Does Bank FDI Promote Firm FDI?
Evidence from China's Outbound Multinational Activity[*]

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Abstract

We investigate the relationship between bank FDI and manufacturing firm FDI using a detailed firm-level dataset on outbound multinational activity from China that was contemporaneous with the global expansion of China's Big-5 banks. Adopting an event study approach that exploits information on the year of entry of Chinese banks and firms across potential host countries, we find that the establishment of a Big-5 bank subsidiary or branch is associated with a significant increase in subsequent years in Chinese firms' likelihood to establish an overseas subsidiary in that host country. We present tests — including an instrumental variables strategy — that build a case that the relationship from China's bank FDI to firm FDI is causal in nature. We further discuss supporting evidence to show that the patterns are consistent with China's bank presence abroad serving as a conduit to alleviate the financing needs of Chinese firms' overseas subsidiaries. The findings speak to a nexus between the internationalization of a country's banks and the ability of that country's firms to engage in multinational activity abroad.

1 Introduction

The past two decades have seen a remarkable rise in outward foreign direct investment (FDI) activity from several fast-growing developing countries, most prominently from China (UNCTAD 2006). As illustrated in Figure 1, the outflow of FDI from China increased from US$830 million in 1990 to US$116 billion in 2014.[1] This rise in outward FDI reflects in no small part China's "Going Out" policy – initiated in 1999 – to encourage its domestic firms, including state-owned enterprises, to seek investment and growth opportunities overseas. With the proposal of the Belt and Road initiative in 2013, it is widely anticipated that there will be a further rise in Chinese firms' physical presence and affiliate activity in foreign markets (Wang and Zhao 2017). At the same time as Chinese firms have been expanding their multinational footprint, China-based banks have also been actively growing across country borders. Focusing on the five largest Chinese banks (the so-called "Big-5"), while these banks had 60 overseas branches and subsidiaries located in 18 countries in the year 2000, these numbers rise to 278 in 50 countries by 2010.[2]

These contemporaneous trends point to a deeper functional relationship between bank FDI and firm FDI originating from the same source country. After all, FDI entails high sunk and operating costs, and reliable bank access could be crucial for firms to service these costs. It has moreover been argued that there are advantages in being able to engage with banks from one's home country, as opposed to incurring the costs of associating with a new bank in the FDI host country. Firms can leverage on their pre-existing banking relationships to more seamlessly engage in financial transactions, including drawing on home-country sources of financing.[3] This would obviate the need for the firm to re-establish its credit-worthiness in the new market; for example, the home-country bank might act as a guarantor or facilitate the posting of collateralizable assets for the firm to obtain funds from local lenders. Banks with a foreign presence can also help to lower informational barriers, by passing on knowledge about the local business environment to their corporate customers (Hale 2012). At a more basic level, working with a home-country bank can help to lower transactions and communications costs associated with language barriers, cultural differences or institutional dissimilarities (Oh et al. 2011, Kim et al. 2015, Levis et al. 2016).

This raises a natural follow-up question, as to the underlying direction of causality in this relationship between bank FDI and firm FDI. On the one hand, the "follow the client" view

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1. Based on FDI statistics from UNCTAD.

2. Based on data compiled from the Big-5 banks' corporate websites, as described in Section 3.1.

3. See for example Feinberg and Phillips (2004) and Desai et al. (2004), who examine the relative importance of home- versus host-country sources of financial capital for the operations of U.S. multinational affiliates abroad.

would posit that it is firm FDI that draws in bank FDI, with banks entering foreign markets in order to facilitate the overseas banking needs of their established corporate customers.[4] For example, Qian and Delios (2008) have found using bank-level data that the pattern of global expansion of Japanese banks during the 1980s and 1990s was prompted in part by a desire to be present in markets which a large number of their existing clients had entered. On the other hand, there is also contrasting evidence that suggests that bank FDI can promote and sustain firm FDI. In particular, this appears to describe well the outward FDI experience of the Netherlands (Poelhekke 2015), and the patterns of FDI inflows into China (Ongena et al. 2015).[5]

In this paper, we examine the above research question in a new empirical context, namely the rise in China's outbound FDI over the period 1990-2014. The case of China is important in its own right, given the size of the Chinese economy and its rising share of global FDI outflows; more broadly too, this episode can shed light on the outward expansion strategies of banks and firms from the perspective of a large developing country. To make progress towards disentangling whether it is bank FDI that promotes firm FDI, or whether it is instead firm FDI that draws in bank FDI, we assemble a micro-level dataset that contains rich information on the timing of entry of Chinese firms and the Big-5 Chinese banks into overseas markets. We base our analysis on firm-level data that we draw from Oriana, specifically a core sample of 720 China-based manufacturing firms with at least one majority-owned foreign subsidiary during our period of study. We combine this with data that we hand-collected from the Big-5 banks' corporate websites on the year of establishment of each of their overseas branches and subsidiaries. This allows us to set up a firm by host-country panel dataset, in order to explore the relationship between the timing of a firm's entry into a host-country and the timing of Big-5 bank entry into that same market.

Our empirical strategy seeks to achieve this by first and foremost including a set of fixed effects for each firm by host-country pair. We thus exploit precisely the within-firm variation for a given host-country market in the year of entry of its first subsidiary. We further saturate the regression model a full set of firm by year fixed effects, that absorb the role of any firm attributes – such as year-to-year shifts in the productivity of the Chinese parent company – that might affect the timing of its FDI decisions. Our key explanatory variable will be a host-country by year indicator that captures the year of first entry of a

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4. Consistent with this view, a number of studies have found that a key correlate of bank FDI is the magnitude of trade and/or non-bank FDI that originates from the same source country (Nigh et al. 1986, Grosse and Goldberg 1991, Yamori 1998, Focarelli and Pozzolo 2001).

5. It has been noted that cross-border capital flows have declined by 65% since the start of the global financial crisis in 2007, with about half of this being is attributable to a decline in cross-border lending. However, banks from China and Japan have been a key exception to this trend, and have continued to be able to fund their countries' companies abroad (McKinsey Global Institute 2017).

Big-5 bank, via the opening of a branch or subsidiary. We therefore also control for a battery of other host-country, time-varying characteristics – including measures related to country income, financial development, institutional quality, and the bilateral exchange rate – that could correlate with Big-5 bank entry.

Our central finding is that the entry of a Big-5 bank into a given host-country market is positively associated with firm entry into that same market in the subsequent year. This result holds controlling for the battery of host-country characteristics listed above. We moreover find evidence of spillover effects, in that Big-5 bank entry into a country is positively associated with affiliate entry not just in that country, but also in neighboring countries in the same geographic region. Our exploration of different leads and lags of the Big-5 bank entry variable points to the conclusion that it is prior Big-5 bank entry that is positively associated with subsequent firm FDI, and not vice versa. This is further supported by evidence from a more flexible event-study empirical specification. While we find some signs of anticipation effects here, namely firms establishing a subsidiary in a market in anticipation that a Big-5 bank will soon follow, we nevertheless confirm that the propensity towards firm entry increases significantly in and after the earliest year in which a Big-5 bank opens a branch or subsidiary in the host country. To further bolster the case for a causal interpretation, we obtain similar results when using an instrumental variable that we construct from information on other East-Asian countries' bank FDI presence across the host countries; this works in particular off the premise that Japanese and Korean banks have minimal direct lending relationships with China-based firms, but that there are common forces – such as local banking regulations – that might jointly make specific host countries attractive to Japanese, Korean and Chinese banks as destinations for bank FDI.

We provide further evidence that the credit channel is a relevant mechanism for explaining the impact of home-country bank presence on firm FDI. Following the strategy of Rajan and Zingales (1998) and Manova (2013), we find that firms that state-owned enterprises, or that are in industries that feature a high debt-to-asset ratio are more likely to invest in host countries with the presence of Chinese banks. Furthermore, for a subsample of our firms, we were able to obtain information from their annual reports of a list of banks with whom they had a credit relationship. Although this may be at best a partial list of prior bank-firm links, we find for this subsample that the impact of bank presence on firm entry is indeed stronger for banks and firms with an existing relationship from their home-country business dealings than those without. Last but not least, we also find that the effects of bank financing are weaker for instances of firm FDI conducted through a merger or acquisition, consistent with the view that greenfield FDI is more intensive in its use of bank financing, while M&As are more intensive in their use of equity financing. These results are consistent with the

hypothesis that the credit channel is an important reason behind the positive relationship between bank and firm FDI.

Our research seeks to contribute to a large existing literature on the empirical determinants of manufacturing FDI.[6] At the country level, gravity variables such as cultural distance, per capita GDP of the parent country and relative labor endowments can also affect FDI activities (see Blonigen and Piger (2004), and the survey article by Blonigen (2005)). The importance of host-country institutions in attracting FDI has been highlighted in Du et al. (2004) and Kang and Jiang (2012), while the role played by the bilateral exchange rate has been demonstrated by Froot and Stein (1991) and Blonigen (1997), among others. Turning specifically to the role of financing conditions, Bilir et al. have shown how host-country financial development can play a role in shaping the entry and sales patterns of multinational affiliates. Our paper builds on this theme, by highlighting how home-country banks can be a part of the financial support system for firms that venture overseas. There is in contrast a relatively smaller literature on the determinants of bank FDI; see De Blas and Russ (2010), and Niepmann (2016) in this regard for models that speak to the distinctive features of the banking sector.[7]

Our paper naturally relates to a body of work on the importance of access to financing for international trade and for FDI. The importance of source-country financial development for country exports, particularly in sectors that depend more on external sources of capital, has been highlighted by Beck (2003) and Manova (2013).[8] Manova et al. (2015) explores this issue further with firm-level evidence from China, to show that firms with multinational connections exhibit a relatively better export performance in sectors that are more financially vulnerable.[9] On the FDI side, di Giovanni (2015) sheds lights on how stock market development can stimulate cross border mergers and acquisitions. More closely related to our research, Bronzini and D'Ignazio (2016) use survey data from Italy to explore how a firm's choice to export to a destination is affected by its financing bank's presence in that country.

As discussed earlier in this Introduction, there is a smaller body of work exploring the nexus between bank FDI and firm FDI.[10] Relative to this prior work, we see an advantage

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6. See Antràs and Yeaple (2014) for a survey on the literature on theoretical mechanisms that explain the formation of multinational firms.

7. Related to this, several papers have studied how the presence of multinational banks can affect the international transmission of economic shocks (see, for example, Fillat et al. (2018), Cao et al. (2018)).

8. See also: Greenaway et al. 2007, Berman and Héricourt 2010, Minetti and Zhu 2011.

9. A related body of work has also pointed out the importance of banks for the trade finance instruments that underlie virtually all cross-border transactions in international trade (2017a,b).

10. A related line of research has highlighted the network effects that can prompt the co-location of FDI activity by banks and firms that are members of the same business group (Békés and Bisztray 2017).

in our use of both firm- and bank-level measures of foreign market presence – instead of country, region or industry aggregates – that furthermore exploits variation in the timing of entry at this micro level.[11] That said, an overview of these existing empirical findings points to little consensus, suggesting instead that the nature of this relationship – whether it is firm FDI that leads to bank FDI, or vice versa – can be context-specific. There is thus a need to interpret the generalizability of our results with some caution, particularly since these need to be viewed against the backdrop of China's "Going Out" policy to encourage and perhaps even coordinate the outward expansion of its companies. We nevertheless view our findings as evidence that having access to home-country banks overseas is a useful pre-condition for facilitating the subsequent entry of firms into those same markets.

The paper is organized as follows. Section 2 provides background information on China's banking sector and its global expansion. Section 3 introduces our data and empirical strategy. Section 4 presents the baseline regressions results. Section 5 then discusses the evidence in favor of a causal interpretation, while Section 6 explores the underlying mechanisms that could be driving the relationship from bank to firm FDI. Section 7 concludes.

2   Institutional background: China's banking sector

There are several notable features of China's banking system and its relationship with the real economy that make China a good empirical setting in which to study our research question. China's banking sector has been growing at a rapid pace in recent decades. The value of total assets in China's banking system surpassed that of the U.S. in 2010. As of 2016, total banking assets in China stood at \$35 trillion, or three times the size of China's GDP, making it the largest banking system in the world (Cerutti and Zhou 2018).

At the same time, China's banking sector remains concentrated in the hands of several state-owned or controlled banks. Currently, the largest five banks – the "Big-5" comprising the Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB), Bank of China (BOC), Agricultural Bank of China (ABC), and the Bank of Communications (BCOM) – jointly account for roughly half of the banking system's total assets and deposits (Turner et al. 2012). With the exception of ICBC, all of the Big-5 banks were established or nationalized by the Chinese government shortly after the founding of the People's Republic of China in 1949, and served important functions as sources of financing for state-owned enterprises including in heavy industry. Though it stands as the youngest of the Big-5

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11. Earlier research on this topic often made use of aggregate data on FDI that were ultimately from balance of payments statistics. However, such net measures of FDI value can be misleading, as these typically do not differentiate between new and existing foreign affiliates (Desbordes and Wei 2017).

banks (established only in 1984), ICBC is the largest bank in China, and in fact ranks as the largest public company by assets in the world. In principle, the Big-5 banks are each commercial banks with listings on both the Shanghai and Hong Kong stock exchanges; in practice though, the central government retains substantial influence as a major shareholder either directly or through state-controlled organizations. Given the dominant role of these banks in China's banking landscape, we thus focus on the global expansion of the Big-5 and their impact on firm FDI in our empirical work. (Our findings continue to hold when expanding the set of banks under consideration to the "Big-7", that further includes China CITIC Bank and China Merchant Bank.)

Given the size and importance of the state-owned banks in the financial system, and the relatively immature state of China's corporate bond and stock markets, it should come as no surprise that banks are a major source of external financing for China-based firms. Banks in China provide about three-fifths of total credit to the private sector (Elliott 2013). With the advent of China's "Going Out" policy to encourage outward FDI, the Big-5 banks have played a further key role in providing financing for Chinese firms with such overseas ambitions. For example, it has been reported that up to 80-90% of firms' overseas investment funding came from Chinese banks.[12] The internationalization of China's banks can thus be viewed as a component of the country's broader "Going Out" policy. The "Big-5" banks have been encouraged by the central government to expand their overseas network of subsidiaries and branches, in part so that they can better serve the banking needs of Chinese businesses abroad; this includes providing basic retail banking services, facilitating foreign exchange transactions, as well as access to funds from the home country (Calkins 2013).[13]

3 Data and empirical strategy

We turn in this section to describe the dataset that we have assembled to explore the relationship between the global expansion of the Big-5 banks and outward FDI in China's non-bank sector. We also present our empirical strategy, which seeks to exploit the variation in the firm-level and panel dimensions of our dataset.

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12. From the World Resources Institute: http://www.wri.org/blog/2015/01/china-s-overseas-investments-explained-10-graphics.

13. Apart from the commercial banks, China also has several policy banks such as the Export-Import Bank of China and the China development Bank that act as major lenders to Chinese firms. As these policy banks have a limited overseas presence, we focus on bank FDI by the Big-5 commercial banks in our study.

3.1 Data sources

Firm FDI: Our principle source of information on the outbound FDI of Chinese firms is the Oriana database of Bureau van Dijk (BvD). Oriana provides company-level information that focuses, relative to other BvD data products, on the Asia-Pacific region. Apart from standard accounting and financial variables, Oriana also reports information (where applicable) on the majority-owned overseas subsidiaries of each firm, which is a key data element for our exercise.[14]

From Oriana, we first extract all companies: (i) with headquarters located in China; (ii) whose primary activity based on the Standard Industrial Classification (SIC) is in the manufacturing sector; and (iii) with a record of at least one overseas subsidiary during the years 1990-2014. We then retrieved information on each of the foreign subsidiaries of these head companies, specifically on their host country and year of establishment. To be clear, we include all subsidiaries regardless of their primary activity, whether this is in manufacturing (e.g., a production plant) or in non-manufacturing (e.g., a retail outlet), as we are in principle interested in the full range of activities that overseas subsidiaries are engaged in.[15] However, we do seek to exclude subsidiaries that have been set up primarily for tax management purposes, rather than to facilitate the actual production and sales operations of the parent firm.[16] We thus drop from consideration subsidiaries located in host countries that are offshore financial centers known to attract inflows of capital, but which have a manufacturing share of GDP that is lower than 10%; this drops Bermuda, the British Virgin Islands, the Cayman Islands, Cyprus, Hong Kong, Luxembourg, Macau, and Panama from our sample. This yields a core sample of 720 parent firms spread over 94 SIC 3-digit manufacturing industries, with 2,166 majority-owned subsidiaries located in 110 distinct host countries.

Our empirical strategy will seek to exploit the timing of FDI entry. It turns out however that this piece of information on the year of establishment is only available directly from Oriana for about 12% of the subsidiaries in our core sample. We therefore hand-collected this variable when it was not reported in Oriana in the following steps. As each subsidiary has a unique BvD identification number, we used this identifier to search for these establishments

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14. The definition of "ownership" adopted in Oriana is that the parent should hold at least a 50% stake in the shares of the subsidiary. While this is more stringent than the 10% cut-off for what constitutes FDI as viewed by the IMF, majority-ownership in principle would imply a higher level of financing needs on the part of the parent firm in order to assume a 50% ownership stake.

15. The primary SIC industry is moreover missing in Oriana for close to two-thirds of the subsidiaries in our sample, and not as easily recovered from alternative information sources as the year of establishment of the subsidiary. In particular, it was not feasible to code up this information by hand as it would require detailed information on the composition of revenues, assets or employment by industry of each subsidiary.

16. As documented by Buckley et al. (2015), such tax motives for establishing foreign subsidiaries are relevant too for Chinese-headquartered multinationals.

in other BvD databases – namely, Orbis, Amadeus and Zephyr – which yielded the year of establishment for a further 43% of the subsidiaries.[17] This was supplemented by a search of firms' annual financial reports and their official websites (which raised the coverage rate by a further 26%); for the bulk of the remaining subsidiaries, the information was obtained from news sources (such as Bloomberg) and country business directories. This left only 2% of the establishments whose years of establishment were unaccounted for; we subsequently dropped these subsidiaries from our sample.

It is useful to acknowledge that the sample of parent firms that we are working with is not intended to be representative of the cross-sectional characteristics of the full distribution of China's non-bank firms. Rather, by construction, our sample selects out larger firms that are actually observed establishing a foreign subsidiary during our sample period.[18] We thus refrain in our analysis from exploring the propensity towards FDI across firms, and instead focus on empirical specifications that will exploit within-firm variation in the timing of their entry into a given host-country market. The results should consequently be interpreted as effects that apply to prospective multinationals (i.e., firms that are more disposed to embark on outward FDI). While there are alternative datasets that provide information that is in principle more universal in its coverage of FDI projects, such as the Investment Project Information Database of China's Ministry of Commerce, these come with their own drawbacks. In particular, the Ministry of Commerce source reports the timing of new approvals for outbound FDI projects, but this need not correspond to the actual year of establishment of a subsidiary; more importantly, this source does not provide information on the identity of the Chinese parent firm or the extent of the ownership stake that is being taken up.[19, 20] At a more basic level, we have checked that the cumulative total number of overseas subsidiaries over time in our core sample from Oriana strongly correlates with the aggregate value of the stock of outward FDI from China as reported in UNCTAD, as illustrated in Figure 1.

Bank FDI: Our key explanatory variable of interest relates to the overseas expansion of China's Big-5 banks. By its nature, comprehensive data on the value of bilateral banking

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17. The Orbis database provides information on establishments worldwide, while Amadeus' coverage is focused on Europe. The Zephyr database, on the other hand, is a useful source for establishments involved in mergers and acquisitions.

18. For example, the head firms in our sample have a median employment of 2,048 for the year 2010 (as calculated from Oriana); this compares against the median employment of 127 for the 369,611 firms in the Annual Survey of Industrial Firms conducted by China's National Bureau of Statistics in that same year.

19. See: `http://project.mofcom.gov.cn/1800000091_10000111_8.html`.

20. In terms of other proprietary databases, Zephyr offers coverage only of merger and acquisition deals, while fDi Markets reports only greenfield FDI projects; the latter source also features weak coverage for years prior to 2003.

FDI flows is not readily available. We instead collect information from public sources on the Big-5 banks' subsidiaries and branches abroad. This in principle captures the ability of the bank to serve the needs of its home-country clients in the foreign market by establishing a physical presence.

For this purpose, we first obtained a list of each Big-5 bank's overseas first-level branches and subsidiaries from its primary commercial website; taking ICBC as example, this would be: `https://www.icbc.com/`. We then individually accessed the country website of each of the listed overseas branches and subsidiaries, which the Big-5 bank would have set up in order to promote its market presence and advertise any services customized to the respective host country. Along these lines, each of the country websites contains a short narrative on the history of the Big-5 bank's operations in the local market, from which the year of establishment of the branch or subsidiary could be obtained; for example, the websites of ICBC's foreign branches and subsidiaries contain an "About Us" or "Introduction" link in which this information would be reported. In most cases, the year of establishment coincides with the year in which a local license or regulatory approval was obtained to provide banking services; in the cases where there was a delay between the year of approval and the year of in which the branch or subsidiary was opened, we coded the latter as the year of establishment of the Big-5 bank's presence in the market.[21] Figure 2 illustrates the steady global expansion of China's Big-5 banks, as captured by the cumulative total number of overseas branches and subsidiaries. By the end of 2015, this total had reached 278 such establishments in 50 countries.

We will focus in our empirical work below on the year of establishment of these branches and subsidiaries across potential host countries as the key source of variation that speaks to the timing of China's outward bank FDI. In principle, this measure could be refined if more systematic data on the scale of operations of each of these foreign bank establishments was available, in order to weight their relative importance. Likewise, one might be concerned that the focus on branches and subsidiaries could under-state the true extent of the Big-5 banks' overseas presence, if for example the Big-5 banks set up sub-branches or engaged in alliances with other banks that were already in the host-country market. (The data on these smaller banking establishments or alternative arrangements is harder to collect in a comprehensive manner from the Big-5 banks' websites.) Bear in mind though that the above concerns – which relate respectively to whether we are adequately capturing the scale of entry, and whether there might be measurement error in the timing of that entry – should

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21. Any such gaps observed between the approval date and the date on which operations commenced was typically short, minimizing concerns about measurement error in the coding of this variable. For example, according to its website, ICBC's Amsterdam branch obtained its banking licence in September 2010 and commenced operations in January 2011.

bias us against finding significant effects on our measure of Big-5 bank entry when used as a right-hand side variable.

To provide a first snapshot of this data, we illustrate in Figure 3 below several examples of how the timing of Big-5 bank entry might be related to that of firm FDI in eight different host countries. In each panel of these figures, the vertical red line indicates the earliest year in which a Big-5 bank branch or subsidiary was opened in the country. We superimpose on this the time series of the log number of recorded subsidiaries established in the country by Chinese head companies from our Oriana sample. Interestingly, Big-5 bank entry preceded the establishment of the first firm subsidiary in our sample in the cases of Australia, Canada, Korea, Russia, and the United States, while the converse was true in South Africa, Singapore and Japan. Which pattern of the timing of events is more representative of China's outbound FDI as a whole thus remains as an empirical issue for our regression analysis to sort through.

Other host country variables: As will be clear soon in the next subsection, our empirical strategy will require that we control for other host-country characteristics that might be correlated with the entry decisions of China's Big-5 banks over time. We obtain these host-country controls from commonly-used sources. We draw on the Penn World Tables for data on country incomes and endowments, specifically: real GDP, real GDP per capita, their respective growth rates, physical capital, and human capital. We control for a measure of private credit over GDP from the World Bank's Global Financial Development Database. We also obtain controls for institutional strength, namely: the rule of law index from the World Bank's World Governance Indicators, as well as indices of democracy and constraints on the executive from the Polity IV dataset. Table 1 presents summary statistics related to these host-country variables over the period 1990-2014. (We also constructed several more novel measures of host-country characteristics, which we describe later when we report our empirical findings.)

3.2   Regression specification

The firm-level and time-series dimensions of our key variables related to firm and bank FDI motivate the empirical specification that we pursue, where we seek to exploit the variation in the data we have collected on when firm and bank entry respectively occurred.

For our key dependent variable related to firm FDI, we define $IndSub_{ict}$ to be an indicator variable which takes on a zero value if manufacturing parent firm i has no subsidiary presence in host country c in year t, and which assumes a value of one starting in the year in which the firm first establishes a subsidiary in the country in question.[22] Analogously, for bank

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22. Since we retrieved the firm-level data from the 2015 version of Oriana, the subsidiaries in our sample are establishments that were in operation as of 2015. We are unfortunately unable to observe exits of subsidiaries

FDI, we define $IndBig5_{ct}$ to be an indicator variable equal to 0 in years in which none of the Big-5 Chinese banks have a branch or subsidiary presence in country c, but which switches on to take on a value of one commencing in the year in which a Big-5 bank first sets up such an establishment. (In this baseline construction, we do not distinguish which Big-5 bank is the first entrant in the host country; we will exploit the identity of the Big-5 bank in later checks.) Thus, when plotted against time t, both $IndSub_{ict}$ and $IndBig5_{ct}$ take the shape of step functions with an upward step in the year in which the firm (respectively, bank) first established its presence in country c.[23]

Our main regression specification – in essence, a linear probability model – takes the following form:

$$IndSub_{ict} = \beta_0 IndSub_{ic,t-1} + \beta_1 IndBig5_{c,t-1} + \Gamma X_{c,t-1} + \delta_{ic} + \delta_{it} + \epsilon_{ict}. \tag{1}$$

The dataset on which we perform this analysis is a balanced firm by host-country by year panel, where we have included the 720 manufacturing firms from our core sample, the 110 potential host countries observed, and the 25 years from 1990-2014. The regression in (1) seeks to explain the presence of a firm subsidiary as a function of its one-year lagged presence, as well as an indicator for whether a Big-5 bank was in the host-country market in the preceding year $(t-1)$. While we explore this as a baseline, we will examine later different lag and lead structures of this key explanatory variable, as well as undertake a more flexible event-study specification that will serve to reinforce our findings.

The structure of this dataset allows us to identify the effect of bank presence on firm presence by exploiting variation within each firm by host-country pair. Towards this end, we include a full set of firm-by-country fixed effects, denoted by δ_{ic}. With this, we are essentially comparing a given firm's entry status in a given host-country before and after the entrance of a Big-5 bank. The firm-by-country dummies also in effect control for any time-invariant attributes of the host country – such as physical distance, language, culture, or historical ties with China – that could influence its attractiveness as a destination for FDI from China. Furthermore, we include in the regression specification a full set of firm-by-year fixed effects, denoted by δ_{it}. These serve to thoroughly account for the role of parent firm characteristics – including time-varying features such as year-to-year changes in productivity, the identity of the CEO, or global demand for its products – which could influence the timing of the

directly from Oriana, nor was it feasible to collect this information from secondary sources. Note though that any measurement error in this dependent variable would in principle push our estimation results in the direction of yielding less efficient standard errors.

23. In instances where the firm has multiple subsidiaries in the host country, or the Big-5 bank has multiple branches/subsidiaries, we code the respective indicator variables on the basis of earliest year of establishment.

firm's FDI decisions; in particular, this would subsume the effects of forces that are specific to the parent firm's primary sector of operation. Note that the δ_{ic}'s and δ_{it}'s are collectively the most stringent set of fixed effects that we can include in the regression model, while still being able to estimate the effect of Big-5 bank presence, $IndBig5_{c,t-1}$.

The regression specification that we adopt calls for the inclusion of host-country by year characteristics, denoted $X_{c,t-1}$, as further controls. We thus use here an extensive set of variables for country attributes that could influence FDI inflows, and that moreover might be correlated with the timing of Big-5 bank entry into the host country. These include: (i) variables that capture the size and state of the overall macroeconomy (log real GDP, log real GDP per capita, and their respective annual growth rates); (ii) the prevailing bilateral exchange rate; (iii) factor endowments (per worker physical capital, and human capital); as well as (iv) country institutions (financial development, rule of law, democracy, constraints on the executive).

While the regression model in (1) would serve to establish Granger causality from bank FDI to firm FDI, it remains subject to concerns related to the potential for reverse causality. We adopt two approaches to try to alleviate this concern. First, in Section 5.1, we will present an event-study regression specification with a year-by-year set of leads and lags of our Big-5 bank presence explanatory variable. The findings here provide confirmation that the first year of entry of a Big-5 bank is accompanied by a subsequent jump in the presence of Chinese firm subsidiaries, suggesting that bank presence helped to subsequently pull in more firm FDI from China. Second, in Section 5.2, we pursue an instrumental variables strategy. For this, we use information on the presence over time of banks from other East Asian countries to construct an instrument that seeks to capture the attractiveness of the host country to bank FDI from the broader East Asia region.

In the regression results that follow, we report standard errors throughout that are two-way clustered by country-year and by firm. The former adjusts the standard errors to account for the fact that our key explanatory variable of interest varies only at the host-country by year level. The latter clustering dimension in turn allows us to account for possible within-firm idiosyncratic shocks to firm FDI decisions that are serially correlated over time.[24]

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24. Our findings are very similar if the standard errors are alternatively two-way clustered by country-year and by firm-year instead.

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4 The Impact of Bank Presence on Firm Presence

4.1 Baseline results

The baseline regressions results from our estimation of (1) are presented in Table 2. In column 1, only the one-year lagged dummy for bank presence and a one-year lag for firm presence are included. Column 2 further includes the economic control variables, and column 3 also includes the institutional controls. The coefficient on $IndBig5_{c,t-1}$ is positive and significant in all three columns, confirming the hypothesis that the presence of Chinese banks in the host country is associated with a subsequent rise in the probability of Chinese manufacturing firms entering that market. The results are still robust with the inclusion of the set of host-country control variables. In column 4, we use instead on the right-hand side a one year lagged measure of the number of Big Five bank subsidiaries/branches present in the host country, rather than the binary indicator variable; column 5 uses the natural log of one plus the number of Big Five bank subsidiaries/branches, to correct for skewness of the number of banks variable. In both regressions, bank presence still has a strong and positive effect on Chinese firm's presence in the host country.

In terms of the magnitude of this effect, the coefficient estimate is about 0.0011 from column 1 to column 3, indicating that if a bank from China has subsidiaries or branches present in a foreign country in year $t-1$, the probability for a Chinese manufacturing firm to have a subsidiary in the host country increases by about 0.1 percentage points. To benchmark the size of this effect, consider that the unconditional median probability in our dataset of a destination country reporting the presence of a firm subsidiary in the year 2014 was 0.0038. The coefficient estimate of 0.0011 is thus quite sizeable when compared against the unconditional probability of firm subsidiary presence. Note that the signs we obtain on several of the auxiliary control variables, such as log real GDP per capita, log exchange rate, and rule of law are consistent with what has been found in previous research (Daude and Stein 2007, Bussea and Hefekerb 2007).

4.2 Inclusion of more comprehensive controls

To further address the concern of omitted host-country variables, a more comprehensive set of controls is included as shown in Table 3.

The level of banking system development of the host country might affect both bank FDI and manufacturing FDI from China. As a control for this, we include a measure of the host country's number of domestic banks in column 1. In column 2, we control for the extent of trade relations between China and the host country, both in terms of exports and imports

relative to GDP; this builds on previous literature that shows that economic interactions through exporting can serve as a precursor for FDI (Conconi et al. 2016). Though China serves as a major "manufacturing factory", its natural resources and fuel endowment are relatively low compared to its economic and population size. To take into account of this "resource-seeking" motive in China's outward FGI, we further include measures of the host country's food, fuel and ores export shares in column 3. Column 4 controls for host country's overall inward FDI stock, to take into consideration the overall attractiveness of the host country to inflows of FDI in general. Column 5 controls for China's preferential trade agreements and bilateral investment treaties with the host country (if any). Column 6 includes an indicator variable for years in which China's president or premier undertook a visit to the host country in question, since such official visits have been known to be a precursor of closer economic ties (Nitsch 2007). We also include a measure of China's outward overseas development assistance to the host country. Column 7 put in all controls. In all seven columns, the coefficients on $IndBig5_{c,t-1}$ are still positive and significant. The magnitude of coefficients varies from around 0.0010 to 0.0017. Since the inclusion of many of these auxiliary controls reduces the number of observations and the number of years covered, the changes in magnitude of coefficients could be due to changes sample size.

4.3   Regional Spillovers

In Table 4, we conduct a test to examine whether bank presence in a host country can influence firm subsidiary presence in other countries. Column 1 reproduces our baseline regression results. In column 2, firm subsidiary presence in the rest of the world at time $t-1$ is included as control, as a proxy for the overall propensity of the firm to expand out of China. Note that this does not change the significance or magnitude of the key coefficient; the included variable itself is not significant. In column 3, the dependent variable is replaced with the firm's subsidiary presence in the rest of the world. The coefficient on $IndBig5_{c,t-1}$ turns insignificant while the lag one period firm's presence of subsidiaries in the rest of the world is positive and significant. This provides a useful placebo test, confirming that Big-5 bank presence in a given host country is not associated with firm subsidiary presence more generally in the rest of the world. In column 4, the presence of subsidiaries in the same region other than host country is included as control and the coefficient on $IndBig5_{c,t-1}$ is still positive and significant. In the final column, the dependent variable is replaced with the presence of subsidiaries in the region outside the host country, which leads to a positive and significant coefficient on $IndBig5_{c,t-1}$. The coefficient is about seven times larger than that in the baseline regressions. This coefficient shows that when there is Chinese bank presence

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in a host country, the probability for Chinese firms to have a subsidiary in the same region increases, implying the existence of spillover effects in global banking.

The comparison between firms' subsidiary presence in the rest of the world and in the same region outside the country gives us some interesting insights regarding the impact of bank presence on firms' FDI decisions and globalization strategies. First of all, there is certain degree of spillover effect of bank presence as indicated by the last column. In the regression dataset, both bank subsidiaries and bank branches are used to construct the bank dummy. However, in reality, a subsidiary in one country is usually in charge of branches in the same region. More branches might subsequently be established in adjacent countries following the establishment of the subsidiary. On the other hand, Chinese firms might turn to Chinese banks in neighboring countries if there is no Chinese bank presence in the host country. It thus appears that Chinese firms tend to make investments in the same region if they want to establish subsidiaries in different countries, as indicated the positive and significant coefficient on lag firm presence in the region. Possible reasons for this investment strategy are that neighboring countries have similar policies regarding FDI regulations, that it is less costly to construct production network within the same region, or that this might reflect the firm's desire to establish a regional retail presence. On the contrary, the impact of bank presence in a host country on firm subsidiary presence in the rest of the world is weak, indicating that bank presence's effect is regional at most.

4.4   Timing of bank presence

The previous regressions have all used the one year lag of banking presence as the key explanatory variable. If we want to interpret the estimates from Table 2 and 3 as causal effects, it must be true that after including all the controls and fixed effects, head firms would enter host countries with equal probability in the absence of China's bank presence. In Table 5, we experiment with different leads and lags of the bank presence as explanatory variables to confirm that the effect on firm presence does not reflect a pre-existing trend. From columns 1 to 5, the dependent variable is still firm presence at year t, while the bank presence measure on the right-hand side is successively the year $t-2$ lag to the year $t+2$ lead version of the variable. One can observe from theb regression results that the magnitude of the coefficients decreases gradually across the columns, with the coefficient on $t-2$ being 0.0126 and the coefficient on $t+2$ being 0.00029. In terms of significance, the bank presence variables are significant at 5% level in first three columns and insignificant when explanatory variables are replaced with lead terms.

The results indicate that it is precisely lagged bank entry that has a more pronounced

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impact on firm's entry decision. In addition, the presence of manufacturing firms following the bank entrance is not simply a reflection of the persistence of pre-existing trends.

5   From Bank FDI to Firm FDI

5.1   Event study analysis

An event study approach is taken to further alleviate concerns related to pre-existing trends. Such event study analyses have been widely used in other fields such as financial economics to identify the impact of one event on subsequent outcomes. We examine how firm presence changes before and after the entrance of China's bank. The following empirical specification is adopted for the event study analysis:

$$IndSub_{ict} = \beta_0 IndSub_{ic,t-1} + \sum_{\tau=-3}^{5} \beta_\tau D\_Big5_{c,t+\tau} + \Gamma X_{c,t-1} + \delta_{ic} + \delta_{it} + \epsilon_{ict} \tag{2}$$

In equation (2), $D\_Big5_{c,t+\tau}$ is an indicator variable for whether Big-5 bank presence commenced τ years before or after subsidiary entry at time t. In particular, $\tau \leq -4$ is the omitted category. Therefore, the β_τ estimates measure the impact on firm presence for the same head firm-country pair, in years before or after China's bank starts to be present in the host country.

The results for regressions are presented in Table 6 and the $D\_Big5_{c,t+\tau}$ coefficients and their 95% confidence intervals are plotted in Figures 4 and 5. The first two columns present the results for host countries where China's first bank presence occurred in 1980 or after. The first column includes economic and institutional controls from the baseline regressions in Table 2 while the second column also puts in additional controls from Table 3. The last two columns are results for countries where China's first bank presence occurred in 1990 or after. The coefficients on $D\_Big5_{c,t+\tau}$ are weaker for first two columns, with coefficients smaller than 0 when $t > 0$. The coefficients are all positive and significant for the last two columns. However, the magnitude is larger when $t < 0$.

The patterns for the coefficients above are illustrated in the figures. As can be seen clearly from Figure 4, there is a jump in coefficients for $\tau > 0$, meaning that banks's first entry before year t has a larger impact on firm presence in subsequent years. If we restrict the sample to the host countries where the first Big-5 bank arrived after 1990, the size of the impact is even larger (see Figure 5). Our findings indicate that there is some evidence of positive and significant anticipation effects, namely with firms entering a market in anticipation that a Big-5 bank will soon follow. At the same time, we also find that the effect of Big-5 bank

presence on firm entry jumps in magnitude upon the actual year of first entry of a Big-5 bank, suggesting that bank presence played a role in subsequently drawing in more firm FDI.

5.2 IV regression

In this section, an IV approach is further taken to tackle the endogeneity problem. The key to a successful IV in this case is that it can explain the presence of Big-5 bank presence in host countries, but not directly influence the presence of Chinese firms there. In principle, data on banking sector regulation might be ideal for this purpose, to the extent that changes in host-country banking regulations are uncorrelated with regulations related to firm FDI more generally. In practice, however, the available indices related to bank regulation tend to be slow-moving and exhibit little variation over time to be useful for our purposes.[25] Instead, we make use of Japan and Korea's bank presence in host countries to infer host country's attractiveness to bank FDI originating from East Asian countries. The underlying assumption is that the presence of Japanese and Korean banks is correlated with presence of Chinese banks, but the presence of those banks would not directly affect Chinese firms; in particular, this works on the premise that banks from Japan and Korea have minimal business relationships and do not engage in direct lending themselves to Chinese firms.[26] The data used here is from Bankscope (Claessens and Horen 2014). The steps for constructing the IV are as follows.

First of all, the following regression is run:

$$IndBk_{cs,t} = \delta_{s,t} + \delta_{cs} + \Gamma X_{c,t-1} + v_{cs,t} \tag{3}$$

where $IndBk_{cs,t}$ is an indicator variable for bank subsidiary presence from source-country s in host-country c and year t. δ_{cs} is a set of source country by year fixed effects, which controls for time-varying source country factors driving banking internationalization. $\delta_{s,t}$ is a set of source country by host country fixed effects. After controlling for these two fixed effects and also host-year factors, the residuals can be obtained from the regressions, which capture unobserved host-country characteristics that affect the attractiveness of the market as a destination for banking FDI. After obtaining residuals $v_{cs,t}$, the mean is taken across source countries to obtain the instrument $IndBkRes_{c,t}$.

To start with, banks from Japan and Korea are used to construct the measure. The regression results are presented in Table 7. In column 1, the first stage regression shows that

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25. For instance, the data on restrictions on banking FDI in the OECD FDI Regulatory Restrictiveness Index is constant over time for our sample period in most countries.

26. Through our inspection of Chinese firms' annual reports, we have found no instances in which a Japanese or Korean bank was reported as a source of credit by Chinese firms.

when regressing the constructed instrument $IndBkRes_{c,t}$ on China's Big-5 bank presence, the constructed instrument has a positive and significant coefficient. This indicates that this IV is a valid predictor for Chinese bank presence. IV regression in column 2 still gives us a positive and significant coefficient on Big-5 bank presence. Though the magnitude of the coefficients is about seven times larger than that in baseline regressions. Columns 3 and 4 include additional controls and the results still stand.

Table 8 extends the results with a more flexible set of IVs. Columns 1 and 2 use an IV constructed using Japanese and Korean banks respectively. Columns 3 and 4 make use of banks from more East Asia countries and regions, namely Japan, Korea, Taiwan and Singapore. Columns 5 and 6 include the IV from both year $t-2$ and year $t-3$. The IV results still stand in all three cases.

6   Mechanism Testing

This section aims to test the potential mechanisms for why bank presence can affect firm presence. The major channel we propose is the financing channel. More specially, when there is home-country bank presence in a foreign market, firms are more likely to enter due to financial reasons since they consider that it would be less costly and easier to obtain credit from home country banks. First of all, some firms might already have business relationships with Big-5 banks at home. Doing business with existing business partners would reduce transaction cost and the cost of seeking a new bank in a foreign market. Besides, banks with foreign subsidiaries can offer its corporate customers local market information, thus lowering information barriers for potential investors. In addition, home bank presence can also be attractive to firms without a business relationship given that Big-5 banks are state-owned banks with high credibility in China. It is likely that Chinese firms would prefer to establish business ties with Big-5 banks rather than less familiar local banks. In addition, there is little language barrier or cultural differences. The following test the possible mechanisms mentioned above.

6.1   Language barriers

The language barrier in dealing with foreign banks is a possible reason for Chinese bank presence to attract Chinese firm presence. If this is the case, then bank presence in host countries from other Chinese-speaking countries or regions would also positively affect China's bank presence. To see whether this is the case, we include the presence of Singapore, Hong Kong and Taiwan banks as controls. The results are shown in Table 9. Data are from Bankscope.

Column 1 controls for the number of domestic banks, column 2 further controls for number of foreign banks excluding Chinese banks. One of hypothesis we propose here is that the same language and cultural backgrounds make Chinese banks more attractive to Chinese firms. Besides mainland China, Hong Kong, Taiwan and Singapore are also Chinese speaking regions and countries. In columns 3 and 4, those factors are also controlled. In all columns, the coefficients on Big Five banks are also positive and significant. The coefficients on domestic banks are also positive and significant but the effects are weaker for other foreign banks and HKG/SGP/TWN banks. The results above partly invalidate the language channel since bank presence from Chinese-speaking countries and regions doesn't have a significant impact on Chinese firms' presence. Therefore, other channels such as business ties or credit demand are more plausible explanations as illustrated below.

6.2 Heterogeneous effect of bank presence

Individual firms differ a lot in sizes or other financial characteristics. These differences can lead to heterogeneous effect of banking FDI. More importantly, these heterogeneous effect can give us a glimpse of the mechanism working behind that leads to the positive effect of banking presence on FDI investment. As mentioned above, firms having closer ties with big five banks are more likely to benefit from the foreign market information provided by banks and establish subsidiaries subsequently. In China, the Big Five banks have closer business relationship with state-owned firms and larger firms. Thus, we would expect bank presence in a foreign market has a larger impact on their FDI location choice. In addition, for firms relying more on debt financing to run business, the home bank presence in foreign market might be more attractive.

To test the two mechanisms mentioned above, the interaction of $IndBig5_{c,t-1}$ and firm characteristics (from Oriana) are included. There are five firm characteristics examined empirically. The first three are interaction with log employment, log revenue and log asset. These three variables indicate firm size from different perspectives. The fourth is a dummy for whether the firm is state-owned or not. These four firm characteristics interacted with $IndBig5_{c,t-1}$ can help test the first mechanism since larger firms and state-owned firms tend to have closer ties with Big-5 banks. A fifth firm characteristic here is log of long term debt to asset ratio, which represent firm's reliance on debt to finance its daily business. This is used to test the second mechanism. If the mechanisms mentioned above works here, the signs for the interaction terms should be positive. Since the firm-level data are only available since 2006, the regressions results in columns 3 and 4 just include observations from 2006 to 2014.

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Regression results are presented in Table 10. Column 1) is the regression of interaction with log employment. The main effect of Big Five bank presence dummy is negative and significant while the interaction term is positive and significant. This means that for small firms, the bank presence have a negative effect, but as the firm size gets larger, the effect turn positive, consistent with the hypothesis. Columns 2 and 3 are results of interaction with log asset and log revenue respectively, which gives the similar result with the negative main effect and positive interaction terms. Results of interaction with state-owned dummy is presented in column 4, showing an insignificant main effect and a positive interaction term. This is consistent with the hypothesis that state-owned firms are more inclined to invest in a foreign country in the presence of Big Five Banks, probably due to its closer ties with banks. Column 5 is the result for interaction with log debt to asset ratio, which gives a positive main effect and positive interaction coefficient. This indicates that bank presence promotes FDI in host country regardless of debt to asset ratio. However, bank presence appeals more to firms relying more on debt, which partly proves the second mechanism mentioned above.

In the regressions above, Big-5 presence variable are interacted with firm-year specific characteristics, which could have potential endogeneity concerns. In column 6, we use a time-invariant financial dependence industry characteristic to interact with bank presence. The variable is the median of firms' short-term debt over fixed asset in each industry, constructed using ASIF data. The coefficient on this interaction is also positive and significant, showing that for firms in more financially dependent industries, presence of Big-5 bank in the foreign market would increase their incentive to invest there.

6.3 Firm-bank specific relationship

So far, we make use of overall Chinese bank presence in host country as major independent variable. There is a subsample of head firms for which we have the data on its associated banks in China; this information is obtained from firms' annual reports, and we search for an indication for whether the Chinese firm has had a prior credit relationship with each Big-5 bank. In this section, we will use this data to directly test the impact of bank-firm specific relationship. Among the over 800 head firms in our sample, we obtain information for bank-firm relationships for 404 firms, most of whom have business relationships with more than one Big-5 banks. To test this, the major independent variable in the baseline specification $IndBig5_{c,t-1}$ is replace with two bank variables. The first is the presence of Big-5 banks that are associated with the head firm and the other is the presence of Big-5 banks that are not associated with the head firm. Then we re-run the baseline regressions with the same set of controls. The results are presented in Table 11.

Column 1 includes only bank presence for Big-5 banks associated with head firm and the coefficient is still positive and significant. Column 2 include only bank presence for Big-5 banks that are not associated with head firm and the result is similar to that in column 1. However, the magnitude of the coefficients are larger in the first column than the second. Column 3 include both bank presence variables and both are positive and significant with the associated Big-5 bank presence having a larger magnitude. Column 4 to column 6 repeat the exercise with additional controls added and they deliver similar results. These results indicate that the presence of both banks associated with head firm and not associated with the head firm in a host country can increase the probability for the firm subsidiary to be presence in the same host country. However, the impact is stronger for banks with business relationship with head firms. This offers some evidence that previous business ties of banks and firms at home do have a strong impact.

6.4 Entry by Merger & Acquisition (MA)

In previous sections, we make use of firm's heterogenous heterogenous characteristics and firm-bank specific relationship to test the financing channel. In this section, we further consider the entry mode into the host country. As is well known, firms can conduct FDI in a foreign country either through greenfield investment or through MA. Among the two entry modes, greenfield investment is usually considered as relying more on bank finance. MA, on the other hand, relies more on financing from stock market.

Table 12 repeats the baseline regressions with dependent variable in all columns being the presence of firm subsidiary by MA and here we only consider the entrance of first firm subsidiary into the host country. From column 1 to column 3, the major independent variables are Big-5 bank presence, the number of Big-5 presence and log one plus the number of Big-5 presence. Column 4 to column 5 repeat regressions with additional controls added. The results here show that the dummy of Big-5 bank presence have a positive but insignificant coefficient in column 1 and column 4. In other columns using number of Big-5 banks and log one plus number of Big-5 banks as independent variable, the coefficients are positive and significant, but much smaller in magnitude compared to baseline regression results. The results in this table indicates that the impact of Big-5 bank presence on firm entrance through MA is much smaller than overall FDI entrance.

7 Discussions and conclusion

This paper empirically tests whether banking sector FDI and promote non-banking sector FDI from the same origin country. Using China's firm establishment overseas from 1990 to 2014 and China's bank subsidiaries and branch establishment in the same time period, we adopt dynamic panel model as basic specification for our analysis. We find that host countries with China's Big-5 bank presence have a higher probability to attract China's manufacturing firm investment. Different strategies such as event study analysis and IV regression are used to deal with endogeneity issue. Additional analysis of the mechanisms by which banking FDI affect manufacturing FDI reveals evidence consistent with financing channel and business relation channel.

Having established a link between China's banking FDI and manufacturing FDI, this paper provide evidence on how internationalization of financial market could correlate with internationalization of manufacturing sector. This research also complements previous notion that banks follows firms abroad and gives us a more dynamic view about bank-firm relationship in FDI. Last but not least, it is useful to highly the potential policy implications of this research question. Given the trend towards financial deregulation worldwide (Abiad et al. 2010), leading to the globalisation of financial system and the rise of large global banks. Understanding the impact of global banks on manufacturing FDI would offer us deeper insights on how global banks interact with real economy. From the perspective of host country, if the host country hope to boost economic growth via FDI, it is important to nurture financial market and release entry restrictions on financial markets properly.

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8 Figures and tables

8.1 Figures
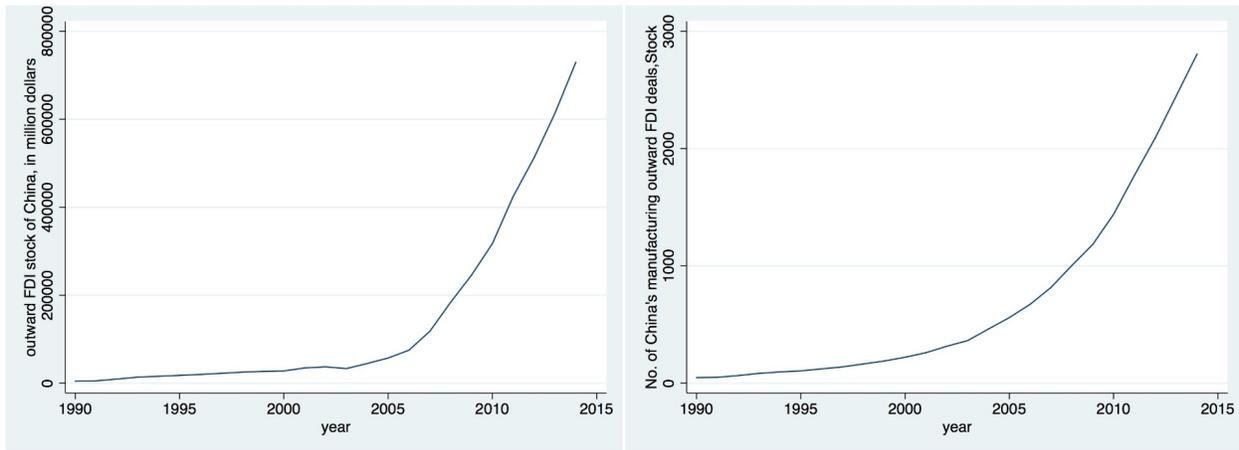
FIGURE 1

China's outward FDI from 1990 to 2014

Notes: Both pictures are about China's outward FDI from 1990 to 2014, the left panel uses data from UNCTAD and is OFDI in million dollars. The right panel uses data from Oriana and Zephyr and is the number of subsidiaries established overseas.
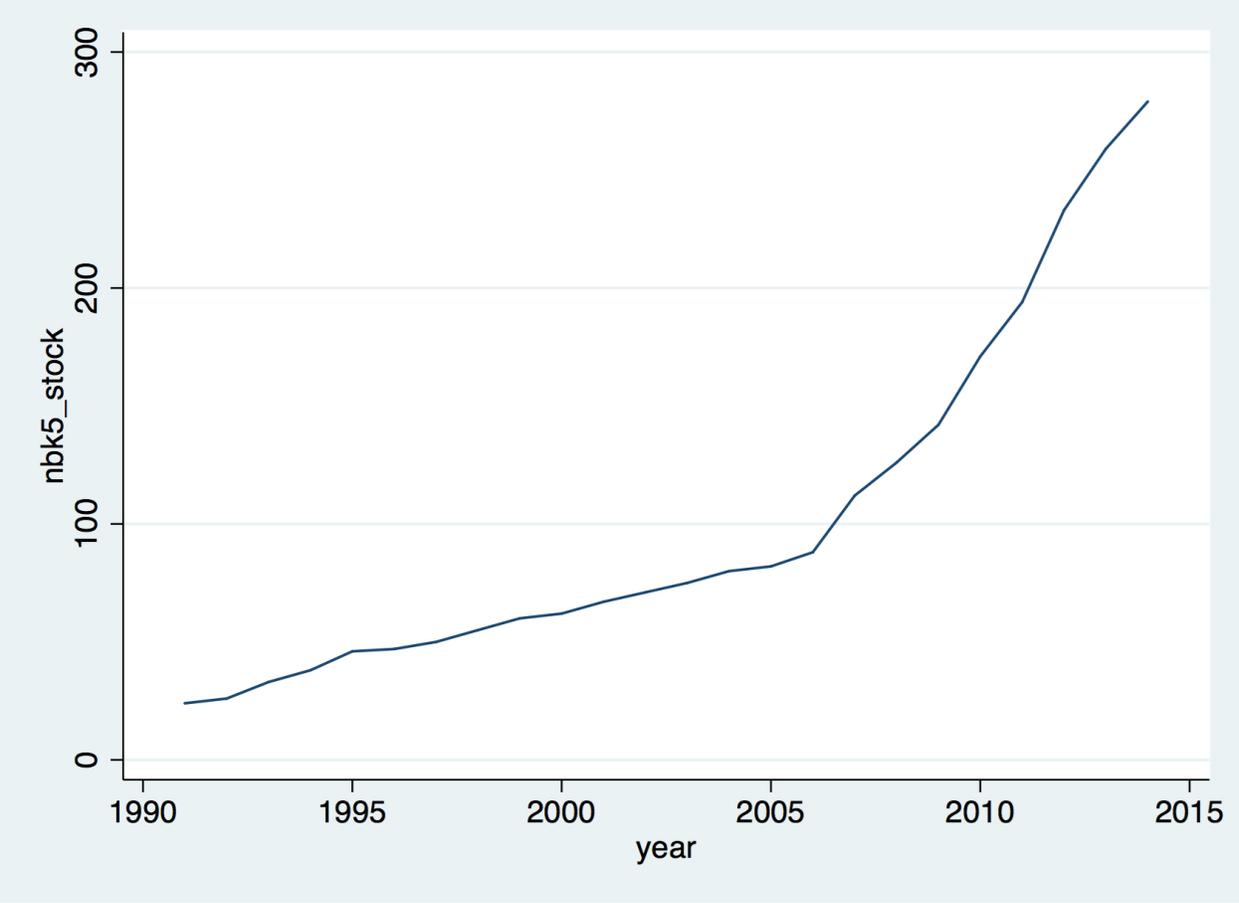
FIGURE 2
Number of overseas subsidiaries and branches of China's Big Five banks

Notes: The horizontal axis is year from 1990 to 2014. The vertical axis is the number of subsidiaries and branches established by big five banks, which represent the stock of bank presence.
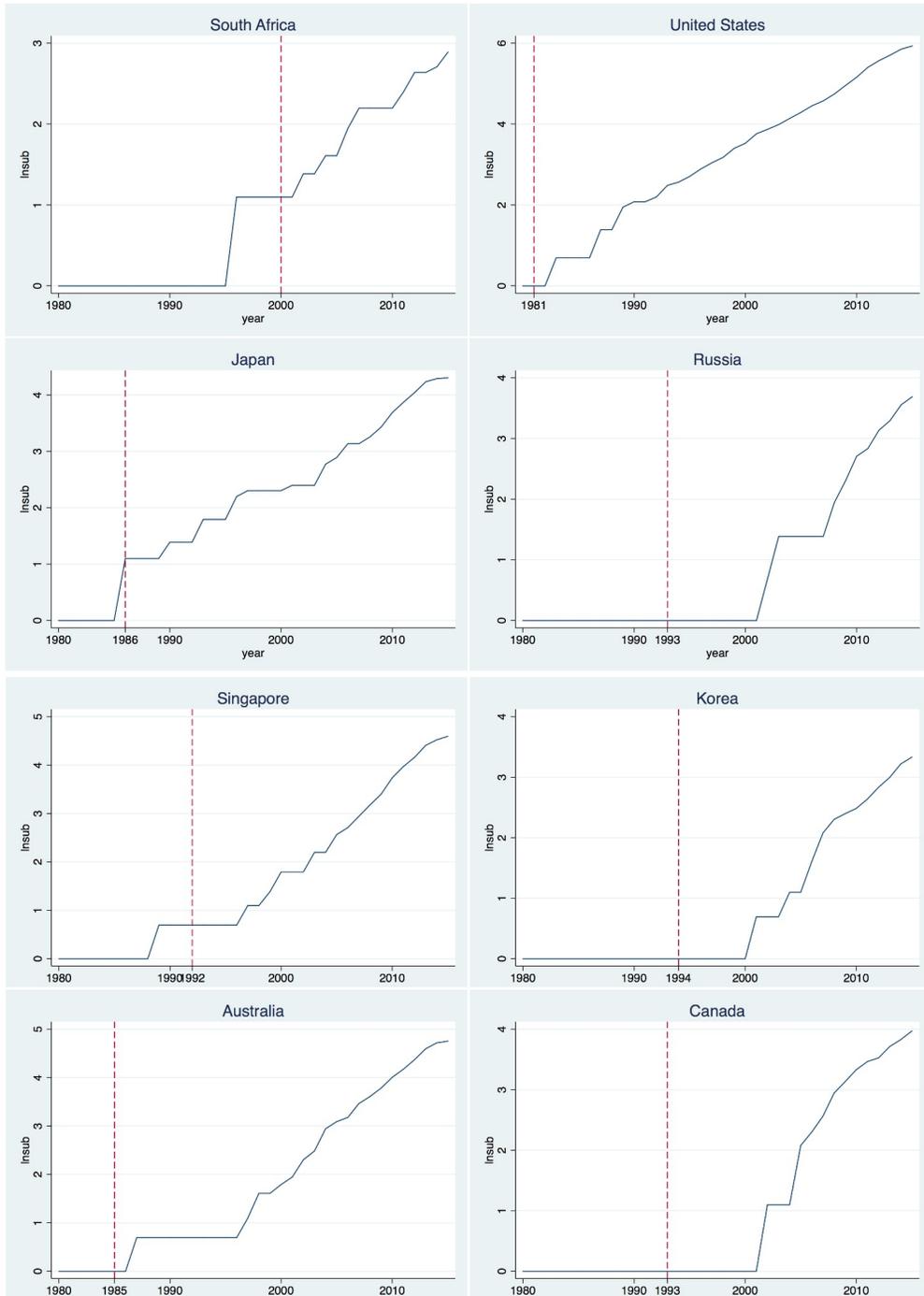
FIGURE 3

Bank presence and the number of subsidiaries in country

Notes: Blue line is the log of number of subsidiaries China's firms established in host country. Red vertical line indicates the start of Big five bank presence.
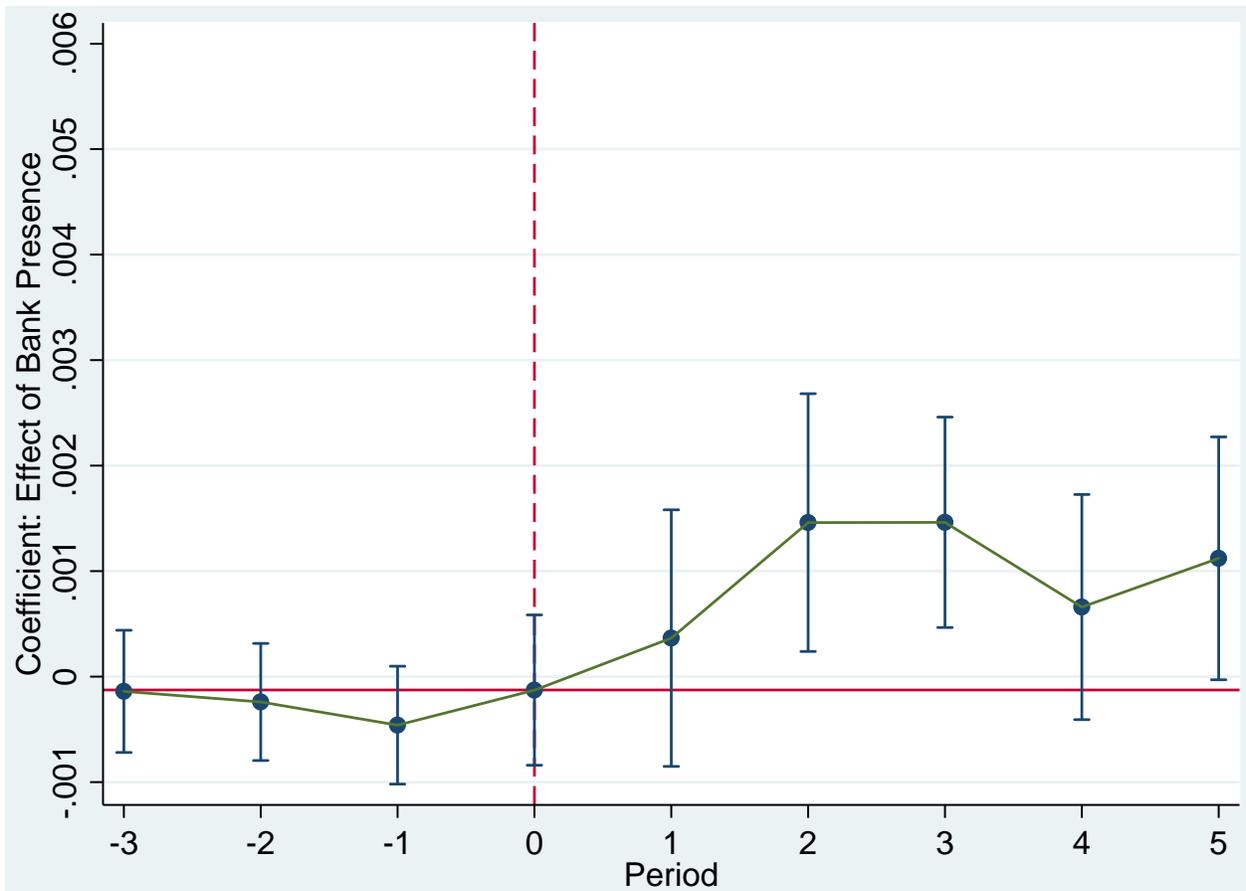
FIGURE 4

Event study analysis: Graph of coefficients, from year 1980 to 2014

Notes: The blue dots represent point estimates of lead and lag terms of banking entrance dummy. The vertical lines above and below the blue point are 95% Confidence Interval for those estimates.
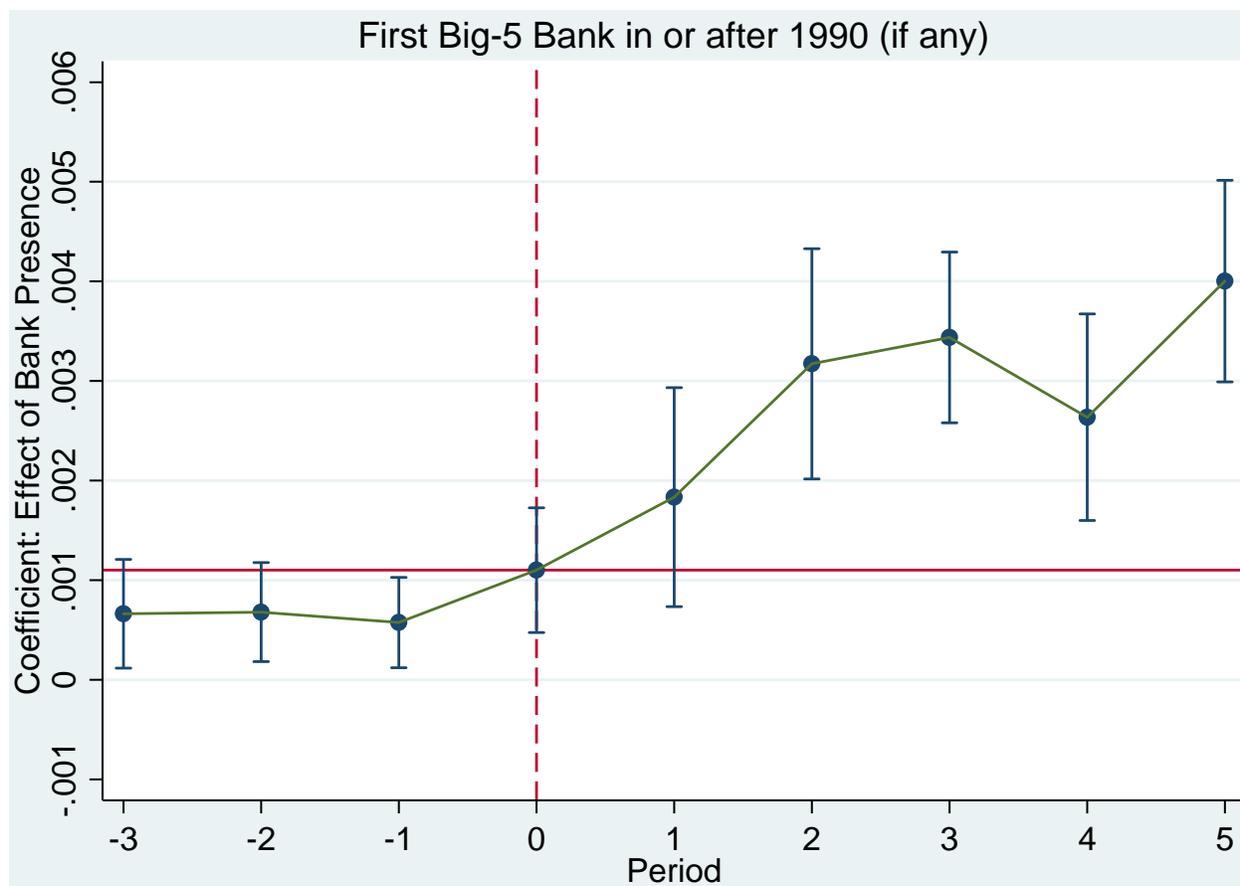
FIGURE 5

Event study analysis: Graph of coefficients, from year 1990 to 2014

Notes: The blue dots represent point estimates of lead and lag terms of banking entrance dummy. The vertical lines above and below the blue point are 95% Confidence Interval for those estimates.

8.2 Tables

TABLE 1
Summary statistics

	mean	sd	min	max
Firm subsidiary presence	0.00612	0.0780	0	1
Big 5 bank presence	0.240	0.427	0	1
No. Big 5 banks	0.885	2.366	0	24
Log real GDP	12.07	1.663	8.393	16.61
Log per capita real GDP	2.211	0.139	1.761	2.483
Real GDP growth rate	0.0531	0.0757	-0.427	0.690
Real GDP per capita growth rate	0.00444	0.00912	-0.0680	0.0971
Log exchange rate	0.594	2.712	-4.000	8.125
Log per capita physical capital	10.26	1.423	6.166	12.90
Human capital index	2.589	0.667	1.057	3.726
Log private credit to GDP	3.580	0.982	0.191	5.361
Rule of law	0.151	0.998	-1.790	2
Democracy	6.278	3.740	0	10
Constraints on executive	5.341	1.872	1	7
Observations	1045869			

TABLE 2

Baseline Regression

	No controls	With controls		Number of banks	
	(1)	(2)	(3)	(4)	(5)
Big 5 bank presence, t-1	0.00108***	0.00105***	0.00113**		
	(0.00027)	(0.00029)	(0.00046)		
No. Big 5 banks, t-1				0.00097***	
				(0.00013)	
Log (1 + No. Big 5 banks), t-1					0.00369***
					(0.00053)
Firm subsidiary presence, t-1	0.93039***	0.92920***	0.86580***	0.86326***	0.86452***
	(0.00326)	(0.00336)	(0.00722)	(0.00709)	(0.00718)
Log real GDP, t-1		-0.00236***	-0.00563***	-0.00451***	-0.00595***
		(0.00044)	(0.00104)	(0.00089)	(0.00104)
Log per capita real GDP, t-1		0.01202***	0.02643***	0.02365***	0.03459***
		(0.00362)	(0.00879)	(0.00781)	(0.00897)
Real GDP growth rate, t-1		-0.00003	-0.00066	-0.00150	0.00054
		(0.00181)	(0.00343)	(0.00314)	(0.00348)
Real GDP per capita growth rate, t-1		-0.01050	-0.00510	-0.00401	-0.01767
		(0.01416)	(0.02535)	(0.02336)	(0.02610)
Log exchange rate, t-1		-0.00014***	-0.00092***	-0.00071***	-0.00072***
		(0.00003)	(0.00030)	(0.00025)	(0.00026)
Log per capita physical capital, t-1		-0.00036**	-0.00064*	-0.00092**	-0.00087**
		(0.00017)	(0.00038)	(0.00037)	(0.00037)
Human capital index, t-1		-0.00038	0.00081	0.00107	-0.00041
		(0.00107)	(0.00229)	(0.00217)	(0.00239)
Log private credit to GDP, t-1			-0.00143***	-0.00099***	-0.00121***
			(0.00026)	(0.00022)	(0.00024)
Rule of law, t-1			0.00128***	0.00116**	0.00136***
			(0.00045)	(0.00046)	(0.00046)
Democracy, t-1			-0.00024***	-0.00035***	-0.00028***
			(0.00009)	(0.00009)	(0.00009)
Constraints on executive, t-1			0.00009	0.00025*	0.00009
			(0.00016)	(0.00014)	(0.00015)
Firm-Year FE	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	2125750	1893077	1045869	1045869	1045869
R^2	0.852	0.852	0.860	0.860	0.860

Notes: Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. The dataset comprises firm by host-country by year observations. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. In Columns (1)-(3), the key explanatory variable is an indicator for whether at least one big-5 CHN bank was present in country c in year $t-1$; Column (4) uses instead the total number of big-5 bank subsidiaries and branches in country c in year $t-1$, while Column (5) uses log one plus this preceding count variable. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 3
Baseline Regression: Additional Controls

	Bank controls	Trade		FDI	Policy		All
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Big 5 bank presence, t-1	0.00137**	0.00099**	0.00086*	0.00102**	0.00199***	0.00129**	0.00208***
	(0.00055)	(0.00046)	(0.00049)	(0.00048)	(0.00058)	(0.00053)	(0.00077)
Firm subsidiary presence, t-1	0.85530***	0.86461***	0.86436***	0.86481***	0.84022***	0.83679***	0.79948***
	(0.00791)	(0.00728)	(0.00734)	(0.00727)	(0.00867)	(0.00891)	(0.01129)
Log (1 + No. domestic banks), t-1	0.00124***						-0.00047
	(0.00042)						(0.00079)
Log inward FDI stock over GDP, t-1				-0.00051**			-0.00102***
				(0.00021)			(0.00034)
Log exports over GDP, t-1		0.00053					0.00064
		(0.00051)					(0.00078)
Log imports over GDP, t-1		0.00124**					0.00200**
		(0.00063)					(0.00089)
Log exports to CHN over GDP, t-1		-0.00127***					-0.00148***
		(0.00024)					(0.00037)
Log imports from CHN over GDP, t-1		-0.00034***					-0.00020***
		(0.00007)					(0.00006)
Food export share, t-1			0.00001				0.00003*
			(0.00001)				(0.00002)
Fuel export share, t-1			0.00005***				0.00008***
			(0.00002)				(0.00002)
Ores export share, t-1			0.00001				0.00002
			(0.00001)				(0.00001)
Preferential trade agreement, t-1					-0.00030		-0.00028
					(0.00031)		(0.00036)
Bilateral investment treaty, t-1					-0.00063		-0.00028
					(0.00040)		(0.00067)
CHN's president/premier ever visited, t-1						0.00094**	0.00161***
						(0.00044)	(0.00048)
Log (1e-9 + Aid stock from CHN over GDP), t-1						-0.00006***	-0.00007***
						(0.00002)	(0.00002)
Economic controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	934557	1018814	944606	1023452	898999	902091	681013
R^2	0.852	0.860	0.860	0.860	0.848	0.864	0.854

Notes: Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. In column (1),number of domestic banks and foreign banks(excluding Chinese banks) in host countries is controlled for. In column (2), host country's gross import/export over GDP and import from/export to China over GDP are controlled for. In column (3), export share of food, fuels and ores over GDP are included as controls. In column (4), host country's inward FDI over GDP is controlled for. In column (5), we control for host country's trade agreements with China, bilateral investment agreement with China and GDP sum of all the other countries the host country have prefential trade agreement with. In column (6), we control for political factors such as China's president or premier's visits to host country since 1998 and China's aid to host country over host country GDP. In the last column, all of the above controls are included simultaneously. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 4

Effects on Subsidiary Presence in Other Countries

	Baseline	Subs. in rest of world		Subs. in same region	
	(1) In Host	(2) In Host	(3) In ROW	(4) In Host	(5) In Region
Big 5 bank presence, t-1	0.00113**	0.00113**	-0.00008	0.00107**	0.00686***
	(0.00046)	(0.00046)	(0.00022)	(0.00046)	(0.00109)
Firm subsidiary presence, t-1	0.86580***	0.86412***	0.01451***	0.86577***	0.00782**
	(0.00722)	(0.00773)	(0.00191)	(0.00722)	(0.00323)
Presence of firm subsidiary in other non-ofc countries, year t-1		-0.00521	0.78733***		
		(0.00605)	(0.01201)		
Presence of firm subsidiary in other non-ofc same-region countries, year t-1				0.00268***	0.84866***
				(0.00101)	(0.00587)
Economic controls?	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	1045869	1045869	1045869	1045869	1045869
R^2	0.860	0.860	0.998	0.860	0.868

Notes: Standard errors are two-way clustered by country-year and by firm; ****, ***, and * denote significance at the 1%, 5%, and 10% levels respectively. Column (1) replicates the baseline regression. The dependent variable in column (2) and (4) is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. The key explanatory variable in all columns is an indicator for whether at least one big-5 CHN bank was present in the host country c in year $t-1$; In column (3), the dependent variable is firm i's presence in countries other than the host country c in year t. In column (5), the dependent variable is firm i's presence in countries other than the host country c but in the same region with host country in year t. Column (2) and (3) include lag term of firm's presence in the rest of the world. Column (4) and (5) include lag term of firm's presence in the rest of the region. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 5

Timing of Bank Presence

	Lagged		Current	Lead	
	(1)	(2)	(3)	(4)	(5)
Presence of big-5 bank subsidiary, year t-2	0.00126*** (0.00046)				
Big 5 bank presence, t-1		0.00113** (0.00046)			
Presence of big-5 bank subsidiary			0.00081** (0.00040)		
Presence of big-5 bank subsidiary, year t+1				0.00045 (0.00034)	
Presence of big-5 bank subsidiary, year t+2					0.00029 (0.00033)
Firm subsidiary presence, t-1	0.86578*** (0.00722)	0.86580*** (0.00722)	0.86582*** (0.00722)	0.86583*** (0.00721)	0.85559*** (0.00788)
Economic controls?	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes
Observations	1045869	1045869	1045869	1045869	978618
R^2	0.860	0.860	0.860	0.860	0.852

Notes: Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. Column (1) includes two year lag of big-5 CHN bank's presence in country c while Column (2) includes one year lag of big-5 CHN bank's presence in country c. Column (3) includes the current year big-5 CHN bank's presence in country c. Column (4) and (5) include one year lead and two year lead of big-5 CHN bank's presence in country c respectively. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 6
Event study analysis

	First bank since 1980		First bank after 1990	
	(1)	(2)	(3)	(4)
First bank entrance at t+3	-0.00014	-0.00003	0.00067**	0.00089**
	(0.00035)	(0.00052)	(0.00033)	(0.00043)
First bank entrance at t+2	-0.00021	-0.00010	0.00069**	0.00095**
	(0.00034)	(0.00048)	(0.00030)	(0.00041)
First bank entrance at t+1	-0.00039	-0.00023	0.00061**	0.00102***
	(0.00034)	(0.00048)	(0.00028)	(0.00037)
First bank entrance at t	-0.00005	0.00059	0.00115***	0.00231***
	(0.00043)	(0.00073)	(0.00038)	(0.00057)
First bank entrance at t-1	0.00044	0.00174	0.00187***	0.00359***
	(0.00074)	(0.00107)	(0.00067)	(0.00094)
First bank entrance at t-2	0.00150**	0.00233**	0.00321***	0.00432***
	(0.00074)	(0.00094)	(0.00070)	(0.00092)
First bank entrance at t-3	0.00148**	0.00210***	0.00346***	0.00416***
	(0.00060)	(0.00081)	(0.00052)	(0.00072)
First bank entrance at t-4	0.00064	0.00122	0.00264***	0.00383***
	(0.00065)	(0.00099)	(0.00063)	(0.00100)
First bank entrance at and earlier than t-5	0.00108	0.00167	0.00403***	0.00515***
	(0.00070)	(0.00104)	(0.00061)	(0.00093)
Economic controls?	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes
Additional controls?	No	Yes	No	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes
Observations	1045869	734350	965477	672510
R^2	0.860	0.852	0.858	0.850

Notes: This table displays event study analysis evidence. First two columns include banks entering the host country since 1980 while the last two columns include only banks entering the host country since 1990. The indepdent variables are dummies variables indicating the timing of the first bank's entrance relative the current year. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 7
IV regression

	First stage	Second stage	First stage	Second stage
	(1)	(2)	(3)	(4)
Big 5 bank presence, t-1		0.00755**		0.00547*
		(0.00324)		(0.00324)
Firm subsidiary presence, t-1	0.03731*	0.82450***	0.02774	0.80225***
	(0.01997)	(0.01004)	(0.01735)	(0.01149)
IV: Attractiveness to JPN/KOR banks, t-2	0.40663***		0.48472***	
	(0.12565)		(0.12092)	
Economic controls?	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes
Additional controls?	No	No	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes
Observations	820153	820153	665553	665553
R^2	0.846	0.856	0.881	0.854
Kleibergen-Paap F-stat		10.47		16.07

Notes: This table displays IV regression results. The first two columns are first stage and second stage results without additional controls. The last two columns are first stage and second stage results with additional controls. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 8

IV regression: Alternative Sets of IVs

	First stage	Second stage	First stage	Second stage	First stage	Second stage
	(1)	(2)	(3)	(4)	(5)	(6)
Big 5 bank presence, t-1		0.00974***		0.00503*		0.00496*
		(0.00374)		(0.00287)		(0.00265)
Firm subsidiary presence, t-1	0.03311*	0.82440***	0.03860**	0.82459***	0.04274**	0.74194***
	(0.01863)	(0.01005)	(0.01945)	(0.01003)	(0.02067)	(0.01389)
IV: Attractiveness to JPN banks, t-2	0.39054***					
	(0.12304)					
IV: Attractiveness to KOR banks, t-2	0.09476					
	(0.06063)					
IV: Attractiveness to JPN/KOR/TWN/SGP banks, t-2			0.64717***			
			(0.23131)			
IV: Attractiveness to JPN/KOR banks, t-2					0.07104	
					(0.12326)	
IV: Attractiveness to JPN/KOR banks, t-3					0.53570***	
					(0.15287)	
Economic controls?	Yes	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	820153	820153	820153	820153	611443	611443
R^2	0.849	0.856	0.847	0.856	0.873	0.866
Kleibergen-Paap F-stat		6.34		7.83		16.44
Over-id test p-value		0.0399				0.2448

Notes: This table displays IV regression results. The first two columns are first stage and second stage results using lag two period attractiveness to JPN and KOR banks as IV. Column (3) and (4) are first stage and second stage results using lag two period attractiveness to JPN/KOR/TWN/SGP banks as IV. The last two columns are first stage and second stage results using lag two period and lag two period attractiveness to JPN/KOR banks as IV. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 9
Testing mechanism: Language channel

	(1)	(2)	(3)	(4)
Big 5 bank presence, t-1	0.00134**	0.00179***	0.00177***	0.00220***
	(0.00055)	(0.00053)	(0.00068)	(0.00068)
Firm subsidiary presence, t-1	0.85533***	0.85487***	0.81827***	0.81773***
	(0.00791)	(0.00810)	(0.01014)	(0.01040)
Log (1 + No. HKG banks), t-1	-0.00035		-0.00073	
	(0.00153)		(0.00171)	
Log (1 + No. HKG/SGP/TWN banks), t-1		0.00021		0.00051
		(0.00065)		(0.00082)
Economic controls?	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes
Additional controls?	No	No	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes
Observations	934557	923735	734350	725074
R^2	0.852	0.854	0.852	0.853

Notes: This table displays results including bank presence from Chinese-speaking countries and regions. The first column include log one plus the number of Hong Kong banks' presence in the host country. The second column include log one plus the number of Hong Kong banks,Singapore banks, and Taiwan banks' presence in the host country. The last two columns repeat the regressions with the longer set of controls. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 10

Testing mechanism: Heterogeneous impact of bank presence

	(1)	(2)	(3)	(4)	(5)	(6)
Big 5 bank presence, t-1	-0.01484***	-0.02691***	-0.03644***	0.00097*	0.00442***	-0.00131
	(0.00291)	(0.00421)	(0.00501)	(0.00058)	(0.00097)	(0.00111)
Firm subsidiary presence, t-1	0.70408***	0.71643***	0.71630***	0.74098***	0.71835***	0.86556***
	(0.01459)	(0.01386)	(0.01385)	(0.01353)	(0.01387)	(0.00730)
Big 5 bank presence, t-1 × Log Employment	0.00213***					
	(0.00037)					
Big 5 bank presence, t-1 × Log Revenue		0.00226***				
		(0.00033)				
Big 5 bank presence, t-1 × Log Assets			0.00292***			
			(0.00038)			
Big 5 bank presence, t-1 × SOE				0.00404**		
				(0.00167)		
Big 5 bank presence, t-1 × Log Debt to Assets					0.00048***	
					(0.00010)	
Big 5 bank presence, t-1 × short-term debt over fixed asset,industry						0.00121**
						(0.00058)
Economic controls?	Yes	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	463393	521351	524026	622265	503088	1012044
R^2	0.883	0.879	0.879	0.877	0.879	0.860
Point estimate: 10th percentile	-0.0024	-0.0039	-0.0056		-0.0000	
p-value: 10th percentile	0.0164	0.0002	0.0000		0.9705	
Point estimate: Median	0.0017	0.0013	0.0010		0.0025	
p-value: Median	0.0278	0.0726	0.1757		0.0013	
Point estimate: 90th percentile	0.0057	0.0064	0.0073		0.0036	
p-value: 90th percentile	0.0000	0.0000	0.0000		0.0000	

Notes: This table displays heterogenous impact of bank presence. The first column includes interaction term of Big-5 bank presence with log employment of the firm. The second column includes interaction term of Big-5 bank presence with log revenue of the firm. The third column includes interaction term of Big-5 bank presence with log asset of the firm. The fourth column includes interaction term of Big-5 bank presence with dummy for SOE. The fifth column includes interaction term of Big-5 bank presence with log debt to asset ratio. The six column includes interaction term of Big-5 bank presence with industry level's short term debt over fixed asset. Below each column, point estimates of bank presence's effect are presented for each firm variable's value at 10th, 50th and 90th percentile respectively. The dependent variable in all columns is an indicator for whether firm i has a majority-owned subsidiary in country c in year t. Standard errors are two-way clustered by country-year and by firm; ***, **, and * denote significance at the 1%, 5%, and 10% levels respectively. Estimation is by OLS, with firm-country and firm-year fixed effects included in all columns.

TABLE 11

Testing mechanism: Credit channel

	(1)	(2)	(3)	(4)	(5)	(6)
Associated Big 5 bank presence, t-1	0.00299***		0.00275***	0.00289***		0.00281***
	(0.00065)		(0.00065)	(0.00094)		(0.00094)
Non-associated Big 5 bank presence, t-1		0.00232***	0.00201***		0.00192**	0.00181**
		(0.00057)	(0.00057)		(0.00084)	(0.00084)
Firm subsidiary presence, t-1	0.86627***	0.86635***	0.86610***	0.81777***	0.81782***	0.81767***
	(0.00772)	(0.00770)	(0.00772)	(0.01047)	(0.01045)	(0.01047)
Economic controls?	Yes	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls?	No	No	No	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	550671	550671	550671	386650	386650	386650
R^2	0.859	0.859	0.859	0.852	0.852	0.852

TABLE 12

Testing mechanism: First entry by MA

	(1) indsub_ma	(2) indsub_ma	(3) indsub_ma	(4) indsub_ma	(5) indsub_ma	(6) indsub_ma
Big 5 bank presence, t-1	0.00017 (0.00010)			0.00022 (0.00014)		
No. Big 5 banks, t-1		0.00017*** (0.00003)			0.00013*** (0.00004)	
Log (1 + No. Big 5 banks), t-1			0.00063*** (0.00013)			0.00048*** (0.00013)
Presence of firm's first subsidiary by MA, year t-1	0.88218*** (0.00935)	0.88161*** (0.00931)	0.88194*** (0.00934)	0.84729*** (0.01183)	0.84713*** (0.01182)	0.84720*** (0.01183)
Economic controls?	Yes	Yes	Yes	Yes	Yes	Yes
Institutional controls?	Yes	Yes	Yes	Yes	Yes	Yes
Additional controls?	No	No	No	Yes	Yes	Yes
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Firm FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1045869	1045869	1045869	734350	734350	734350
R^2	0.807	0.807	0.807	0.800	0.800	0.800