-1.423	1.572
Commodity[2]	510	0.388	0.000	0.488	0	1
GDP growth[2]	510	0.052	0.062	0.107	-0.391	0.495
Western Military Sanction[2]	510	0.045	0.000	0.208	0	1
Western Financial Sanction[2]	510	0.461	0.000	0.499	0	1
Western Trade Sanction[2]	510	0.282	0.000	0.451	0	1
BRI	510	0.755	1.000	0.431	0	1
Swap line used	425	0.146	0.000	0.353	0	1
Connector 33	503	0.382	0.000	0.486	0.000	1
UN US voting	503	0.155	0.000	0.362	0.000	1

[1] Fx-and break adjusted stocks. [2] One lag as in the regression. .
Sources: BIS locational banking statistics (by nationality); CEPII; UN General Assembly Voting Data (Harvard Dataverse, V32); IMF; UN Comtrade; authors' calculations.

Annex Table 5: Bank nationalities

AT: Austria	CY: Cyprus	IE: Ireland	NO: Norway
AU: Australia	DE: Germany	IN: India	PA: Panama
BE: Belgium	DK: Denmark	IT: Italy	PH: Philippines
BH: Bahrain	ES: Spain	JP: Japan	PT: Portugal
BR: Brazil	FI: Finland	KR: Korea	RU: Russia
CA: Canada	FR: France	LU: Luxembourg	SE: Sweden
CH: Switzerland	GB: United Kingdom	MX: Mexico)	TR: Turkey
CL: Chile	GR: Greece	MY: Malaysia	US: United States
CN: China	ID: Indonesia	NL: Netherlands	ZA: South Africa

Annex Table 6: 86 EMDE countries in regression sample

AE: United Arab Emirates	CR: Costa Rica	KR: Korea	QA: Qatar
AL: Albania	CV: Cape Verde	KW: Kuwait	RO: Romania
AM: Armenia	CZ: Czechia	KZ: Kazakhstan	RS: Serbia
AO: Angola	DO: Dominican Republic	LK: Sri Lanka	RU: Russia
AR: Argentina	EC: Ecuador	LS: Lesotho	RW: Rwanda
AZ: Azerbaijan	EG: Egypt	MA: Morocco	SA: Saudi Arabia
BA: Bosnia & Herzegovina	ET: Ethiopia	ME: Montenegro	SC: Seychelles
BD: Bangladesh	FJ: Fiji	MK: North Macedonia	SN: Senegal
BF: Burkina Faso	GA: Gabon	MN: Mongolia	SR: Suriname
BG: Bulgaria	GD: Grenada	MX: Mexico	SV: El Salvador
BO: Bolivia	GE: Georgia	MY: Malaysia	TH: Thailand
BR: Brazil	GH: Ghana	MZ: Mozambique	TN: Tunisia
BW: Botswana	GT: Guatemala	NA: Namibia	TR: Türkiye
BY: Belarus	HN: Honduras	NG: Nigeria	TT: Trinidad and Tobago
BZ: Belize	HU: Hungary	NI: Nicaragua	UA: Ukraine
CD: Congo Dem. Republic	ID: Indonesia	OM: Oman	UG: Uganda
CG: Congo	IL: Israel	PE: Peru	UY: Uruguay
CI: Cote d'Ivoire	IN: India	PG: Papua New Guinea	VN: Vietnam
CL: Chile	IQ: Iraq	PH: Philippines	ZA: South Africa
CM: Cameroon	JM: Jamaica	PK: Pakistan	ZM: Zambia
CN: China	JO: Jordan	PL: Poland	
CO: Colombia	KE: Kenya	PY: Paraguay	

Note: Regression sample for Chinese banks comprises 85 EMDEs which excludes China as counterparty country

Annex Table 7: 33 connector countries

BA: Bosnia & Herzegovina	GH: Ghana	NI: Nicaragua	TH: Thailand
BD: Bangladesh	ID: Indonesia	OM: Oman	TR: Türkiye
BF: Burkina Faso	IN: India	PK: Pakistan	UA: Ukraine
CM: Cameroon	JM: Jamaica	PL: Poland	UY: Uruguay
DO: Dominican Republic	KR: Korea	QA: Qatar	VN: Vietnam
ET: Ethiopia	MY: Malaysia	RO: Romania	ZM: Zambia
FJ: Fiji	MX: Mexico	RS: Serbia	
HU: Hungary	MZ: Mozambique	SN: Senegal	
GD: Grenada	NA: Namibia	TN: Tunisia	

Annex Table 8: Foreign policies and their *respective* interactions with FDI and Trade

FX- and break-adjusted amounts *as dependent variable*

	BRI=X			Connectors 33=X			UN voting=X		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Debt Burden = External public debt/GDP									
L.Trade	0.796***	0.867***	0.481*	0.602***	0.666***	0.241*	0.644***	0.761***	0.265*
	(0.141)	(0.181)	(0.278)	(0.115)	(0.172)	(0.145)	(0.106)	(0.157)	(0.136)
L.FDI	0.177**	0.133	0.399**	0.358***	0.237***	0.737***	0.382***	0.266***	0.730***
	(0.088)	(0.105)	(0.184)	(0.067)	(0.080)	(0.108)	(0.052)	(0.063)	(0.075)
X	1.367	1.265	0.682	-0.767	-1.998*	0.169	-0.160	0.031	-0.654
	(0.851)	(1.154)	(1.540)	(0.722)	(1.030)	(1.020)	(1.166)	(1.596)	(1.671)
Trade*X	-0.178	-0.122	-0.189	0.091	0.249*	0.054	0.071	0.114	0.206
	(0.128)	(0.163)	(0.256)	(0.106)	(0.139)	(0.149)	(0.194)	(0.247)	(0.302)
FDI*X	0.240**	0.150	0.349*	0.039	0.020	-0.067	-0.211	-0.352	-0.293
	(0.107)	(0.131)	(0.208)	(0.089)	(0.106)	(0.139)	(0.230)	(0.288)	(0.364)
Observations	510	255	255	510	255	255	503	252	251
Adjusted R^2	0.530	0.438	0.649	0.511	0.430	0.633	0.519	0.436	0.640
Fixed Effects	year	year	year	year	year	year	year	year	year
PCs	1	1	1	1	1	1	1	1	1
BCs	85	85	85	85	85	85	84	84	84
Start	2017	2017	2020	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022	2022	2019	2022
Debt Burden = Public debt service/ revenues									
L.Trade	0.759***	0.831***	0.454*	0.567***	0.625***	0.219	0.613***	0.726***	0.246*
	(0.140)	(0.178)	(0.267)	(0.113)	(0.167)	(0.144)	(0.105)	(0.156)	(0.134)
L.FDI	0.162*	0.110	0.387**	0.346***	0.223***	0.715***	0.363***	0.247***	0.703***
	(0.088)	(0.105)	(0.181)	(0.065)	(0.077)	(0.106)	(0.050)	(0.059)	(0.074)
X	1.279	1.111	0.721	-0.854	-2.201**	0.140	-0.155	-0.056	-0.570
	(0.854)	(1.154)	(1.467)	(0.717)	(1.031)	(0.996)	(1.179)	(1.619)	(1.690)
Trade*X	-0.165	-0.105	-0.182	0.108	0.283**	0.054	0.087	0.144	0.206
	(0.128)	(0.162)	(0.245)	(0.105)	(0.139)	(0.149)	(0.196)	(0.252)	(0.305)
FDI*X	0.239**	0.161	0.334	0.028	0.009	-0.067	-0.220	-0.377	-0.286
	(0.107)	(0.131)	(0.205)	(0.089)	(0.106)	(0.137)	(0.233)	(0.296)	(0.369)
Observations	510	255	255	510	255	255	503	252	251
Adjusted R^2	0.533	0.440	0.652	0.514	0.432	0.636	0.521	0.436	0.642
Fixed Effects	year	year	year	year	year	year	year	year	year
PCs	1	1	1	1	1	1	1	1	1
BCs	85	85	85	85	85	85	84	84	84
Start	2017	2017	2020	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022	2022	2019	2022

This table shows estimation results for specification (4) with China as the only lending parent bank nationality and up to 86 borrower countries (BCs). The dependent variable is the logarithm of outstanding cross-border bilateral lending with ln(X+1). Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

Annex Table 9: Foreign policies and their respective interactions with FDI and Trade

Market share in FX-Adjusted amounts *as dependent variable*

	BRI			Connectors 33			UN voting		
	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22	2017-22	2017-19	2020-22
Debt Burden = External public debt/GDP									
L.Trade	2.322	2.868	-0.340	0.922	2.050	-3.142	0.963	2.572*	-3.227*
	(1.493)	(1.917)	(3.291)	(1.211)	(1.650)	(2.065)	(1.081)	(1.498)	(1.769)
L.FDI	2.211**	1.936**	4.706**	3.480***	2.257***	7.363***	4.109***	2.860***	7.980***
	(0.868)	(0.976)	(1.971)	(0.598)	(0.701)	(1.063)	(0.506)	(0.617)	(0.846)
X	7.176	-1.564	12.836	-18.27**	-24.98**	-15.924	-29.24***	-36.47**	-26.87*
	(9.606)	(12.227)	(18.971)	(8.638)	(11.555)	(13.725)	(11.298)	(15.660)	(15.136)
Trade*X	-0.896	0.494	-2.033	1.573	2.685*	1.392	2.031	3.643*	2.525
	(1.389)	(1.670)	(3.117)	(1.223)	(1.547)	(2.095)	(1.778)	(2.204)	(2.603)
FDI*X	2.101**	0.858	3.124	1.162	0.766	0.833	0.549	-0.378	-0.844
	(1.037)	(1.211)	(2.171)	(0.944)	(1.152)	(1.583)	(1.561)	(1.963)	(2.123)
Observations	510	255	255	510	255	255	503	252	251
Adjusted R^2	0.385	0.291	0.501	0.376	0.298	0.483	0.377	0.302	0.485
Fixed Effects	year	year	year	year	year	year	year	year	year
PCs	1	1	1	1	1	1	1	1	1
BCs	85	85	85	85	85	85	84	84	84
Start	2017	2017	2020	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022	2022	2019	2022
DebtBurden= Public debt service/ revenues									
L.Trade	1.889	2.695	-0.523	0.888	2.113	-2.987	0.734	2.515*	-3.411**
	(1.555)	(1.995)	(3.194)	(1.179)	(1.624)	(1.923)	(1.062)	(1.487)	(1.661)
L.FDI	2.045**	1.739*	4.441**	3.312***	2.092***	7.044***	3.847***	2.667***	7.553***
	(0.908)	(1.010)	(1.947)	(0.593)	(0.695)	(1.007)	(0.497)	(0.594)	(0.812)
X	3.927	-4.590	12.185	-16.36**	-24.94**	-12.180	-31.14***	-38.40**	-28.22*
	(9.824)	(12.468)	(18.493)	(8.183)	(10.989)	(12.674)	(10.842)	(15.021)	(14.790)
Trade*X	-0.482	0.845	-1.908	1.415	2.725*	0.944	2.678	4.149*	3.205
	(1.433)	(1.719)	(3.020)	(1.176)	(1.482)	(1.920)	(1.698)	(2.115)	(2.518)
FDI*X	2.011*	0.863	2.992	0.971	0.690	0.666	0.054	-0.882	-1.275
	(1.058)	(1.232)	(2.108)	(0.918)	(1.132)	(1.417)	(1.512)	(1.899)	(2.146)
Observations	510	255	255	510	255	255	503	252	251
Adjusted R^2	0.412	0.305	0.542	0.401	0.311	0.522	0.405	0.317	0.526
Fixed Effects	year	year	year	year	year	year	year	year	year
PCs	1	1	1	1	1	1	1	1	1
BCs	85	85	85	85	85	85	84	84	84
Start	2017	2017	2020	2017	2017	2020	2017	2017	2020
End	2022	2019	2022	2022	2019	2022	2022	2019	2022

This table shows estimation results for specification (4) with China as the only lending parent bank nationality and up to 86 borrower countries (BCs). The dependent variable is the market share in cross-border bilateral lending. Standard errors in parentheses are clustered by lending parent country with *** p<0.01, ** p<0.05, * p<0.1

Annex Table 10. Variable Description

Variables(short name)	Variable description	Unit/Value	Source/Comment
Outstanding amounts (dependent variable)	Total cross-border lending, all currencies, logarithm of outstanding cross-border bilateral lending with ln(X+1). Only positive outstanding amounts enter the analysis while missing bilateral claims are replaced by zeros. Outstanding stocks are fx- and break-adjusted and then winsorized at the 1%-level in each tail.	USD mn	BIS locational banking statistics (by nationality)
Market shares (dependent variable)	Market share of lender country *l* relative to all lenders that extend loans to borrowers in country *b* in year *t*. Market shares rely on the total stocks of outstanding loans adjusted for exchange rate fluctuations and breaks in series.	%	BIS locational banking statistics (by nationality)
Trade	Sum of exports and imports	USD mn	UN Comtrade Database
Investment	Total Portfolio Investment (Equity+Debt)	USD mn	IMF, CPIS
FDI	Foreign direct investment	USD mn	IMF, CDIS
WDist	Weighted Distance captures the sum across all locations through which lending is extended by a parent country to a specific borrower country while distinguishing between claims on regular borrowers and interoffice claims.	km	CEPII database, BIS locational banking statistics (by nationality). See Cerutti, Casanova, and Pradhan, 2023
SovRating	Composite measure based on ratings by different rating agencies on foreign currency long-term sovereign debt.		Fitch and Moody's; S & P (Capital IQ)
∆GDP	Annual GDP growth of the EMDE borrower.	%	IMF WEO dataset
DebtBurden	External debt Service/GDP or Public debt service/ revenues		IMF WEO dataset
Corruption	Indicator about the country's governance, covering corruption perceptions. Higher values indicate being perceived as more corrupt.		International country risk guide (ICRG)
Commodity	Indicator, signaling that the country is a fuel and/or commodity exporter.	0/1	IMF Statistics
Swap line used	Indicator of whether the local central bank maintains a swapline with the Peoples Bank of China (PBOC)	0/1	Horn et al (2023, NBER WP); www.aiddata.org
WSanction	Indicator of military sanctions imposed by "Western countries" on a specific borrower EMDE. We use "Western countries" as a simplification to refer to sanctions imposed by: AT, AU, BE, CA, DE, DK, ES, FI, FR, GB, GR, IE, IT, JP, LU, NO, NL, PT, SE or US.	0/1	Global Sanctions Database. See Syropoulos et al (2022)
BRI	Country joins the Belt and Road Initiative	0/1	greenfdc.org/countries-of-the-belt-and-road-initiative-bri/
Connector33	Indicator for borrower EMDEs signalling simultaneous rises in (i) the share of exports to the US; (ii) the share of received FDI from China; and (iii) the share of imports from China.	0/1	Trade, and FDI databases
UN_US voting	Indicator of a voting behavior in the UN General Assembly that is similar to that of the US. Based on Ideal Point Distance (IPD) estimates from by Bailey et al (2017), the indicator switches to one if the difference in IDPs between the respective borrower and the US falls below the 25th percentile among all 85 EMDE borrower countries.	0/1	Voeten et al (2009), Bailey et al (2017)

Note: The aggregation by nationality in the case of Chinese banks captures only cross-border claims of those banks from Mainland China and their global network of affiliates. It does not include, for example, Chinese banks, which are domestically owned in Hong Kong SAR.

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