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# **Financial crisis of 2008 and outward foreign investments from China and India**

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# **Financial crisis of 2008 and outward foreign investments from China and India**

## **Abstract**

Based on a cross-industry panel of 510 non-financial Indian and Chinese firms during the period 2005-2015, we argue and show that Chinese firms with resource and asset seeking motives and Indian firms with market-seeking motives suffered differently from the financial crisis of 2008. Specifically, Indian firms that faced financial market imperfections domestically and market contraction externally had to cut back on outward investments as markets shrank and sales growth dampened. In contrast, the fortunes of Chinese firms that relied on debt finance to seek out international assets rose. Not only had investment targets become cheaper after the financial crisis, but the reliance on leverage as the instrument of finance also inured Chinese firms to the fluctuations of stock markets and the other financial implications of the crisis. Consequently, Chinese and Indian outward investment paths that looked so similar before 2008 began to diverge rapidly.

**Keywords:** Financial crisis; Outward foreign investment; Emerging economies; Financial constraints; Motives for FDI

## 1. Introduction

In an era of globalised markets and finance, adverse financial institutions at home pushed many emerging market multinationals (EMNEs) to raise money for foreign investment overseas when they couldn't find it in domestic external markets. Nayyar (2008) notes that international capital markets were an independent and important source of financing international investment for many EMNE and were typically not included in official national figures for OFDI. Kumar & Chadha (2009) and Saeed & Athreye (2014) also argue that liberalisation of economic policy had the effect of mitigating financial constraints on domestic and foreign investment for Chinese and Indian firms. Buoyed by domestic (financial) liberalisation and a growing global economy, the period from 2000-2009, saw a steady increase in outward investment by both Chinese and Indian firms.

The financial crisis of 2008 abruptly changed all that. World financial markets became more cautious about lending and the pull factor of overseas markets suddenly became weak after 2008 (Hill & Jongwanich, 2009). Although the impact of the financial crisis for the availability of finance seems obvious, EMNEs from India and China also operated in economies that were not that exposed to global financial markets (Ghosh and Chandrasekhar, 2009). Yet Figure 1 below shows that the outward investment paths of Chinese and Indian firms began to diverge sharply after the financial crisis. Despite a large literature on EMNE, few scholars have paused to ask why this should be the case? Why did the crisis affect investments by Indian firms but not Chinese firms?

[Figure 1 here]

In this paper, we offer an explanation for the above phenomenon that is rooted in the structure of financing and motives of outward investments from firms in the two countries. Specifically, we argue that Indian firms that faced financial market imperfections domestically and market contraction overseas had to cut back on outward investments as markets shrank and sales growth dampened. World Bank data show that in 2015 domestic credit availability in India (as a percentage of GDP) increased only marginally from 59.346% in 2005 to 75.611%. The bond market was also not much supportive, the amount of capital raised through issuing bonds remained between US\$ -3.94 billion and US\$ 10.339 billion during this period. The Initial Public Offering (IPO) market experienced a brief surge in 2010 with about 100 IPOs in a year; however, it slumped in subsequent years (dropped to 3, 5 and

21 IPOs in years 2013, 2014, and 2015, respectively). Consequently, Indian firms had to rely on internal funds to finance their investments, in the context of shrinking markets for their products.

In contrast, Chinese firms relied heavily on debt finance to seek out international assets. Importantly, their foreign investment targets (distressed assets) became cheaper after the financial crisis and the reliance on leverage as the instrument of finance inured Chinese firms to the fluctuations of stock markets and the other financial implications of the crisis. Domestic credit provided by financial sector (as a percentage of GDP) increased from 132.591% in 2005 to 194.272% in 2015 and IPO activity in China was markedly higher with a record number of 347 IPOs in 2010, however, it slowed down in subsequent years to 42 in 2015 (Azevedo et al., 2018). Consequently, their outward investment paths that looked so similar to that of Indian firms before 2008 began to diverge rapidly.

Beyond the phenomenological explanation for divergent behaviour in outward investments, our study has value for research examining the outward investments of emerging markets' firms. Current scholarship tends to treat all EMNE as a similar kind of firm. Thus, a widely held view is that EMNE firms have special firm specific advantages such as relational assets and flexibility (Cuervo-Cazurra, 2011; Ramamurti, 2009; Buckley et al., 2007; Dunning, 2001), which are a result of shared country specific advantages and shared similar institutional disadvantages. This is particularly so in the financial sector, where EMNE are handicapped by poor financial institutions in their home countries (Bhaumik et al., 2012; Lardy & Subramanian, 2011), and so the ability to raise financial resources for outward investment is a crucial ownership advantage facilitating internationalisation.

The argument in our paper suggests that a shared institutional disadvantage may manifest its effect on firm investment strategies quite differently, depending on EMNE outward investment motives and if outward investments take place during a global upswing or downswing. Even though both China and India share the institutional disadvantage of weak financial markets, by many indicators one could conclude that the Indian financial sector is more market-based and better developed than China's. Nevertheless, the different outward investment motivations of the two groups of firms are an important source of heterogeneity in the financing they could secure for their outward investment. Further, as we focus on EMNE behaviour over time, we can also see that the relationship between motivation, financing and internationalisation is not symmetric between upswing and downswing periods.

The remainder of the paper is organized in the following way: The next section reviews the vast literature that has emerged on EMNE internationalisation and highlight the central role accorded to the push and pull of domestic institutions. The role of financial institutions have been understudied despite the seminal contribution of Buckley et al., (2007) which pointed to the considerable financial market imperfections faced by EMNE. Framing our hypothesis development in the context of adverse financial markets and the possible responses by EMNE firms to finance outward investment opportunities, we develop arguments and testable hypotheses about how financing strategies might have changed in response to the global financial crisis. Section 3 describes our empirical strategy and Section 4 contains a description of the data and definitions of relevant variables. Empirical results are presented in Section 5, followed by a discussion of the implications and main contributions of our study in Section 6.

## **2. Theory and Hypotheses**

### *2.1. Weak institutions and outward investment by EMNE*

The widely accepted model of firm internationalisation explains internationalisation as an outcome of firm specific advantages (FSA) and country specific advantages (CSA) in the home and host countries following Rugman, Verbeke & Nguyen (2011). CSA are the advantages of a country which derive from its institutions (following Porter's diamond this could refer to the quality of suppliers, national institutions, natural resource endowments and/or competitive environment facing firms) while FSA refers to the advantages of particular firms which may reside in their unique capabilities and resources (such as its personnel, technology, brands and/or equipment). Combining those two dimensions in a matrix, we can predict the internationalisation behaviours employed by the firm. If the CSAs of the home country are dominant and FSAs rather weak, economic theories argue that comparative advantages of a country (or the location within an industrial cluster) will lead to exports – regardless of the specific characteristics of the company. If FSAs are strong and CSAs are weak, the focus of the international strategy is on exploiting the company's resources, without much influence from the location. In case FSAs and CSAs are both strong, a firm has an incentive to operate across borders, coordinate its resources across borders and needs to combine the FSA of the company with the CSA of the host country (and, maybe, the CSA of the home country) in order to be successful (Rugman et al. 2011, pp. 766-768).

Although emerging markets constitute a culturally and economically heterogeneous group of nations, their similarity rests on the distinctive and common features of poorly functioning institutional environments that hinder the growth of businesses in their countries. In the parlance of the CSA/FSA framework, they all suffer from some sort of deficit in their CSA, although this may not be uniform across sectors. Weak home country institutions which we may think of as a country specific disadvantage (CSD) have a significant and often similar impact on emerging market firms' internationalization strategies (Luo & Wang, 2012; Peng et al., 2008). Thus, the story of internationalisation from emerging markets has been seen as a response to the push and pull of institutional factors (or CSD) faced by firms with non-standard FSA.

In their seminal work, Buckley et al., (2007) place considerable emphasis on financial market imperfections as a significant CSD common to several emerging market firms (including China which is the country of their focus) and argue that such imperfections mean access to finance can confer special ownership advantages to State Owned Enterprises. Other scholars like Khanna and Yafeh (2005) have argued that in many emerging markets organisational forms such as business groups who operate internal markets of finance for group companies overcome such financial market disadvantages.

A large literature has also noted the unique ownership advantages conferred by weak institutions, which can underlie internationalisation. Ramamurthi (2009) elaborates the nature of such FSAs that derive from an "adverse environment" for business such as EMNE ability to adapt imported technology to develop products suited to the special needs of local customers. These adaptations include making products cheaper and more affordable, making products that were rugged and easy to maintain in the harsher road conditions, the absence of after-sales service and lastly operational and technological efficiency in the presence of poor power supply and other infrastructural impediments.

Going beyond cases, Yiu et al. (2007) investigate the impact of home market conditions on the relationship between a firm's ownership advantages and outward investment. They show that a positive relationship between technological capabilities and outward investment is contingent on the industry receiving support in the home market. Lu and Wang (2012) identify and justify the existence of a systematic association between country specific ownership advantages stemming from home market and domestic firms' overseas expansion. Specifically, they show that timing, location and scale of outward investment of Chinese firms are dependent on the competitive advantage they gain from home market. Similarly, Wang et al. (2012) suggest that government-related ownership

advantages shape firms' level, location, and type of overseas investment. Athreye and Kapur (2009) argue that Chinese overseas acquisition is more commonly carried out due to country specific advantage of government financial support. Kumar and Chadda (2009) provide support for this stylized fact by showing that government support led Chinese firms to undertake outward investment primarily in natural resource seeking activities to meet the government's ambition to achieve long term natural resource security of the country. Fortanier and van Tulder (2009) also note that foreign investment of Indian and Chinese firms is mainly driven by their assets build in domestic markets. Studying India's Tata group and China's Haier group, Duysters et al. (2009) show that the advantages associated with conglomerate structure, earlier experience, and government support played important roles in internationalizing the operations of both firms. Cuervo-Cazurra (2011) finds that many EMNE first develop domestically the knowledge to manage complexity and differences in competitive conditions and institutional environments that subsequently facilitates their foreign expansion, which often inverts traditional notions of internationalisation, where the CSA are largely seen as supporting FSA, the exciting finding in the case of EMNE is that more successful firms develop hard to imitate FSAs, due to the deficits in CSA.

In contrast to the above studies which have many looked at the pull of internationalisation strategies due to distinctive FSA of EMNE firms, a large literature has also argued that institutional imperfections may push EMNE firms towards internationalisation to acquire supporting CSA in the host environment. Mathews (2006) in the context of his study on the four dragons (South Korea, Taiwan, Singapore, and Hong Kong) first suggested that international expansion is not only derived from ownership advantages but rather from the advantages firms can access in foreign markets. According to him, firms internationalize by acquiring strategic resources through linking in foreign markets and leveraging their ownership advantages in combination with new resources. Concomitantly, such firms also embraced a learning mentality and adopted novel means of learning to ensure foreign market survival. In a similar vein, Luo & Tung (2007) have argued that emerging market firms use internationalization as a 'springboard' to overcome their latecomer disadvantages in the global arena and are not evolutionary but radical in their international expansion. These strategic resources include advanced technology, brand name, managerial expertise, and access to the customer base in foreign markets. Cuervo-Cazurra & Genc (2008) add that emerging market firms may leverage 'institutional arbitrage,' which indicates these firms' search for more efficient institutions outside their home markets. Athreye and Godley (2009) find that Indian pharmaceutical firms internationalize to



overcome their initial disadvantages of being latecomers and gain long term competitive advantage. The desire to build lasting competitive advantage, the extent of the technology gap, nature of intellectual property rights regimes, and liberalization of financial markets are important contextual factors in understanding the growth of pharmaceutical investments from India. Focusing on location factors, Pradhan (2011) finds that both Chinese and Indian multinationals are attracted to foreign destinations having higher cost differentials relative to the domestic economy. However, Chinese multinationals prefer destinations with locational proximity and small size, whereas Indian multinationals are more likely to target countries that have a bilateral investment treaty with India, irrespective of their geographical distance from India. Thus, the pull and push arguments for internationalisation stemming from adverse institutional environments suggest internationalisation may be used both to exploit and augment the distinctive FSA of EMNE and they may also try to overcome institutional disadvantages or CSA deficits at home by exploiting CSA at the host country. The motive of the internationalising EMNE firm may be quite idiosyncratic and specific to the firm's overall vision and strategy of growth.

There is considerable empirical evidence that strategic asset and resource seeking motives dominated outward investments from China. Buckley et al.(2007) and Rui & Yip (2008) argue that Chinese firms internationalize to acquire strategic capabilities (to enhance competitive advantage) and to leverage ownership advantages stemming from lower costs of production, large technical workforce, access to state-supported scientific and technical research and government financial support. Buckley et al., (2007) and Lu et al., (2011) show that supportive government policies generally in the form of governmental investment insurance, tax reduction, as well as direct access to investible funds in the form of foreign currency and government seeding funds financed both asset and market seeking outward investments.

In contrast, market-seeking motives drove foreign investment from India. Studies on Indian firms suggest a more trade-supporting motive for internationalisation, consistent with the exploitation of their FSA tested in export markets (Kumar & Chadha, 2009). Although Indian firms also face underdeveloped financial institutions but unlike in China, they do not face a complete vacuum of market-based institutions. Direct state intervention in the provision of finance for investments is uncommon and firms usually raise finance for investment through borrowing on the stock market and utilising internal funds. Consequently, business groups with well-functioning internal markets for finance are more frequently at the

forefront of internationalisation and ownership advantages are located in family ownership and group affiliation (Singh & Kaur, 2014).

Motives for internationalisation can interact with institutions in a variety of ways and recent studies of EMNE strategies are just beginning to uncover these interactions.<sup>1</sup> In this paper, we aim to extend this line of inquiry by focusing on CSA deficit due to imperfect capital market institutions and the FSA conferred by the ability to raise finance for investments. Specifically, we examine how Chinese and Indian firms with resource-seeking and market-seeking motives, respectively, benefited differently from the financial market immaturity of their economies. Understanding this interaction, enables us to paint a clearer picture of the outward investment trajectory of Chinese and Indian multinationals and explain why these trajectories started to diverge after 2008.

## *2.2 Hypotheses development: Imperfect financial markets and financing of outward investment*

The two most important functions of financial market institutions, viz. the availability of credit finance and risk bearing. The availability of credit finance depends upon the presence of lenders and borrowers but the ability to spread risks depends on how deep the financial market is (thickness of buyers and sellers) and systems of monitoring that can evaluate and price risk. Das & Banik (2015) show that although firms in both India and China face imperfect financial markets there are important differences between the two countries.

In India, financial markets are bigger due to a longer history of market relations, and financial institutions are also better able to assess risk, but can be sensitive to the riskiness of investments, which in turn is reflected in a higher cost of capital for risky investments and types of borrowers perceived to be risky. Reform of financial markets in India since 1985, has aimed at instilling competition in the banking sector and improving its risk bearing capacity. The appointment of a capital markets regulator in 1988-- the Securities and Exchange Board of India— was meant to introduce improved trading practices and greater transparency in both the primary and secondary segments of securities market in India.<sup>2</sup> The ambition of SEBI reforms is to make Indian financial markets suitable for start-ups and equity finance, although it is likely that this process is slow and will need the parallel

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<sup>1</sup> For example, Gubbi et al. (2010).

<sup>2</sup> An interesting aspect of SEBI reforms has been the involvement of leading Indian industrialists such as Infosys (software) founder Narayana Murthy, who was one of the first Indian firms to list on NASDAQ and Piramal Industries (healthcare) owner Ajay Piramal, who in Jan 2019 raised more than Rs. 5000 crores through bonds issued in foreign markets.

evolution of stricter systems of property law and contract enforcement. In China, on the other hand, the development of financial markets is much more recent and dominated by a few large buyers and sellers, many of which are governmental organisations. Financial markets do not assess risk well and businesses do not take on all the risk themselves, rather the government shoulders a portion of that risk in return for business acting in alignment with policy objectives (Lardy & Subramanian, 2011).

Discriminatory lending practices are prevalent in both Chinese and Indian markets, although they happen in different forms. Chinese banks give preferential treatment to politically connected firms because bank managers serving on state-owned banks have strong incentives for establishing good relationships with governments (Li et al., 2008). Poncet et al. (2010) find that political connections are vital in obtaining bank loans for firms operating in service industries and operating in areas with a less developed banking sector while governance and financial performance are important determinants of lending decisions for manufacturing firms. In a similar vein, Chen et al. (2013) find that bribes rather than firm performance secure loan access in China. State-owned enterprises (SOE) were not on the other hand credit constrained. In the absence of systematic information and monitoring, investment plans from State sponsored actors are simply less likely to be perceived as risky. There is some evidence that such discriminatory lending practices may have led to adverse selection — Bailey et al. (2011) find that poor financial performance and high managerial expenses increase the likelihood of gaining bank loans from state-controlled banks.

Asymmetric information, rather than state direction, explains discriminatory practices and a significant threat of adverse selection, in the Indian credit market. Bhaumik and Piesse (2008) also suggest that Indian banks, in general, and private banks, in particular, are more risk averse, and less likely to disburse credit. Consequently, larger firms that are in a better position to post collateral are less financially constrained as compared to smaller firms and younger firms (Bhaumik et al., 2012; Bhaduri, 2008). These groups also experienced a significant increase in financial constraints in the post-liberalization period. Similarly, stand-alone firms also have low access to external funds than business group affiliates (Bhaumik et al., 2012). Bhaumik et al. (2018) examine the impact of financial liberalisation on the borrowing behaviour and find that private unaffiliated firms and small firms are the most vulnerable in the credit market, both before and after liberalisation. In contrast, business group affiliated, foreign and state-owned firms benefitted from banking sector reforms.

The foregoing discussion thus suggests that while both Chinese and Indian firms share the CSA deficit due to poorly functioning financial markets, the nature of the institutional

challenge and policy responses to it were different in the two countries. Thus, firms in these countries may have faced quite different options in their financing decisions. We consider recourse to each of the three main modes of financing by Chinese and Indian firms viz. internal cash reserves, drawing on sales revenues and borrowing, to analyse how the use of financing strategies may have changed following the financial crisis.

### *2.2.1. Mitigating strategies for financing investment: relying on own cash reserves*

Laeven (2003) shows that in the presence of poorly developed capital markets, firms investment activity dampens as firms have limited access to informational and financial resources. Their theoretical justification relies on Myers & Majluf (1984) who argue that when information asymmetry increases, the existence of financial slack (cash reserves) directly affects firm investment. Firms having sufficient amount of financial slack will undertake all possible investment opportunities where net present value is positive, while firms lacking such resources would forgo some of those investible opportunities. Thus, if a firm faces high shadow cost of external finance (due to financial market imperfections) then there would be a positive relationship between firm investment and cash stock.

Bhaumik et al., (2012); Carpenter & Guariglia, (2008) and Laeven, (2003) confirm that credit-constrained firms will rely on their internal resources to finance investments which are deemed risky. This effect is likely to be stronger for firms' outward investment decisions due to the information asymmetry surrounding the uncertainty and riskiness of foreign investment (Peng et al., 2008), but might also apply to the financing of riskier investments. Cull et al., (2015) demonstrate that even large firms that have the potential to become a hub for innovation in the future are often financially constrained when they undertake foreign ventures because they are perceived as riskier and Manova et al., (2015) show that financial constraints can confine the overall flows of foreign trade.

Thus, we expect that financial market imperfections in the Indian and Chinese economies, will force firms to rely on their internal cash flows for financing outward investments and that the extent to which they use their own cash flows to finance investment is also a measure of the credit-constrained nature of these firms.

***Hypothesis 1a: Indian and Chinese firms rely on internal cash flows to finance both domestic and foreign investment.***

The financial crisis of 2008 has may have increased firms' dependence upon their internal cash flows. According to the World Trade Organization (WTO), in 2009 following the financial crisis, world trade flows decreased by almost 12%. This happened due to a credit crunch, which increased financial constraints thus restraining production and reducing exports. Austerity policies in many advanced economies and interbank lending rates across countries were higher, increasing interest rates. Ivashina & Scharfstein (2010) show that new loans to large borrowers decreased by almost 79% during the period of the financial crisis. In addition to bank loans, Hill & Jongwanich (2009) argue that the financial crisis reduced the opportunity to raise external funds through initial public offerings, corporate bonds, and the sharp fall in global equity prices.

Although India and China were widely believed to have escaped the effect of the financial crisis because of their smaller reliance on international markets when compared to countries in Europe and North America (Reddy et al., 2014), the inability of even large firms to increase external financing may have compelled them to restrict their international activities. In particular, the collapse of commodity prices and low consumer demand in the developed world due to the recession had an adverse effect on the available financial resources from sales to fund investments. Ghosh and Chandrasekhar (2009) show that the Indian economy was adversely affected by the global financial crisis due to the greater reliance on exports particularly of services (~24.27% of GDP in 2008), higher dependence on capital inflows (about 9% of GDP in 2008), and the role that inward capital had played in underpinning a domestic credit-fuelled consumption and investment boom.

Although China continued to have one of the highest rates of economic growth across the globe, recording 9.6% in 2008 and 9.2% in 2009, these rates hide the substantial drop from the 14.2% growth that China enjoyed in 2007. The most visible damage was the sharp decline of export-orientated industry. In November 2008, China's export growth rate fell sharply from 20% in the previous month to -2.2 % (Li et al., 2012). The immediate effect of the financial crisis was the crash of the stock market in China, which wiped out more than two-thirds of its market value. Many Western partners of local Chinese banks (e.g. Bank of America, UBS, and RBS) sold their minority stakes to retrieve capital. At the same time, China's sovereign wealth fund (China Investment Corporation, CIC) also suffered huge losses due to their engagement in Western companies. There was some offset due to the gradual appreciation of the Renminbi against other currencies.

Figure 2 below uses World Bank data to look at the availability of bank loans to the private sector in India and China before and after the crisis. While bank credit to Indian firms

contracted from 2010, we see no such tendency in Chinese bank lending which continued to rise. Other indicators such as domestic credit to the private sector and the overall credit provided by the financial sector show similar trends. World Bank data shows that domestic credit provided by the financial sector (as a percentage of GDP) increased by 81.27% from 2008 - 2017 for China whereas this increase is only 4.31% for India (where it rose from 69.1% of GDP in 2008 to 72.07% in 2017).

[Figure 2 here]

Thus, the global financial crisis decreased the supply of domestic as well as foreign credit for Indian but the picture for Chinese firms was different as the firms enjoyed expanded credit into the economy. Elliot and Yan (2013) note that the banking system provided the bulk of the economic stimulus in the form of easier loans after the global financial crisis had struck in 2008. Liu et al. (2018) find that while the economic stimulus package did not mitigate the lending inefficiencies in the Chinese financial system, the government support package did result in more resources being available for investment by state-owned firms.

***Hypothesis 1b:** The financial crisis increased the reliance on own funds to finance domestic and foreign investments in India but not for Chinese firms as they received expanded credit in the post crisis period.*

#### *2.2.2. Motives for outward FDI and their influence on financing modes*

The motives for outward investment may also play a large role in determining the financing modes of outward investment. Dunning (1988)'s eclectic paradigm distinguished between the motivations behind foreign investments of enterprises as market, efficiency (or cost reduction) or resource (or strategic asset) seeking. Resource and asset seeking firms engage in overseas investment to acquire strategic assets to gain the ownership advantages that they lack (Gaur et al., 2018; Luo & Tung, 2007) while market seeking firms aim to exploit their existing competitive advantages. Market seeking investments are easily financed by sales revenue but asset seeking investments promise income in the longer term and must at least partly be financed by borrowing. Such borrowing could take several forms: Firms belonging to business groups could borrow from other parts of a business group. State enterprises could borrow from government banks and standalone firms could borrow from capital markets at home and abroad. The generalised nature of the financial crisis inevitably

affected many of these sources of financing. For market seeking investors, sales markets shrank, reducing the finance available from sales revenues. Those relying on borrowing also saw a shrinkage of sources of finance raised from capital markets, though business group borrowing and loans from the state were less likely to shrink. Indeed in all countries, stimulus packages were designed to ensure that the state

Elango & Pattnaik (2007) argue that emerging MNEs that lack marketing advantages and R&D, may target large international markets that contain sufficient resources within them. Such market seeking investments are often self-financing, i.e. sales from earlier periods are financing future investments. There is ample evidence that Indian firms' outward investment had market-seeking motives (e.g., Deng & Yang, 2015; Gubbi et al., 2010). Paul (2014) identifies market-seeking motives as particularly important for investments in the African region where India also has Bilateral Investment Agreements with seven African countries.

The financial crisis of 2008 prompted a recession in many advanced economies and a gradual closing down of markets for India's important export sectors (software, pharma), where a large part of the country's outward investment was concentrated. Internationalising firms found it difficult to raise more money and expand overseas. The financial reforms in India which sought to improve the transparency and efficiency of domestic capital markets had also brought some constraints for Indian firms that wanted to borrow on external capital markets. External borrowing would show up as leverage and potentially constrain future borrowing by worsening the credit rating of firms, so firms stayed away from external borrowing as far as they could. This is also reflected in Figure 2, discussed earlier.

In contrast, empirical studies provide evidence for resource-seeking motives of Chinese firms (see Andreff, 2016; Nicholson & Salaber, 2013). The financial crisis represented a unique opportunity for many Chinese and other EMNE firms that sought such strategic assets because the devaluation of assets in crisis-hit economies, particularly Europe and US, meant it was now possible to buy such strategic assets at bargain prices. The economic crisis depressed asset prices globally, and Chinese firms launched multibillion-dollar bids for distressed resource firms (many in Europe), while the Chinese government promoted outbound investments by broadening financing channels and easing regulatory procedures for firms with overseas ambitions. In fact, fourteen Chinese acquisitions were completed in Spain and two in Portugal in 2009 (both these countries were severely hit by the financial crisis in 2008 and consequently they were forced to undervalue the public assets). Another good illustration of such an opportunistic takeover is the Chinese shipping giant

Chinese Ocean Shipping Corporation (COSCO), which acquired the rights to operate the two main container terminals at Piraeus port outside Athens, Greece in 2009. The successful acquisition of Volvo Cars by Zhejiang Geely Holding Group's (Geely) is another example of acquisition of undervalued assets due to the financial crisis.

Many Chinese asset-seeking investments are financed by borrowing, notably from banks who disbursed loans according to Governmental priorities and provided bank credit with low interest rates. Figure 2 shown earlier gives evidence of the expanded credit to the private sector in the post crisis China. Politically connected Chinese firms enjoyed preferential treatment in the credit market (e.g., Hung et al., 2017; Du & Lu, 2016). More importantly, the reasons for eschewing debt in India did not apply in China as politically connected firms are perceived as less risky. Indeed, higher stocks of debt (or leverage) may even signal political connections and low risk in the Chinese context.

Thus, the motives of investment and the financial constraints faced by firms due to immature institutions after the financial crisis resulted in different structures of financing for outward investment of Chinese and Indian firms. Chinese firms, as already noted extensively in the literature and in detail by Buckley et al., (2007), could always raise the money for their resource seeking investments through borrowing from the state and other financial institutions directed by the state and their investment targets were now cheaper. In contrast, Indian firms that depended upon external funds -- domestic capital markets and financial listing abroad for financing—were less likely to raise finance from these sources due to a slowdown in market growth and pessimism about future growth opportunities. The growth in outward FDI from India and China began to diverge because of this interaction between motives and financing modes.

Based on the above reasoning, we propose the following hypotheses:

**Hypothesis 2a.** *Overseas investment of market seeking Indian firms are positively affected by their overseas sales, but overseas sales do not have a significant impact on the overseas investment of strategic asset seeking Chinese firms.*

**Hypothesis 2b.** *The positive impact of overseas sale on overseas investments of Indian firms would decrease after the financial crisis.*

**Hypothesis 3a.** *Overseas investment of Indian firms, which do not receive additional support from India's banks and bond market investors, will be adversely affected by their*



*leverage while the overseas investment of Chinese firms, which receive support of Chinese banks, are unaffected by their leverage..*

**Hypothesis 3b.** *The adverse impact of leverage on overseas investments of Indian firms would increase after the financial crisis but the overseas investments of Chinese firms would continue to be unaffected.*

### *2.2.3. Other factors influencing financing behaviour*

Other factors have been highlighted in the literature as influencing financing and therefore investment behaviour. We note them here (and control for their influence in our empirical analysis) although they are not the focus of our analysis.

One way to mitigate the effect of imperfect financial markets is that firms in emerging markets may develop organizational forms that facilitate the sharing of institutionally bound resources and the internalization of inefficient markets (Hoshi et al., 1991). Business groups, which are collections of independent firms from various industries, connected either formally or informally, but usually through holding groups that redistribute resources across group members are dominant in emerging markets (Khanna & Yafeh, 2005). The potential sources of gain from business group affiliation include the spreading of risk through a group structure, economies of scale and scope, and utilisation of vital resources in different contexts including in information sharing and pooling (Buckley & Casson, 1998; Buckley et al., 2002; Buckley, 2018). Although group membership may make financial resources available, such investments may not be efficient -- see evidence from Lins & Servaes (1999) on Japanese firms and Shin & Park (1999) for the Korean firms.

Research examining the financing structure of group affiliates has concentrated on their lending relationships to banks and fund allocation amongst affiliated firms to ease borrowing constraints in the capital market. Keister (1998) notes that business groups function as ‘insider lenders’, allowing affiliated firms’ access to otherwise scarce funds when capital market is inadequate at allocating finance while Hoshi et al., (1991) found that Japanese keiretsu firms maintain strong relationships with banks; they, therefore, face less financial constraints to their investment. Redistribution within business groups may move resources from stronger to weaker firms that may facilitate survival during difficult times. Studies also show that it is more difficult to use internal resources to finance overseas investments (Estrin et al., 2009) and that as business groups are also prone to moral hazard, they might eschew the higher risks associated with overseas investments (Bhaumik and Zhou,

2014). Bhaumik et al (2012) also doubt that business groups can sustain the advantages associated with internal capital markets indefinitely and suggest any such advantages may not sustain higher levels of outward investment.

The weakness of formal institutions such as property rights and rule of law can be overcome by the direct state-ownership of firms (La Porta et al., 1999). State-owned enterprises (SOE) typically have soft budget constraints since they have strong resource dependent relationships with home-country institutions (Lu et al., 2014). Moreover, the main function of state-owned firms is not to maximize profit, but rather to support the strategic investment goals of a directed industrial policy (Wang et al., 2012). Buckley et al., (2007) show that Chinese firms enjoy privileged access to finance on preferential terms while Morck et al., (2008) also show that the cost of capital is substantially lower for Chinese SOE compared to private firms. Preferential treatment and easier access to low cost capital can spur firms from emerging markets to invest overseas as they can mitigate financial risks associated with foreign investments, and benefit from the subsidization of less profitable technology, particularly in developed markets (Buckley, 2018; Ramasamy et al., 2012). Ramasamy et al., (2012) also argue that SOE in emerging markets also have access to more accurate and detailed information about technology and new investment opportunities.

Pinkham & Peng (2017) show that firms can build contract safeguards by using another country's institutions (institutional borrowing). In the context of weak financial market institutions at home, firms may opt to seek foreign listing (also called cross listing as many such firms are already listed on domestic markets) to obtain new sources of cash flows. Measures to deregulate foreign currency transactions and allow domestic firms to take foreign currency in and out of the country for investment purposes facilitated such listing<sup>3</sup>. Temouri et al., (2016) also distinguish between the signalling and bonding functions of cross listing and show that both contributed to a firms' internationalisation strategy.

In view of this previous work, we include business group affiliation, being an SOE and whether a firm listed on an overseas stock exchange as independent controls that could mitigate the availability of internal resources for investment.

### **3. Empirical Strategy**

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<sup>3</sup> Whether reforms achieved their objective in developing economies has been a subject of active empirical research which has yielded mixed findings (See Temouri et al., 2016, Bhaumik et al., 2012; Laeven, 2003, for a review of studies).

To test the long run investment decision based on shadow cost of capital, which is higher than the market price whenever capital is constrained, we adopt the Euler model of investment which is based on Laeven (2003) and Ratti et al. (2008). It models investment expenditure as an autoregressive function of a vector of firm specific characteristics and also includes the square term of its lagged investment as an independent variable<sup>4</sup>. Unlike the alternative strand of studies originating from Fazzari et al. (1988) and further developed by subsequent studies such as Bhaumik et al. (2012), Euler model avoids the reliance on market value—Tobin’s Q. Therefore, it has a better control for the effect of shocks to future return on investments thus reducing any bias to the coefficient on financial constraint. Moreover, Euler model allows explicit modelling of the shadow cost of financing as a function of cash reserves. Foreign operations offer both additional risk (exchange rate, political) as well as growth opportunities. Conducting business at distance, however, makes it difficult for domestic investors to retrieve information about a firm’s economic situation and Bodnar & Weintrop (1997) argue that a firm faces a higher degree of financial constraints for foreign investment as opposed to domestic investment.

The basic investment equation used in the literature on financing investment behaviour is (1) below:

$$\left(\frac{I}{K}\right)_{it} = \beta_1 \left(\frac{I}{K}\right)_{it-1} + \beta_2 \left(\frac{I}{K}\right)_{it-1}^2 + \beta_3 \left(\frac{Y}{K}\right)_{it-1} + \beta_4 \left(\frac{CF}{K}\right)_{it-1} + d_t + f_i + v_{it} \quad (1)$$

We assume this model can also explain the overseas investment of the firm. Most of the literature on EMNE implicitly assumes independence of foreign and domestic investment decisions as outward investment decisions are driven by CSA factors, which are unlikely to influence domestic investments.<sup>5</sup> We allow domestic market opportunities to influence foreign investment, although this probably only applies to market seeking outward investments. In principle, the sign of the coefficient capturing domestic investment opportunity may be positive (indicating complementarity), negative (substitutability) or zero (indicating independence of the domestic and foreign investment decisions).

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<sup>4</sup> See Laeven (2003) for detailed derivation of the investment function.

<sup>5</sup> At the macroeconomic level, however, we should expect outward investment in the economy to influence domestic investments, through its effect on aggregate demand and due to scale effects in R&D and production. See Dasgupta (2017) for a test of the macroeconomic hypothesis of complementarity of domestic and foreign investment for BRIC countries.

We also augment the variables included in the RHS of (1) based on the discussion of Section 2. If  $I^f$  represents foreign investment, the equation for foreign investment is specified as (2) below and estimated for the group of Chinese and Indian firms separately:

$$\begin{aligned}
I_{i,t}^f = & \alpha + \lambda_1 I_{i,t-1}^f + \lambda_2 I_{i,t-1}^{f2} + \lambda_3 CF_{it-1} + \lambda_4 FC_{it} + \lambda_5 CF_{it-1} \times FC_t + \lambda_6 FList_{it} + \lambda_7 CF_{it-1} \times FLIST_{it} \\
& \lambda_8 For_{Sale}_{it-1} + \\
& \lambda_9 For_{Sale}_{it-1} \times FC_t + \lambda_{10} MADom_{Sale}_{it-1} + \lambda_{11} Leverage_{it-1} + \lambda_{12} Leverage_{it-1} \times FC_t \\
& + \lambda_{13} BG_{it} + \\
& \lambda_{14} CF_{it-1} \times BG_{it} + \lambda_{15} SOE_{it} + \lambda_{16} CF_{it-1} \times SOE_{it} + \varepsilon_{it}
\end{aligned} \tag{2}$$

The variables included on the RHS reflect our conjectures and hypotheses. The variable of interest for Hypotheses 1a and 1b is the operating cash flow (CF). A firm when financially constrained does not have access to external finance to undertake investment and may rely on internally available financial capital. The investment-cash flow sensitivity ( $\lambda_{13}$ ) is a measure of the financial constraint faced by firms and expected to be negative (Hypothesis 1a). We interact this variable with the financial crisis ( $FC$ ), which is a dummy variable. Our expectation is that the coefficient on this interaction term ( $\lambda_{15}$ ) is positive for Indian firms but negative for Chinese firms (Hypothesis 1b)<sup>6</sup>.

A firm can finance its investment is by relying on its sales income and borrowing or incurring leverage. To test hypotheses H2a and H3a,  $For_{Sale}_{i,t-1}$  that is firm level 1-year lagged foreign sale and  $Leverage_{i,t-1}$  that is one-year lagged total leverage are added in the model respectively. Hypothesis 2a implies that  $\lambda_8$  is positive for (market seeking) Indian firms. The coefficient on cross term  $For_{Sale} \times FC$  ( $\lambda_9$ ) tests Hypothesis 2b, and we expect this coefficient to negative for (market-seeking) Indian firms. The influence of Leverage on the financing of investment is more complex. While borrowing allows firms to raise financial resources needed for investment, high levels of leverage are also making a firm less creditworthy. For this reason, we should expect the coefficient of  $Leverage$  ( $\lambda_{11}$ ) to be negative. However, this reasoning does not apply in the presence of non-market strategies (as in the case of China) and in Hypothesis 3a, we expect  $\lambda_{11} > 0$  for (asset seeking) Chinese firms. To test the Hypothesis 3b, the interaction term  $Leverage \times FC$  is introduced, and we expect that its coefficient ( $\lambda_{12}$ ) is positive for (asset seeking) Chinese firms.

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<sup>6</sup> We also estimated simultaneous equations for domestic and foreign investments (without including the moving average of sales) and our results were broadly consistent. All three hypotheses found support and the coefficients of the levels of foreign and domestic investment had no impact on each other. Results of this estimation are available from the authors upon request.

To control for known responses to imperfect capital markets, as discussed in Sections 2.2.3, we include Business-group affiliation, State-ownership and Foreign Listing as individual terms and as factors mitigating the financial constraints (expressed as dependence on the Cash Flow). As these are mitigating factors, we expect in each case the CF interacted term to have a negative coefficient. Lastly, we include moving average of domestic sale, *MA\_Dom\_Sale* (to capture the impact of growth of domestic markets (and the potential for domestic investment) on foreign investments).

We describe the construction of the variables used in the empirical estimations in Table 2 below. To normalise the distribution of the error term, all variables are scaled by the contemporaneous measure of capital stock ( $K$ ).

The error term  $\varepsilon_{i,t}$  is orthogonal to any information available at the time of the investment decision. As equation (2) is a dynamic model we use the Arellano Bond GMM method (using `xtabond2` GMM command in Stata) to estimate the model.

## **4. Data and Measurement of the Variables**

### *4.1. Data Source and Sample Selection Criteria*

The data used in this paper come from the ORBIS database, provided by Bureau van Dijk (BvD). ORBIS contains firm level data that provide detailed information on financial accounts and other firm specific information for more than 650,000 firms. Our sample includes data on 510 large Indian and Chinese non-financial firms with foreign subsidiaries. ORBIS defines very large companies as those with operating revenue of at least US\$40 million or over 1,000 employees. Indian firms (298) represent 58% of the total sample and Chinese firms (212) account for the remaining 42% of the sample.

We use an unbalanced panel dataset since this type of panel structure has the benefit of partially mitigating potential selection and survival bias problems (Carpenter & Guariglia, 2008). We focus on listed non-financial firms operating in the period 2005 to 2015. The focus on listed firms is due to two main reasons. First, since our estimation model investigates the effect of the crisis on the availability of finance for which credit through foreign listings is an important source, only publicly listed firms are appropriate for this study; second, accounting data quality is better for listed firms.

We include firms with observations for at least five years but exclude firms with missing values for any of the explanatory variables and firm-years that report negative values for capital stock and sales. To mitigate the effect of outliers and errors in the data we also

exclude observations with extreme values for the variables relative to their means (Ratti et al., 2008). Thus, we exclude observations with  $I/K$  above 2.5,  $CF/K$  above 0.7,  $Sale/K$  above 20 and  $Leverage/K$  above 10. In all, we exclude a total of 46 observations from the sample to obtain an unbalanced panel of 3908 firm-year observations for our statistical analysis.

Table 1 presents the distribution of our sample across countries and industries. Most of the Indian firms belong to the Textile products (35), Chemicals (33) and Software (IT) industry (32) sectors. Chinese firms belong to Textile products (26), Chemicals (24), Electronics (22) and Oil & Gas sub-sector (17). The industry composition of investment from the two countries is different-- only about a third of the sample in both countries operated in the same industries.

#### 4.2. Variable measurement

Table 2 presents the sources and definition of the variables used in the estimations.

We measure total investment as the change in capital stock at the end of the accounting year, net of depreciation. We calculate annual depreciation as the difference between the accumulated depreciation in the current year and the depreciation in the previous year. Capital stock (K) is the balance sheet item, 'Tangible Fixed Assets' and includes accumulated depreciation. Specifically, capital stock is the sum of machinery, plant, equipment, buildings, land, property, other tangible assets, and construction-in-progress.<sup>7</sup>

As ORBIS does not report separate balance sheet figures for firms' foreign investments; therefore, we reverted to the financial statements of the foreign subsidiaries, treated the change in their capital stock from the previous year plus depreciation, as the firm's foreign investment, and scaled it by the contemporaneous measure of capital stock (K).

We use the operating cash flow (CF) as a measure of the firm's reliance on its own financial resources. Firm *Leverage* is the firm's total long-term and short-term leverage as reported in ORBIS. *Sales* figures measure the firm's total sales in a specific period are also reported in ORBIS. We compute *Foreign sale* as the sum of sales of all foreign subsidiaries. *Domestic sale* is the difference between firm's *Sales* and *Foreign sale*, and we use the three-year moving average of domestic sales as a proxy for domestic market opportunities.

To measure the impact of the financial crisis on foreign investment, we use two measures. We create a dummy variable *Financial Crisis* (FC), (taking value 1 after 2009 and 0 before) as a measure of the impact of the financial crisis to show a sharper effect

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<sup>7</sup> Inventories are reported separately in ORBIS but we do not include them in the calculations.

contrasting the period before and after the financial crisis. The interacted terms in the equation (2) then reflect post-crisis values. An alternative measure of the financial crisis captures the increasing (decreasing) impact of the crisis after the financial crisis. It takes value 0 before 2009 and is incrementally increasing from 2009 (specifically, it takes value 0 for years 2005, 2006, 2007 & 2008 while takes value 1 for 2009, 2 for 2010 and so on).

Foreign listing, business-group affiliation and state-ownership are additional control variables: A group affiliated firm is part of a business group. A firm is defined as state-owned if there is any proportion of government ownership. To measure the importance of finance from international markets, we include a variable for foreign listing, (*FList*). In all three cases, a dummy variable takes the value 1 if a firm is part of a business group, SOE or included in an international listing in a given year.

## 5. Empirical results

### 5.1. Descriptive statistics

Table 3 reports the number of observations, mean values, median values, and standard deviation values of all variables. There are 2475 observations for Indian firms, while Chinese firms have 1433 observations. The descriptive statistics highlight the differences in financing and investment behaviour in the two economies and are consistent with what we know about the two economies from other sources.

Chinese firms invested very heavily (almost 80% of their capital stock) compared to Indian firms (60% of their capital stock). Mean values suggest Chinese firms have much higher rates of domestic investment than do Indian firms-- consistent with the higher rate of growth of the Chinese economy.

The cash-flow ratio is higher for Chinese firms at around 46%, compared to 34% for Indian firms. Chinese firms are mainly dependent on their leverage, and there is a significant difference between Indian and Chinese firms with regard to leverage utilization. The mean leverage ratio of Indian firms is 0.63, compared to 4.20 for Chinese firms. On average, Indian and Chinese firms have foreign sale ratio of 0.59 and 0.68 respectively.

About 39% of Indian firms are part of a business group compared to 17% of Chinese firms and more than 19% of Chinese firms have some fraction of state ownership. Almost 30% of Indian firms listed abroad compared to 27% of Chinese firms

The values of standard deviation of variables of interest are close to their respective mean values. The mean and median values are also close to each other. This indicates that our variables are normally distributed. The correlation table (in Appendix 1) does not raise any concerns about multicollinearity.

### 5.2. *The financial crisis and outward investments: the baseline model*<sup>8</sup>

Equation (2) separately estimated for Indian and Chinese firms is reported in Table 4. Columns (1) and (2) refer to the baseline model results (Panel A) using the measure of FC as a dummy variable that distinguishes between two periods i.e. pre and post crisis. Columns (3) and (4) show the results when we measure *Financial Crisis* as a count variable (Panel B). Insignificant probabilities of Arellano-Bond AR(2) indicates the acceptance of the null hypothesis viz. there is no serial correlation while the Hansen tests in all four cases confirm the instruments are valid (and the equation is not over-identified).

Neither the lagged levels of foreign investment ( $\lambda_1$ ) nor the squared (lagged) foreign investment ( $\lambda_2$ ) have much influence on the current levels of foreign investment. As we expected, the coefficient for cash flow ( $\lambda_3$ ), which captures the extent of the financial constraint on foreign investment is positive and statistically significant for both countries, indicating the presence of financial constraints. For India, a 1% increase in internal cash flow is likely to finance a 4.14% increase in foreign investment<sup>9</sup>, while for China, a 1% increase in cash flow causes 2.09% increase in foreign investment. Both these results support Hypothesis 1a.

The coefficient on the FC ( $\lambda_4$ ) is not by itself a significant influence in Panel A but in Panel B there is a weak negative influence on Chinese investments. However, the coefficient of the interactive term FC  $\times$  CF ( $\lambda_5$ ) is positive and significant for foreign investment of Indian firms, consistent with Hypothesis 1b, and confirming that the financial crisis increased the credit constraints on Indian firms. However, as we hypothesised, based on the work of Liu et al (2012) and others, cash injections following the crisis in China made it easier for Chinese firms to raise resources after the financial crisis—thus the sign of coefficient ( $\lambda_5$ ) is negative and significant. We may attribute the difference in signs on the interacted CF variable to the active governmental support to Chinese firms in the post-crisis period, whereas Indian firms lacked such assistance.

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<sup>8</sup> We are very grateful to two anonymous referees for their helpful comments that shaped the writing of our empirical analysis.

<sup>9</sup> Measured as coefficient of cash flow multiplied by the ratio of mean values of cash value and investment.



[Insert Table 4 here]

Indian firms finance their foreign investment by revenue from foreign sales. The estimated coefficient ( $\lambda_8$ ) is positive and statistically significant for foreign investments of Indian firms. A 1% increase in the foreign sale to capital ratio causes 0.91% increase in Indian foreign investment. For Chinese foreign investment, the effect of *Foreign Sale* is statistically insignificant. This finding supports our Hypothesis 2a. We hypothesised (H2b) that the financial crisis weakened the foreign sale and foreign investment relationship, obtained for Indian case, due to the shrinking the foreign markets. As we expected the coefficient  $\lambda_9$  is negative and statistically significant for foreign investment of Indian firms whereas for Chinese firms  $\lambda_9$  remains statistically insignificant (accepting Hypothesis 2b).

The estimated coefficient ( $\lambda_{11}$ ) of the Leverage is positive and significant for Chinese foreign investment indicating the reliance on debt as non-market mediated means of financing.<sup>10</sup> From the estimated coefficient, we can infer that a 1% increase in leverage causes 1.29% increase in Chinese foreign investment. For Indian firms, the relationship between leverage and overseas investment is negative but statistically insignificant. From the riskiness perspective, support from the Chinese government-backed banks may have reduced the risk associated with the higher usage of leverage for Chinese overseas investment. However, Indian foreign investments are vulnerable to higher leverage risk due to the more market mediated nature of the financing. Our finding support Hypothesis 3a. This effect is further strengthened in the post-crisis period. As results show that the effect of debt continues to be positive for the Chinese case, the coefficient ( $\lambda_{12}$ ) is positive and statistically significant for foreign investment of Chinese firms (accepting Hypothesis 3b). Taken together, our results strongly confirm that it was not the financial crisis by itself but its influence on modes of financing (themselves related to motives for outward investment) that caused outward investment paths of China and India to diverge.

The results of the control variables are as expected. The coefficient of moving average of domestic sale ( $\lambda_{10}$ ) is statistically insignificant for both Indian and Chinese firms suggesting domestic market opportunities do not influence foreign investments -- confirming the implicit assumption in many studies of outward investment. The estimated coefficient of the interaction between business group and cash flow ( $\lambda_{14}$ ) is not statistically significant for

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<sup>10</sup> As noted in section 2, in well-developed capital markets more leverage will restrict investment because a higher leverage ratio for a firm will represent a higher leverage ratio and more financial constraint in terms of default risk (Arellano et al., 2012).

foreign investments of both Indian and Chinese business group firms. This result casts doubt about the existence of internal capital markets that fund transfer among business group affiliates since 2005 and is consistent with the findings of Sasidharan et al. (2015), Bhaumik et al. (2012) and George et al. (2011) who have argued that the advantages of group membership wane over time. The interaction between state-ownership and cash flow ( $\lambda_{16}$ ) is statistically insignificant for foreign investment of the Indian sample, but for Chinese firms, state-ownership does mitigate the credit constraint for foreign investment (negative and significant --  $\lambda_{16}$ ). This result is again consistent with numerous studies that point to the important role of state-driven foreign investment from China. The variable measuring the impact of foreign listing on credit constraints ( $\lambda_7$ ) has a negative and statistically significant effect on foreign investments of both Indian and Chinese firms. Our result suggests foreign listings do help to mitigate the credit constraints on foreign investments for firms from both countries as noted in earlier studies by Poncet et al., (2010), Nayyar (2008), and Huang (2003).

Columns 3 and 4 (Panel B) of Table 4 present the results of using an alternative measure of FC. Again, there is strong support for Hypothesis 1a and 1b. Indian firms show a worsening of the financial constraint on outward foreign investment post crisis, while Chinese firms see an easing of credit constraints. Consistent with Hypotheses 2a and 2b, we find that Indian firms rely on foreign sales financing before the crisis and this reliance on this source of finance weakens post crisis, but we only find partial support for Hypothesis 3a. Chinese firms do rely more on leverage post crisis (consistent with Hypothesis 3b) but there is no suggestion that leverage was important as the mode of finance pre-crisis.

### *5.3. Model extension: Heterogeneity of motives among firms in a single country*

Although in the baseline model and subsequent arguments, we have used the simplification of characterising all Indian firms as market seeking and all Chinese firms as strategic asset seeking, the reality is more complex. The same firm may have some FDI projects that are market seeking and other FDI which is strategic asset seeking. The ideal data to delineate these mixed motives is project-based data but we do not have such detailed information linked to financial information. Nor can we employ a primary source of data in the form of a survey or interviews to identify the outward FDI motive of each firm (Lu et al., 2011). Some studies use intangible assets such as intellectual property including patents & trademarks, goodwill, and brand recognition to distinguish between market-seeking and

strategic asset-seeking motives of the firm (Elia and Santangelo, 2012; Lu et al. 2011; Buckley et al., 2007) but the information on firm-level patent counts and trademarks are not readily available in ORBIS.

Studies that adopt an ‘industry-based view’ define the outward FDI motive of a firm through the industry in which firm operates (Brouthers et al. 2008; Lu et al. 2011). For instance, outward investment is identified as market seeking if the firm belongs to wholesaling, retailing, transportation, storage, real estate, and financial services. On the other hand, outward investment of firms operating in technologically advanced or natural resources related sectors, for instance, equipment manufacturing, automobile, pharmaceutical, mining, and petroleum, is identified as strategic asset-seeking. We follow this approach and classified firms’ outward FDI as driven by a market-seeking motive if the firm belongs to textile, engineering services, agriculture, construction, and miscellaneous sectors, while outward FDI from technological advanced sectors (automobile, electronics, iron & steel, chemicals, pharmaceutical, telecommunication, and software-IT sectors) and industries related to natural resources (oil & gas and mining) was classified as strategic asset-seeking. Splitting the sample in this way, we find only 41% of Indian firms were market seeking while 66% of Chinese firms were asset seeking

Since our data is at parent-level where outward FDI is the accumulated sum of outward investments through several foreign subsidiaries, there is a possibility that a parent firm undertakes more than one outward investment with different motives. We encounter this issue with 76 firms in which we found a firm has foreign subsidiaries in different industries. For instance, Reliance Industries has foreign subsidiaries in Oil & Gas sector (Gulf Africa Petroleum Corporation) and in Textile sector (Recron Malaysia Sdn. Bhd). Due to the multiple motives of the outward FDI, we are unable to classify such firms; therefore, we have to exclude 30 Indian and 46 Chinese firms from the sample.

We re-estimate equation (2) on outward investment based on these sub-samples of market seeking and strategic assets seeking firms in India and China. The results presented in Table 5 confirm all our main hypotheses. Consistent with Hypothesis 1b, both market and strategic asset seeking outward investments by Indian firms saw a worsening of the credit constraint, while strategic asset seeking investments from China saw a lifting of credit constraints. Consistent with Hypothesis 2a, Indian outward investment driven by market-seeking motives show a positive and statistically significant impact of foreign sales finance. This effect weakens after the financial crisis ( $\lambda_9$  is negative and significant—Consistent with Hypothesis 2b). Further, we do not observe the same effect for Indian investment with

strategic asset-seeking motive. Consistent with hypothesis 3a, for China the impact of leverage finance ( $\lambda_{11}$ ) is positive and significant for both types of investments and post crisis period the positive impact of leverage persists for strategic asset-seeking investments ( $\lambda_{12}$  is positive and significant—consistent with Hypothesis 3b).

Overall, the findings indicate that the financial crisis of 2009 adversely affected foreign investment by Indian firms while foreign investment by strategic asset-seeking Chinese firms survived and expanded after the financial crisis. Importantly, the financial crisis influenced these outcomes by adversely influencing some forms of financing of outward investments.

#### *5.4 Robustness tests*

We subjected our estimations to further tests in order to understand the robustness of our results<sup>11</sup>. First, we re-estimate model 3 with two-way clustering, by time and industry, following Cameron et al. (2011). The main results largely remain the same and consistent with our earlier baseline results (Table 4). Importantly, results with two-way clustering lend support for our all hypotheses.

Although we have used the system GMM estimation technique, which deals with potential endogeneity by using lagged explanatory variables as instruments, we also statistically ascertain that our results do not suffer from endogeneity bias. The results (reported in Appendix 1) confirm our model does not suffer from endogeneity.

##### *5.4.1: Sources of firm heterogeneity and its influence on the results*

*Effect of region of origin:* In view of the large literature highlighting the effect of regional differences on firm's investment (Ning et al., 2016; Aiello et al., 2012), we tried to control for the region of origin effect on investment by adding 3 regional dummies namely South\_Central, North\_West, and East regions in model 3 for both countries. Regional dummies had an insignificant impact on foreign investment of Chinese firms and test for the inclusion of the new variables rejects their inclusion. This result most likely reflects the limited nature of our data where there are very few observations for each of the dominant regions, so that pooling the data was better for estimation.

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<sup>11</sup> Please see the results of the robustness tests contained in Appendix 1

*Exclusion of state-owned firms:* As discussed in section 2.2.3, state-owned firms enjoy privileged treatment in the credit market, which offers them an additional advantage over private firms to undertake local and foreign investments. So, our results for China could be the outcome of a larger share of SOE in the sample. To check for this possibility, we exclude state-owned firms from the sample and re-estimate the models only for private (non-state-owned) firms. When we do this, the results for Hypotheses 3a and 3b vanish, in the sense that leverage and leverage after the crisis are no longer significant in explaining Chinese outward investment. Chinese firm numbers are also reduced (from 170 to 106) and it is difficult to say if this too influenced the overall results.

*Heterogeneity of industries of investment:* The industries of outward investment are different in India and China and these differences in the industrial composition of investment may be driving the results reported in Table 4. We used industry as a matching criterion, as firms operating in a similar industry face similar business and regulatory environments (Boter & Holmquist, 1996). The industry criterion in our case ensures that we match firms having a comparable amount of resources to fund investment and to obtain external credit, so we are comparing like for like. For this purpose, we select three industries with most observations from both countries. These industries are Electronics, Oil & Gas, and Chemicals. The sample distribution across industries provided in Table 1 shows that these three industries account for 64 Indian and 54 Chinese firms (21% of the Indian and 25% of the Chinese sample respectively). Firstly, we re-estimate equation 2 after pooling the two country samples and introducing a country dummy for China (China\_Dummy). The coefficient of the China\_Dummy is statistically significant indicating a strong country effect. Next, we re-estimate equation (2) for each country (following our earlier estimation routine). The findings still support Hypotheses 1a, 1b, and 2a, but not for hypotheses 2b, 3a, and 3b. Thus, industry heterogeneity probably drives some of our findings, but the much smaller number of firms also compromises the new estimations.

#### *5.4.2. Exchange rate movements before and after the financial crisis*

The financial crisis of 2008 had major implications for the foreign exchange rate (Frankel and Saravelos, 2012), which directly influence the firms' investment. To investigate the possibility that the variable indicating the crisis period in our model is also picking up some level of exchange rate movements, we re-estimated Model 3 by adding three exchange rates

namely Dom/EUR, Dom/USD, and Dom/GBP (Domestic to Foreign Currency).<sup>12</sup> For China, ER\_USD (exchange rate against the US Dollar) is positively significant for foreign investment, while we find no effect for the sample of Indian firms. The joint significance test for the inclusion of exchange rate variables is significant for explaining the foreign investment of Chinese sampled firms while insignificant for Indian sampled firms. Despite this, the support for all hypotheses remain robust even in these new results, although the coefficients of the interacted FC terms, become smaller confirming that at least some of the effects of the crisis were mediated by exchange rates.

## **6. Discussion**

### *6.1. Theoretical contributions*

Our paper contributes to theorising about the institutional advantages and disadvantages of EMNEs arising from financial market imperfections (Gaur et al., 2018; Singh & Kaur, 2014; Rui and Yip, 2008; Buckley et al., 2007) and shows that motives for internationalization condition the source of financing and thus have an impact on overall firm investment. Although countries may share an institutional deficiency, they may not be handicapped by it, in the same way. Much depends on what the firms want to do and if the adverse institutional environment actually acts as a hindrance or could be used to their advantage. In turn, this makes the relationships between CSA, CSD and FSA much more nuanced and context specific than usually emphasised.

Despite many continuing problems, Indian financial institutions have slowly reformed to largely follow market-based rules in the allocation of investment finance and they show some breadth in the availability of financial instruments. In contrast, until only a few decades ago the private financial sector virtually did not exist in China and all banking was done through branches of the state-owned People's Bank of China. Though this picture has now changed, the Chinese financial sector is still largely controlled by the state (the five largest Chinese banks are majority-owned by the central government) which lends funds through banks based on planned investment targets and moral suasion. The easier availability of leverage finance for "going global" was a real institutional advantage for Chinese firms wishing to acquire international assets, while Indian firms despite facing somewhat better financial institutions at home also had to deal with greater scrutiny of their investments,

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<sup>12</sup> These results are available on request.

which in turn was a disadvantage for firms wishing to invest overseas. After the financial crisis of 2008, neither well-functioning financial markets overseas nor the reformed domestic financial sector, wanted to bear the larger risk that foreign investments entailed which hurt Indian investments abroad.

An interesting aspect of our argument is that the dynamics of interaction between motives and financing in an upswing differed considerably from the dynamics of interaction in a downswing. In an upswing, there is optimism in investment opportunities of all kinds, and financial markets (mature and immature) largely support investments. However, in a downswing, there is pessimism about the growth of investible opportunities and finance is harder to come by. Investing in strategic assets capable of generating incomes in the longer term may be an easier case to make than investing in projects to serve markets with shrinking demand. Financial lending based on market-based rules may prioritise pulling out of risky markets. Patient finance geared to enabling investments (such as provided by the Chinese state banks) may however be more open to such investments.<sup>13</sup>

#### *6.2. Managerial and policy implications*

For managers of EMNEs, our findings suggest internationalisation should be guided by both the costs and new opportunities in the global environment. In particular, managers of EMNEs should focus not only on internal financial resources but also consider external financial support when making outward FDI decisions. Managers of EMNEs should develop both conventional and relationship-based capabilities to overcome financial constraints. Equally, they should seek to capitalise on new sources of growth and be prepared to change course (e.g. from market to asset seeking) if the circumstances are favourable to such a switch.

Our findings also offer some useful policy implications. We demonstrate how financial availability, outward investments' motives and market economic conditions relate with each other. Our results suggest the government financial support should be an integral component of the internationalization endeavours of EMNEs, in a manner similar to the subsidy enjoyed by exports. To this end, China's experience with state financed outward investment holds lessons for other countries/ regions wanting to internationalise.

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<sup>13</sup> To some extent, this echoes well-known arguments in the varieties of capitalism literature on the difference between insider and outsider capital markets, with Chinese financial sector being more like an insider dominated capital market. Insider capital markets are efficient when the objective was clearly catching up with the frontier technology.

The importance of financial institutional development for outward investment also holds other policy lessons. Although India and China have followed different models of reform, with India opting for western-style financial markets and China evolving along with more patient, insider capital models, there is no doubt that without some financial reform, outward investment would not have taken place at all. Studies have shown that integration of trade and investment can transfer institutional practices that mitigate corruption (Li et al., 2012), improve managerial practices (Ahlstrom & Bruton, 2009), and encourage legitimate institutional practices (Bruton & Ahlstrom, 2003; Ahlstrom et al., 2007), enhance micro-financing activity (Chen et al., 2017), and increase investment and entrepreneurship (Newman et al., 2017). Building resilient financial institutions help internationalisation (in both its main forms) and ultimately improve economic growth (Tomizawa et al., 2019).

### *6.3. Limitations and future research*

Our conclusions and contributions are inevitably influenced by the nature and quality of our data and we have noted these limitations in several places. We cannot control all the different sources of firm heterogeneity in our data and these may have influenced our results. Similarly, we assumed that motives condition the mode of financing chosen but it may be the case that firms select the type of investment jointly with the mode of financing they are able to access.

A major limitation of our study is the inability to address intra-country regional variations. Earlier studies on EMNES suggest that regional differences within a country are important for outward investment because of the differences in regional endowments (including access to external finance) and geographical concentration of industrial activities (Fleisher et al., 2010; Chan et al., 2010; Panda and Gupta, 2004; Poncet, 2005). Regional endowments such as market size and factor inputs are known to be important for the location of overseas investment, while geographical concentration of industry may give rise to increased competition which may push firms to seek opportunities in foreign markets. Other studies also acknowledge the importance of regional institutional differences for domestic investment (Chan et al., 2010; Peng et al., 2008). In our study, we used crude regional dummies to control the within-country regional differences, but the results were not significant due to the small numbers of firms for each of the regions. Future studies with larger datasets (that include both public and private firms) can account for variability across regions in a country should examine how outward investment is financed across subnational



regions due to political and cultural differences, policy variations, and differential economic development.

Another possible limitation is the inability to control the geographical location of outward investment as we used parent-firm level data in our analysis. The impact of the financial crisis was harsher in Europe and North America as compared to Asia and Africa (Reddy et al., 2014). We do not know if this started a process of redirection of outward investment in Chinese and Indian companies, or perhaps a process of rationalisation of investments.

Going forward, investigation of motives and modes of financing of EMNE investments with larger datasets that combine project level information with financial information using the framework we have developed in this paper will yield more robust insights, but we hope our paper has cast the first stone in that direction.

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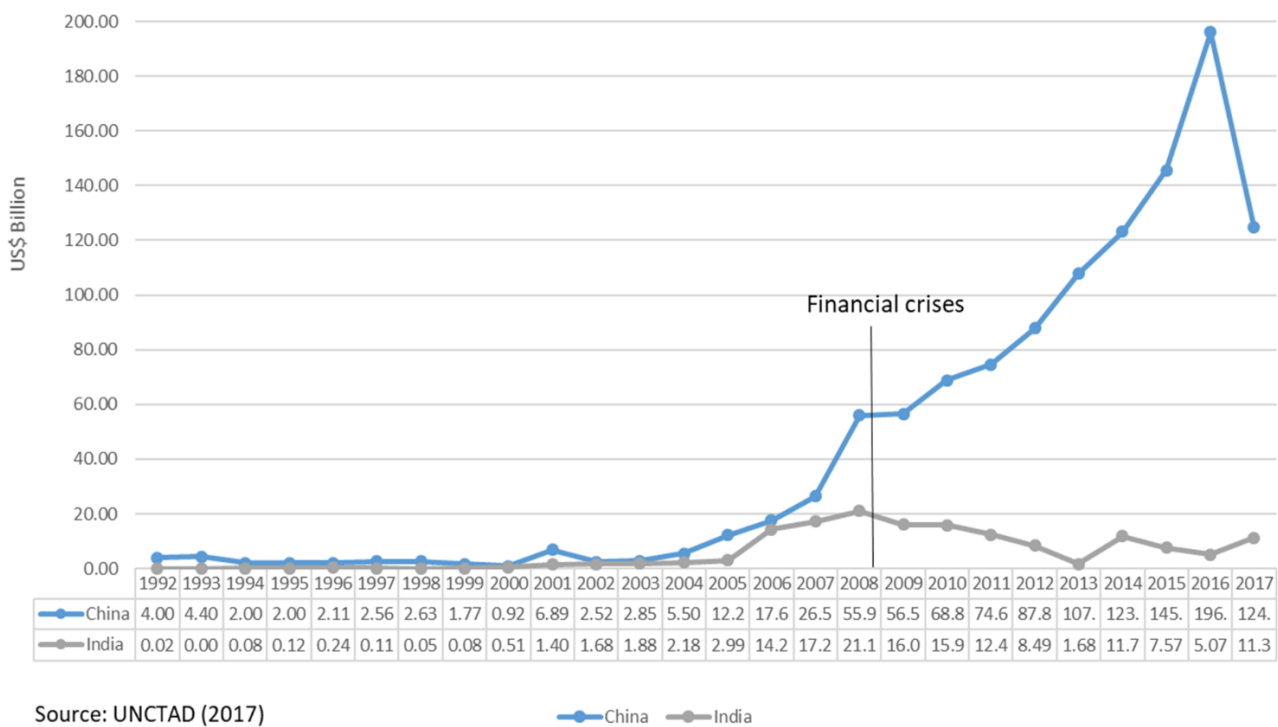
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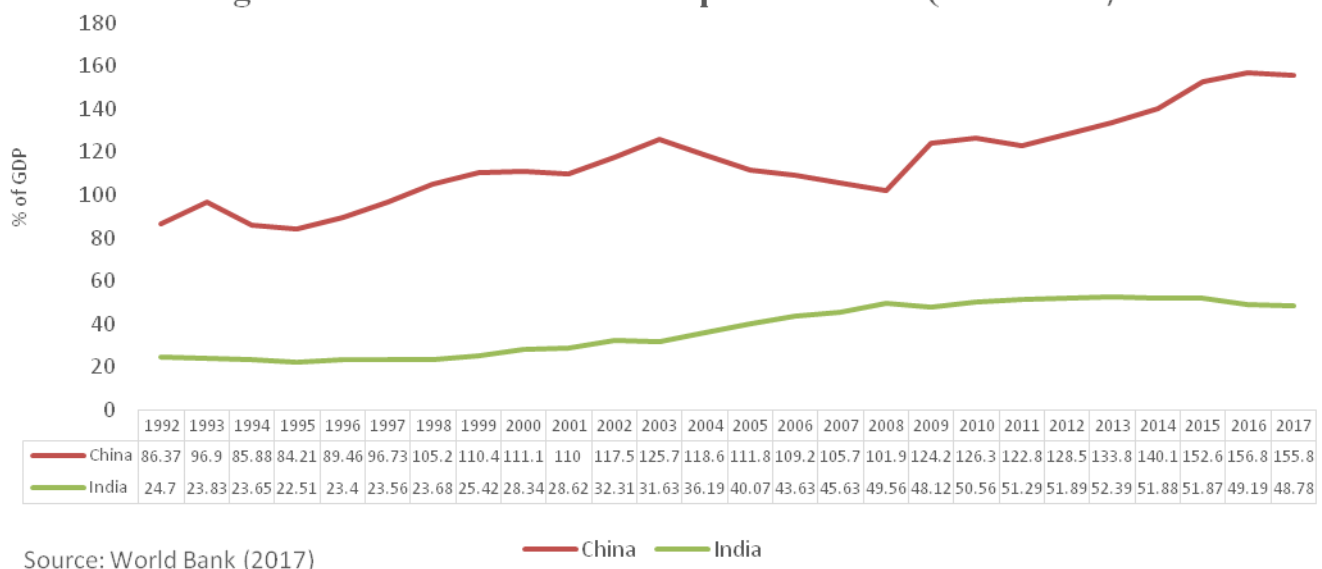
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**Figure 1: Outward FDI trends: India and China 1992-2017**



**Figure 2: Domestic credit to private sector (% of GDP)**



**Table 1: Sample distribution across sectors**

| Sectors                         | Sub-sectors                  | Number of firms |                |
|---------------------------------|------------------------------|-----------------|----------------|
|                                 |                              | Indian sample   | Chinese sample |
| Manufacturing                   | Automobile                   | 18 (6)          | 12(6)          |
|                                 | Electronics                  | 35 (12)         | 20(9)          |
|                                 | Iron and Steel               | 21 (7)          | 16(8)          |
|                                 | Chemicals                    | 38 (14)         | 28(13)         |
|                                 | Pharmaceutical               | 11 (4)          | 9(4)           |
|                                 | Telecommunication            | 6 (2)           | 4(2)           |
|                                 | Textile products             | 34 (12)         | 17(8)          |
| Service                         | Software (IT) industry       | 12 (4)          | 5(2)           |
|                                 | Engineering services         | 18 (6)          | 7(4)           |
| Oil and Gas                     | Oil and Gas                  | 26 (9)          | 33(16)         |
|                                 | Mining                       | 9 (3)           | 22(10)         |
| Agriculture & allied activities | Agriculture related products | 28 (10)         | 18(9)          |
| Construction                    | Construction                 | 12 (4)          | 9(4)           |
| Miscellaneous                   |                              | 30 (10)         | 12(5)          |
| Entire sample                   |                              | 298             | 212            |

Percentages of total sample are in parentheses.



**Table 2: Variable construction**

| <i>Variables</i>                       | <i>Acronym</i>       | <i>Definition</i>   | <i>Source</i> |
|--|----------------------|---|---------------|
| <i>Investment</i>                      | <i>I</i>             | Change in net capital stock from period $t-1$ to $t$ , plus accumulated depreciation  | ORBIS         |
| <i>Foreign investment</i>              | <i>I<sup>f</sup></i> | Change in net capital stock from period $t-1$ to $t$ , plus accumulated depreciation of foreign subsidiaries  | ORBIS         |
| <i>Domestic investment</i>             | <i>I<sup>d</sup></i> | Difference between total investment and foreign investment  |               |
| <i>Capital stock</i>                   | <i>K</i>             | Tangible assets of period $t$   | ORBIS         |
| <i>Cash flow</i>                       | <i>CF</i>            | Firm operating net income at the end of period $t$ plus the accumulated depreciation  | ORBIS         |
| <i>Financial Crisis</i>                | <i>FC</i>            | Dummy variable indicating financial crisis period. As an alternative proxy it is measured as the number of years since crisis. It takes value 0 before 2009 and incrementally increasing from 2009. |               |
| <i>Net Sale</i>                        | <i>Sale</i>          | Net sale at the end of period $t$   | ORBIS         |
| <i>Foreign Sale</i>                    | <i>For_Sale</i>      | Total sale of all foreign subsidiaries at the end of period $t$   | ORBIS         |
| <i>Domestic Sale</i>                   | <i>Dom_Sale</i>      | Difference between firm's net total sale and its foreign sale   |               |
| <i>Moving Average of Domestic Sale</i> | <i>MA_Dom_Sale</i>   | Three year moving average of domestic sale  |               |
| <i>Total Leverage</i>                  | <i>Leverage</i>      | Book value of total debt at the end of period $t$   | ORBIS         |
| <i>Foreign listing</i>                 | <i>FList</i>         | A dummy variable taking value 1 if a firm is internationally listed, 0 otherwise.   | ORBIS         |
| <i>Business group</i>                  | <i>BG</i>            | A dummy variable taking value 1 if a firm is affiliated to business group, 0 otherwise  | ORBIS         |
| <i>State-ownership</i>                 | <i>SOE</i>           | A dummy variable taking value 1 if there is presence of government ownership in any fraction, 0 otherwise   | ORBIS         |

**Table 3: Descriptive values of variables across countries**

| VARIABLES              | India |         |           |         | China |         |           |         |
|------------------------|-------|---------|-----------|---------|-------|---------|-----------|---------|
|                        | Obs.  | Mean    | Std. Dev. | Median  | Obs.  | Mean    | Std. Dev. | Median  |
| <i>I/K</i>             | 2475  | 0.60*** | 0.87      | 0.43*** | 1433  | 0.80*** | 0.46      | 0.73*** |
| <i>I<sup>d</sup>/K</i> | 2475  | 0.39*** | 0.28      | 0.36*** | 1433  | 0.67*** | 0.34      | 0.62*** |
| <i>I<sup>f</sup>/K</i> | 2475  | 0.20*** | 0.82      | 0.01*** | 1433  | 0.13*** | 0.33      | 0.00*** |
| <i>CF/K</i>            | 2475  | 0.34*** | 0.27      | 0.28*** | 1433  | 0.46*** | 0.24      | 0.46*** |
| <i>FC</i>              | 2475  | 1.35*** | 1.97      | 0.60*** | 1433  | 1.85*** | 2.29      | 0.96*** |
| <i>FList</i>           | 2475  | 0.30*** | 0.24      | 0.24*** | 1433  | 0.27*** | 0.29      | 0.16*** |
| <i>Sale/K</i>          | 2475  | 1.88*** | 1.97      | 1.37**  | 1433  | 2.16*** | 2.30      | 1.30**  |
| <i>For_Sale/K</i>      | 2475  | 0.59*** | 0.62      | 0.43**  | 1433  | 0.68*** | 0.72      | 0.41**  |
| <i>MA_Dom_Sale</i>     | 2475  | 1.22    | 1.16      | 0.18*** | 1433  | 1.34    | 1.41      | 0.00*** |
| <i>Leverage /K</i>     | 2475  | 0.63*** | 1.85      | 0.00*** | 1433  | 4.20*** | 5.68      | 2.20*** |
| <i>BG</i>              | 2475  | 0.39*** | 1.04      | 0.12*** | 1433  | 0.17*** | 0.27      | 0.00*** |
| <i>SOE</i>             | 2475  | 0.01*** | 0.07      | 0.00*** | 1433  | 0.19*** | 0.29      | 0.00*** |

\*\*\*, \*\*, and \* is significant level at 1%,5%, and 10%. It is indicating that difference in means and medians across countries are significantly different from 0 across countries.

**Table 4: System GMM regression estimates for the financing of foreign investment**

| VARIABLES                             | Main Baseline<br>Result<br>(Panel A) |                   | Alternative Measure of the<br>Crisis as a count variable<br>(Panel B) |                   |
|---------------------------------------|--------------------------------------|-------------------|---|-------------------|
|                                       | India                                | China             | India   | China             |
|                                       | 1                                    | 2                 | 3   | 4                 |
| $(I^f/K)_{it-1}$                      | -0.16<br>(0.20)                      | 1.49<br>(1.67)    | -0.29<br>(0.27)   | 0.94<br>(1.32)    |
| $(I^f/K)^2_{it-1}$                    | 0.04<br>(0.06)                       | -1.07<br>(1.55)   | 0.10<br>(0.11)  | -0.83<br>(1.22)   |
| $(CF/K)_{it-1}$                       | 2.44*<br>(1.38)                      | 0.59**<br>(0.28)  | 1.43***<br>(0.37)   | 0.66**<br>(0.27)  |
| $FC_{it}$                             | 0.01<br>(0.14)                       | -0.01<br>(0.06)   | -0.01<br>(0.02)   | -0.02*<br>(0.01)  |
| $(CF/K)_{it-1} \times FC_{it}$        | 2.60*<br>(1.24)                      | -0.32**<br>(0.14) | 0.07*<br>(0.04)   | -0.03**<br>(0.01) |
| $FList_{it}$                          | -0.37<br>(0.31)                      | -0.12<br>(0.25)   | -0.10<br>(0.15)   | -0.14<br>(0.20)   |
| $(CF/K)_{it-1} \times FList_{it}$     | -3.35*<br>(1.96)                     | -0.40**<br>(0.18) | -1.12**<br>(0.54)   | -0.39*<br>(0.22)  |
| $(For\_Sale/K)_{it-1}$                | 0.31*<br>(0.16)                      | 0.18<br>(0.11)    | 0.04*<br>(0.02)   | 0.23<br>(0.22)    |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -1.01*<br>(0.69)                     | 0.15<br>(0.12)    | -0.12*<br>(0.07)  | 0.01<br>(0.01)    |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.06<br>(0.24)                       | 0.04<br>(0.03)    | 0.04<br>(0.03)  | 0.02<br>(0.04)    |
| $(Leverage/K)_{it-1}$                 | 0.65<br>(0.91)                       | 0.04**<br>(0.02)  | 0.16<br>(0.15)  | 0.02*<br>(0.01)   |
| $(Leverage/K)_{it-1} \times FC_{it}$  | -0.49<br>(0.84)                      | 0.02*<br>(0.01)   | -0.02<br>(0.02)   | 0.03**<br>(0.02)  |
| $BG_{it}$                             | 0.08<br>(0.36)                       | 0.20<br>(0.21)    | 0.01<br>(0.10)  | 0.04<br>(0.33)    |
| $(CF/K)_{it-1} \times BG_{it}$        | -0.75<br>(0.56)                      | -0.27<br>(0.22)   | -0.10<br>(0.20)   | -0.46<br>(0.29)   |
| $SOE_{it}$                            | 0.51<br>(1.53)                       | -0.24<br>(0.30)   | 0.31<br>(1.72)  | -0.21<br>(0.22)   |
| $(CF/K)_{it-1} \times SOE_{it}$       | -0.68<br>(4.28)                      | -0.41**<br>(0.19) | -2.01<br>(4.06)   | -0.40*<br>(0.19)  |
| <b>Observations</b>                   | 790                                  | 534               | 790   | 534               |
| <b>Number of id</b>                   | 264                                  | 170               | 264   | 170               |
| <b>Arellano-Bond- AR(2) Prob</b>      | 0.15                                 | 0.92              | 0.43  | 0.65              |
| <b>Hansen test Probabilities</b>      | 0.98                                 | 0.65              | 0.92  | 0.95              |

This table reports the system GMM regression results.  $I^f/K$  is foreign investment in year  $t$ ,  $CF/K$  is cash flow,  $FC$  is a dummy variable indicating Financial Crisis period.  $FList$  is a dummy variable that takes the value 1 if the firm is listed internationally.  $Leverage/K$  is total leverage,  $For\_Sale/K$  is foreign sales,  $MA\_Dom\_Sale/K$  is moving average of domestic sales,  $BG$  denotes business group, and  $SOE$  denotes state-ownership. Insignificant probabilities of AR (2) and Hansen tests indicate that there exists no serial correlation and used instruments are valid. Robust Standard errors are presented in parentheses. \*\*\*, \*\* and \* are significance at 1%, 5% and 10%, respectively.

**Table 5: Financing of investment based on motives of FDI**

| VARIABLES                             | India             |                         | China             |                         |
|---------------------------------------|-------------------|-------------------------|-------------------|-------------------------|
|                                       | Market Seeking    | Strategic Asset Seeking | Market Seeking    | Strategic Asset Seeking |
| $(I^f/K)_{it-1}$                      | -0.62<br>(0.79)   | -0.36<br>(0.33)         | -0.50<br>(0.43)   | 0.87<br>(0.72)          |
| $(I^f/K)^2_{it-1}$                    | 0.08<br>(0.13)    | 0.01<br>(0.03)          | 0.46<br>(0.64)    | -0.67<br>(0.64)         |
| $(CF/K)_{it-1}$                       | 1.78**<br>(0.80)  | 0.88*<br>(0.48)         | 0.85***<br>(0.28) | 0.56*<br>(0.31)         |
| $FC_{it}$                             | 0.39<br>(0.25)    | 0.19<br>(0.12)          | -0.01<br>(0.04)   | 0.01<br>(0.03)          |
| $(CF/K)_{it-1} \times FC_{it}$        | 1.35*<br>(0.75)   | 0.74*<br>(0.43)         | -0.56<br>(0.57)   | -0.29*<br>(0.15)        |
| $FList_{it}$                          | 0.02<br>(0.14)    | -0.39<br>(0.37)         | 1.35<br>(1.01)    | 0.04<br>(0.06)          |
| $(CF/K)_{it-1} \times FList_{it}$     | -0.59**<br>(0.24) | -0.93*<br>(0.53)        | -0.39*<br>(0.31)  | -0.44**<br>(0.19)       |
| $(For\_Sale/K)_{it-1}$                | 0.14*<br>(0.07)   | 0.02<br>(0.19)          | -0.64<br>(0.62)   | -0.07<br>(0.22)         |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -0.04*<br>(0.02)  | -0.21<br>(0.21)         | 0.45<br>(0.33)    | 0.07<br>(0.23)          |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.11<br>(0.13)    | 0.13<br>(0.10)          | 0.03<br>(0.02)    | 0.06<br>(0.08)          |
| $(Leverage/K)_{it-1}$                 | 0.04<br>(0.04)    | 0.09<br>(0.10)          | 0.07*<br>(0.04)   | 0.02*<br>(0.01)         |
| $(Leverage/K)_{it-1} \times FC_{it}$  | 0.06<br>(0.08)    | 0.09<br>(0.10)          | 0.07<br>(0.09)    | 0.03*<br>(0.02)         |
| $BG_{it}$                             | 0.12<br>(0.20)    | 0.11<br>(0.17)          | -0.09<br>(0.18)   | -0.05<br>(0.08)         |
| $(CF/K)_{it-1} \times BG_{it}$        | -0.01<br>(0.08)   | -0.01<br>(0.09)         | -0.26*<br>(0.15)  | -0.21<br>(0.18)         |
| $SOE_{it}$                            | -0.18<br>(0.66)   | -1.08<br>(1.76)         | -0.08<br>(0.14)   | -0.02<br>(0.11)         |
| $(CF/K)_{it-1} \times SOE_{it}$       | 1.12<br>(1.12)    | 1.95<br>(1.57)          | 0.14<br>(0.23)    | -0.03<br>(0.17)         |
| <b>Observations</b>                   | 299               | 491                     | 181               | 353                     |
| <b>Number of id</b>                   | 109               | 155                     | 58                | 112                     |
| <b>AR (2) Test</b>                    | 0.68              | 0.94                    | 0.58              | 0.43                    |
| <b>Hansen Test</b>                    | 0.99              | 0.99                    | 0.96              | 0.99                    |

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Appendix 1

**Table A1: Correlation matrix**

| <b>Panel A: Indian firms</b>  |            |                        |             |           |                 |                 |                 |           |            |              |
|-------------------------------|------------|------------------------|-------------|-----------|-----------------|-----------------|-----------------|-----------|------------|--------------|
|                               | <i>I/K</i> | <i>I<sup>d</sup>/K</i> | <i>CF/K</i> | <i>FC</i> | <i>For_Sale</i> | <i>Dom_Sale</i> | <i>Leverage</i> | <i>BG</i> | <i>SOE</i> | <i>FList</i> |
| <i>I/K</i>                    | 1          |                        |             |           |                 |                 |                 |           |            |              |
| <i>I<sup>d</sup>/K</i>        | 0.00       | 1                      |             |           |                 |                 |                 |           |            |              |
| <i>CF/K</i>                   | 0.05       | 0.11                   | 1           |           |                 |                 |                 |           |            |              |
| <i>FC</i>                     | -0.00      | -0.01                  | 0.01        | 1         |                 |                 |                 |           |            |              |
| <i>For_Sale</i>               | -0.01      | 0.00                   | 0.17        | -0.04     | 1               |                 |                 |           |            |              |
| <i>Dom_Sale</i>               | -0.01      | 0.00                   | 0.17        | -0.04     | 0.57            | 1               |                 |           |            |              |
| <i>Leverage</i>               | 0.11       | 0.09                   | 0.19        | 0.03      | -0.06           | -0.06           | 1               |           |            |              |
| <i>BG</i>                     | 0.01       | 0.02                   | 0.00        | 0.02      | 0.11            | 0.11            | 0.00            | 1         |            |              |
| <i>SOE</i>                    | -0.02      | 0.02                   | 0.01        | 0.01      | 0.05            | 0.05            | -0.04           | 0.09      | 1          |              |
| <i>FList</i>                  | 0.05       | 0.08                   | 0.13        | -0.02     | -0.07           | -0.07           | 0.10            | -0.00     | 0.04       | 1            |
| <b>Panel B: Chinese firms</b> |            |                        |             |           |                 |                 |                 |           |            |              |
|                               | <i>I/K</i> | <i>I<sup>d</sup>/K</i> | <i>CF/K</i> | <i>FC</i> | <i>For_Sale</i> | <i>Dom_Sale</i> | <i>Leverage</i> | <i>BG</i> | <i>SOE</i> | <i>FList</i> |
| <i>I/K</i>                    | 1          |                        |             |           |                 |                 |                 |           |            |              |
| <i>I<sup>d</sup>/K</i>        | 0.03       | 1                      |             |           |                 |                 |                 |           |            |              |
| <i>CF/K</i>                   | 0.06       | 0.19                   | 1           |           |                 |                 |                 |           |            |              |
| <i>FC</i>                     | -0.02      | -0.09                  | 0.01        | 1         |                 |                 |                 |           |            |              |
| <i>For_Sale</i>               | 0.05       | 0.00                   | 0.15        | -0.10     | 1               |                 |                 |           |            |              |
| <i>Dom_Sale</i>               | 0.05       | 0.00                   | 0.14        | -0.10     | 0.63            | 1               |                 |           |            |              |
| <i>Leverage</i>               | 0.19       | 0.02                   | -0.07       | -0.9      | 0.26            | 0.26            | 1               |           |            |              |
| <i>BG</i>                     | -0.02      | -0.00                  | -0.03       | 0.08      | -0.13           | -0.13           | -0.15           | 1         |            |              |
| <i>SOE</i>                    | 0.11       | 0.03                   | 0.18        | -0.09     | 0.15            | 0.15            | 0.14            | -0.48     | 1          |              |
| <i>FList</i>                  | -0.02      | 0.04                   | 0.14        | 0.05      | 0.05            | 0.04            | 0.04            | -0.10     | 0.17       | 1            |

**Table A2: Estimations with Two-Way Clustering**

| VARIABLES                             | (1)<br>India       | (2)<br>China       |
|---------------------------------------|--------------------|--------------------|
| $(I^f/K)_{it-1}$                      | -0.22<br>(0.36)    | 1.20<br>(1.38)     |
| $(I^f/K)^2_{it-1}$                    | 0.05<br>(0.03)     | -0.93<br>(1.25)    |
| $(CF/K)_{it-1}$                       | 0.80**<br>(0.28)   | 0.30***<br>(0.02)  |
| $FC_{it}$                             | -0.05<br>(0.03)    | -0.01<br>(0.01)    |
| $(CF/K)_{it-1} \times FC_{it}$        | 0.51*<br>(0.27)    | -0.01***<br>(0.00) |
| $FList_{it}$                          | -0.26<br>(0.20)    | -0.01<br>(0.13)    |
| $(CF/K)_{it-1} \times FList_{it}$     | -1.90***<br>(0.60) | -0.43*<br>(0.20)   |
| $(For\_Sale/K)_{it-1}$                | 0.68*<br>(0.37)    | 0.16<br>(0.09)     |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -0.18***<br>(0.06) | 0.01<br>(0.01)     |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.20<br>(0.16)     | 0.02<br>(0.02)     |
| $(Leverage/K)_{it-1}$                 | -0.02<br>(0.12)    | 0.02*<br>(0.01)    |
| $(Leverage/K)_{it-1} \times FC_{it}$  | -0.01<br>(0.01)    | 0.03***<br>(0.01)  |
| $BG_{it}$                             | 0.28<br>(0.33)     | 0.24<br>(0.20)     |
| $(CF/K)_{it-1} \times BG_{it}$        | -0.44<br>(1.12)    | -0.11<br>(0.32)    |
| $SOE_{it}$                            | 1.46<br>(1.21)     | -0.31<br>(0.17)    |
| $(CF/K)_{it-1} \times SOE_{it}$       | 0.91<br>(1.29)     | -0.08*<br>(0.04)   |
| <b>Observations</b>                   | 790                | 534                |
| <b>Number of id</b>                   | 264                | 170                |
| <b>Arellano-Bond- AR(2) Prob</b>      | 0.39               | 0.88               |
| <b>Hansen test Probabilities</b>      | 0.98               | 0.99               |

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A3: Endogeneity test**

|  | (1)<br>India | (2)<br>China |
|--|--------------|--------------|
| -endog- option:                            |              |              |
| Endogeneity test of endogenous regressors: | 0.95         | 0.66         |
| Chi-sq(1) P-val =                          | 0.32         | 0.41         |

**Table A4: Controlling for Regional Effects**

| VARIABLES                             | (1)<br>India       | (2)<br>China       |
|---------------------------------------|--------------------|--------------------|
| $(I^f/K)_{it-1}$                      | -0.05<br>(0.12)    | 1.17<br>(1.47)     |
| $(I^f/K)^2_{it-1}$                    | -0.01<br>(0.02)    | -0.97<br>(1.32)    |
| $(CF/K)_{it-1}$                       | 1.01**<br>(0.41)   | 0.67**<br>(0.28)   |
| $FC_{it}$                             | -0.01<br>(0.02)    | -0.01<br>(0.02)    |
| $(CF/K)_{it-1} \times FC_{it}$        | 0.18*<br>(0.10)    | -0.02**<br>(0.01)  |
| $FList_{it}$                          | -0.29<br>(0.34)    | 0.05<br>(0.14)     |
| $(CF/K)_{it-1} \times FList_{it}$     | -1.36***<br>(0.50) | -0.55***<br>(0.21) |
| $(For\_Sale/K)_{it-1}$                | 0.22*<br>(0.11)    | 0.26<br>(0.20)     |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -0.08*<br>(0.04)   | -0.01<br>(0.03)    |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.05<br>(0.07)     | 0.06<br>(0.07)     |
| $(Leverage/K)_{it-1}$                 | -0.31<br>(0.28)    | 0.04*<br>(0.02)    |
| $(Leverage/K)_{it-1} \times FC_{it}$  | -0.03<br>(0.05)    | 0.01**<br>(0.00)   |
| $BG_{it}$                             | 0.31<br>(0.29)     | -0.21<br>(0.21)    |
| $(CF/K)_{it-1} \times BG_{it}$        | -0.01<br>(0.32)    | -0.28<br>(0.27)    |
| $SOE_{it}$                            | -0.90<br>(1.85)    | -0.01<br>(0.14)    |
| $(CF/K)_{it-1} \times SOE_{it}$       | -1.14<br>(3.18)    | -0.33**<br>(0.13)  |
| South_Central                         | 0<br>(0)           | -0.08<br>(0.26)    |
| North_West                            | 0<br>(0)           | 0.15<br>(0.16)     |
| Observations                          | 790                | 534                |
| Number of id                          | 264                | 170                |
| Arellano-Bond- AR(2) Prob             | 0.54               | 0.49               |
| Hansen test Probabilities             | 0.99               | 0.65               |

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Joint Significance Test for regional dummy variables - 0.76

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Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A5: Exclusion of State-Owned Firms**

| VARIABLES                             | (1)<br>India      | (2)<br>China      |
|---------------------------------------|-------------------|-------------------|
| $(I^f/K)_{it-1}$                      | -0.69<br>(1.29)   | -0.04<br>(0.31)   |
| $(I^f/K)^2_{it-1}$                    | 0.13<br>(1.06)    | -0.09<br>(0.23)   |
| $(CF/K)_{it-1}$                       | 0.39*<br>(0.21)   | 0.58**<br>(0.25)  |
| $FC_{it}$                             | -0.01<br>(0.03)   | -0.02<br>(0.01)   |
| $(CF/K)_{it-1} \times FC_{it}$        | 0.24***<br>(0.09) | -0.02*<br>(0.01)  |
| $FList_{it}$                          | 0.09<br>(0.17)    | -0.04<br>(0.25)   |
| $(CF/K)_{it-1} \times FList_{it}$     | -1.01**<br>(0.49) | -0.68**<br>(0.27) |
| $(For\_Sale/K)_{it-1}$                | 0.19*<br>(0.10)   | 0.07<br>(0.20)    |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -0.09*<br>(0.04)  | 0.01<br>(0.01)    |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.03<br>(0.08)    | 0.09<br>(0.14)    |
| $(Leverage/K)_{it-1}$                 | -0.22<br>(0.18)   | -0.01<br>(0.01)   |
| $(Leverage/K)_{it-1} \times FC_{it}$  | -0.03<br>(0.03)   | 0.02<br>(0.01)    |
| $BG_{it}$                             | 0.03<br>(0.14)    | -0.14<br>(0.16)   |
| $(CF/K)_{it-1} \times BG_{it}$        | 0.16<br>(0.22)    | -0.31<br>(0.47)   |
| Observations                          | 754               | 308               |
| Number of id                          | 256               | 106               |
| Arellano-Bond- AR(2) Prob             | 0.83              | 0.29              |
| Hansen test Probabilities             | 0.99              | 0.99              |

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A6: Pooled matched sample from specific industries and country effects**

| VARIABLES        | Foreign Investment |
|------------------|--------------------|
| $(I^f/K)_{it-1}$ | 0.22               |



|                                       |         |
|---------------------------------------|---------|
|                                       | (0.57)  |
| $(I^f/K)^2_{it-1}$                    | -0.13   |
|                                       | (0.52)  |
| $(CF/K)_{it-1}$                       | 0.73*** |
|                                       | (0.20)  |
| $FC_{it}$                             | -0.02   |
|                                       | (0.02)  |
| $(CF/K)_{it-1} \times FC_{it}$        | -0.01*  |
|                                       | (0.00)  |
| $FList_{it}$                          | 0.09    |
|                                       | (0.06)  |
| $(CF/K)_{it-1} \times FList_{it}$     | -0.42** |
|                                       | (0.19)  |
| $(For\_Sale/K)_{it-1}$                | 0.13    |
|                                       | (0.27)  |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -0.01   |
|                                       | (0.03)  |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.01    |
|                                       | (0.08)  |
| $(Leverage/K)_{it-1}$                 | 0.02    |
|                                       | (0.03)  |
| $(Leverage/K)_{it-1} \times FC_{it}$  | 0.01    |
|                                       | (0.01)  |
| $BG_{it}$                             | 0.02    |
|                                       | (0.04)  |
| $(CF/K)_{it-1} \times BG_{it}$        | -0.04   |
|                                       | (0.06)  |
| $SOE_{it}$                            | 0.03    |
|                                       | (0.06)  |
| $(CF/K)_{it-1} \times SOE_{it}$       | -0.33*  |
|                                       | (0.17)  |
| $China\_Dummy$                        | -0.09** |
|                                       | (0.03)  |
| <b>Observations</b>                   | 551     |
| <b>Number of id</b>                   | 118     |
| <b>Arellano-Bond- AR(2) Prob</b>      | 0.39    |
| <b>Hansen test Probabilities</b>      | 0.99    |

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A7: Matched sample from specific industries**

| VARIABLES        | (1)<br>India | (2)<br>China |
|------------------|--------------|--------------|
| $(I^f/K)_{it-1}$ | -0.08        | 1.06         |

|                                       |        |        |
|---------------------------------------|--------|--------|
|                                       | (0.53) | (0.75) |
| $(I^f/K)^2_{it-1}$                    | 0.24   | -0.82  |
|                                       | (0.24) | (1.49) |
| $(CF/K)_{it-1}$                       | 1.11*  | 0.62** |
|                                       | (0.64) | (0.27) |
| $FC_{it}$                             | 0.04   | -0.02  |
|                                       | (0.06) | (0.02) |
| $(CF/K)_{it-1} \times FC_{it}$        | 0.09** | -0.02* |
|                                       | (0.03) | (0.01) |
| $FList_{it}$                          | 0.41   | -0.03  |
|                                       | (0.40) | (0.11) |
| $(CF/K)_{it-1} \times FList_{it}$     | -0.96* | -0.40* |
|                                       | (0.55) | (0.22) |
| $(For\_Sale/K)_{it-1}$                | 0.26*  | 0.16   |
|                                       | (0.15) | (0.18) |
| $(For\_Sale/K)_{it-1} \times FC_{it}$ | -0.03  | 0.02   |
|                                       | (0.03) | (0.03) |
| $(MA\_Dom\_Sale/K)_{it-1}$            | 0.01   | 0.01   |
|                                       | (0.09) | (0.04) |
| $(Leverage/K)_{it-1}$                 | -0.23  | 0.01   |
|                                       | (0.46) | (0.02) |
| $(Leverage/K)_{it-1} \times FC_{it}$  | -0.04  | 0.02   |
|                                       | (0.07) | (0.01) |
| $BG_{it}$                             | -0.19  | -0.16  |
|                                       | (0.12) | (0.16) |
| $(CF/K)_{it-1} \times BG_{it}$        | -0.04  | -0.55  |
|                                       | (0.07) | (0.40) |
| $SOE_{it}$                            | 0      | -0.22  |
|                                       | (0)    | (0.32) |
| $(CF/K)_{it-1} \times SOE_{it}$       | -1.30  | -0.42* |
|                                       | (0.92) | (0.23) |
| <b>Observations</b>                   | 201    | 167    |
| <b>Number of id</b>                   | 64     | 54     |
| <b>Arellano-Bond- AR(2) Prob</b>      | 0.38   | 0.30   |
| <b>Hansen test Probabilities</b>      | 0.99   | 0.98   |

Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**Table A8: Addition of Exchange Rate Variables**

| <b>VARIABLES</b>   | <b>(1)<br/>India</b> | <b>(2)<br/>China</b> |
|--------------------|----------------------|----------------------|
| $(I^f/K)_{it-1}$   | -0.29                | 1.50                 |
|                    | (0.23)               | (1.62)               |
| $(I^f/K)^2_{it-1}$ | 0.10                 | -1.03                |

|   |         |         |
|---|---------|---------|
|   | (0.11)  | (1.48)  |
| <b>(CF/K)<sub>it-1</sub></b>                                | 1.91*** | 0.44*   |
|   | (0.58)  | (0.25)  |
| <b>FC<sub>it</sub></b>                                      | -0.15   | 0.01    |
|   | (0.09)  | (0.02)  |
| <b>(CF/K)<sub>it-1</sub> × FC<sub>it</sub></b>              | 0.14*   | -0.04** |
|   | (0.08)  | (0.02)  |
| <b>FList<sub>it</sub></b>                                   | 0.51    | 0.12    |
|   | (0.44)  | (0.23)  |
| <b>(CF/K)<sub>it-1</sub> × FList<sub>it</sub></b>           | -2.00** | -0.29*  |
|   | (0.91)  | (0.17)  |
| <b>(For_Sale/K)<sub>it-1</sub></b>                          | 0.31*   | 0.39    |
|   | (0.18)  | (0.41)  |
| <b>(For_Sale/K)<sub>it-1</sub> × FC<sub>it</sub></b>        | -0.10*  | -0.04   |
|   | (0.05)  | (0.04)  |
| <b>(MA_Dom_Sale/K)<sub>it-1</sub></b>                       | 0.11    | -0.08   |
|   | (0.15)  | (0.08)  |
| <b>(Leverage/K)<sub>it-1</sub></b>                          | -0.19   | 0.02*   |
|   | (0.13)  | (0.01)  |
| <b>(Leverage/K)<sub>it-1</sub> × FC<sub>it</sub></b>        | -0.04   | 0.01*   |
|   | (0.05)  | (0.00)  |
| <b>BG<sub>it</sub></b>                                      | 0.13    | -0.07   |
|   | (0.41)  | (0.18)  |
| <b>(CF/K)<sub>it-1</sub> × BG<sub>it</sub></b>              | -0.03   | -0.22   |
|   | (0.41)  | (0.24)  |
| <b>SOE<sub>it</sub></b>                                     | -1.25   | -0.28   |
|   | (2.36)  | (0.27)  |
| <b>(CF/K)<sub>it-1</sub> × SOE<sub>it</sub></b>             | 1.97    | -0.30** |
|   | (3.62)  | (0.13)  |
| <b>ER_EUR</b>   | -0.02   | 0.01    |
|   | (0.02)  | (0.04)  |
| <b>ER_USD</b>   | -0.01   | 0.04*   |
|   | (0.01)  | (0.02)  |
| <b>ER_GBP</b>   | 0.02    | 0.01    |
|   | (0.02)  | (0.02)  |
| <b>Observations</b>   | 790     | 534     |
| <b>Number of id</b>   | 264     | 170     |
| <b>Arellano-Bond- AR(2) Prob</b>                            | 0.11    | 0.83    |
| <b>Hansen test Probabilities</b>                            | 0.98    | 0.53    |
| <b>Joint Significance Test for regional dummy variables</b> | 0.57    | 0.03    |

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Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1