

Has outward foreign direct investment contributed to the development of the Chinese economy?

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Research and literature on foreign direct investment (FDI) and economic development have to date focused almost entirely on development in the host economy, sidelining the question of any contribution to development in a multinational enterprise's country of origin. To address this shortcoming in research on FDI, this study investigates whether Chinese outward FDI can be seen as having made a contribution to the development of the mainland Chinese economy over the past three decades. It finds that the activity of Chinese enterprises in pursuing assets and advantages abroad through outward FDI yields four categories of returns: financial, capability, capacity and macroeconomic. These returns have addressed some of the specific challenges that China has faced in the process of its economic development, although the extent and importance of the development contribution remains uncertain. Outward FDI can play both a complementary and a supplementary role to development benefits realized from opening up to international trade and inward FDI, and from emigration.

1. Introduction

Research and literature on foreign direct investment (FDI) and economic development has to date focused almost entirely on development in the host economy where investment is made (Crespo and Fontoura, 2007; Saggi, 2002; JBICI, 2002; Fan, 2003; Görg and Strobl, 2001; Lim, 2001; UNCTAD, 2013; Javorcik, 2004), sidelining the question of any contribution to home country development. In an era predating the appearance of the emerging multinational enterprises (MNEs) as important global players, this focus on the host economy – and relative negligence of home-economy development – was reasonable: FDI was largely an activity reserved for MNEs from countries that were already developed, and theories about FDI – from Hymer's (1960) market power hypothesis and Vernon's (1966) focus

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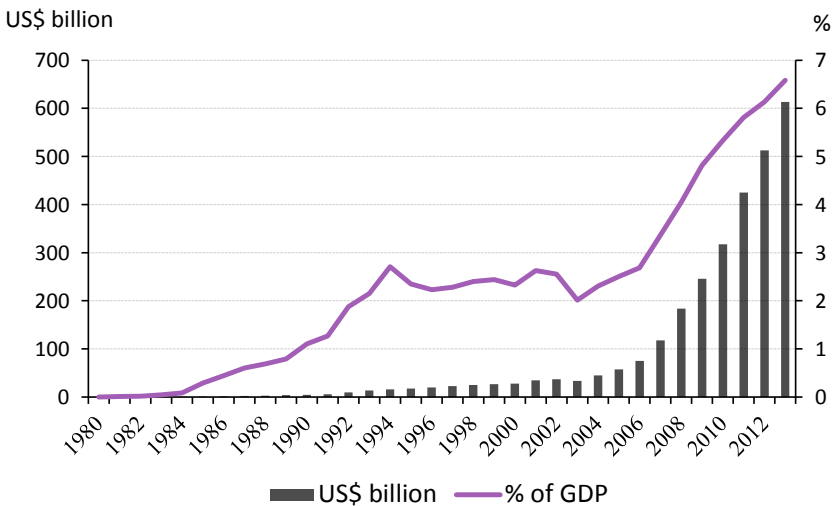
on product innovation to Dunning's (2001) ownership advantages – emphasized the technological, innovative and managerial superiority of the investing MNE as an essential explanation for the occurrence of FDI. The investment development path similarly assumed FDI to occur as a consequence of economic development (Dunning, 1981). These theories were formulated at a time when most FDI flows were unidirectional, from more to equal or less advanced economies. Development in poorer economies was also associated with the inflow of productive capital, technologies and economic activity from advanced-economy MNEs, rather than with any form of capital outflow.

The ascendance to global significance of the MNEs from emerging economies after the turn of the century ushered in a new era in the study of FDI. Since then, researchers have begun to revisit some of these assumptions, often suggesting the necessity of expanding existing theories and common understandings about the nature of FDI (Gammeltoft, Barnard and Madhok, 2010). Yet somewhat missing from these discussions is the possibility that, because the MNE is the primary beneficiary of its investments, its overseas operations and investments could support the development of its country of origin – especially if the enterprise comes from a developing or emerging economy. Hardly any research has examined in detail the development contribution of *outward* foreign direct investment (OFDI) in emerging economies or developing home countries. More generally, a comparatively small number of studies have examined the impact of FDI on home countries, with many of them focusing primarily on the potential “hollowing out” of the advanced home economies and the resulting necessity of economic restructuring, an issue that would be of lesser significance to developing home countries.

In view of these shortcomings in research on FDI, the purpose of this study is to explore the nature and importance of the gains and potential benefits for a developing home country from OFDI. As this study seeks to inductively develop a framework that focuses on the development contribution of OFDI in less advanced economies, it is analytically prudent to explore this issue by making use of the case study method. For the purpose of such an examination, I chose mainland Chinese OFDI as a particularly appropriate case for a number of reasons. First, China has so far been the source of the highest amount of OFDI among developing economies. Second, Chinese firms started to

go abroad as early as the 1980s, when China was clearly undergoing processes of rapid economic development. Figure 1 illustrates that already during the 1990s, China's OFDI stock as a percentage of gross domestic product (GDP) was between 1 and 3 percent, substantial enough to justify consideration of its potential contribution to China's economic development. After 2003, a stronger outward push became visible with the accumulated stock of Chinese OFDI rising to an impressive US\$614 billion in 2013. Third, although China is a country with strong economic fundamentals, it faces severe economic and developmental challenges related to technological deficiencies, resources shortages, food security, population pressures, environmental degradation, pollution and more. Despite rapid economic growth of more than 8 per cent in most years since economic reforms were launched in 1978, China's GDP per capita is still relatively low. For these reasons, China is a particularly useful case for exploring mechanisms that link OFDI to the development of the home economy.

Figure 1 . China's OFDI stock



Source: UNCTADStat database.

An interesting aspect of Chinese OFDI is that development considerations have featured in official government policy. Since the 1980s, the Chinese government has, both institutionally and through

various legal measures and frameworks, experimented in an industrial policy-type fashion with the guidance and promotion of OFDI in the interest of China's economic development (Zhan, 1995). However, as research has not thoroughly investigated the development contribution of OFDI in home developing countries, not much is known about the effectiveness of such policies. Has OFDI made a meaningful contribution to development in China? Available theories or frameworks also do not function well in explaining the development contribution of OFDI to the home economy, given the aforementioned focus of theories on ownership advantages and the technological, innovative and managerial superiority of the investing MNE. As a result, the Chinese and other governments of developing and emerging economies will have difficulties making any decisions about appropriate OFDI policies on the basis of existing academic and scholarly research.

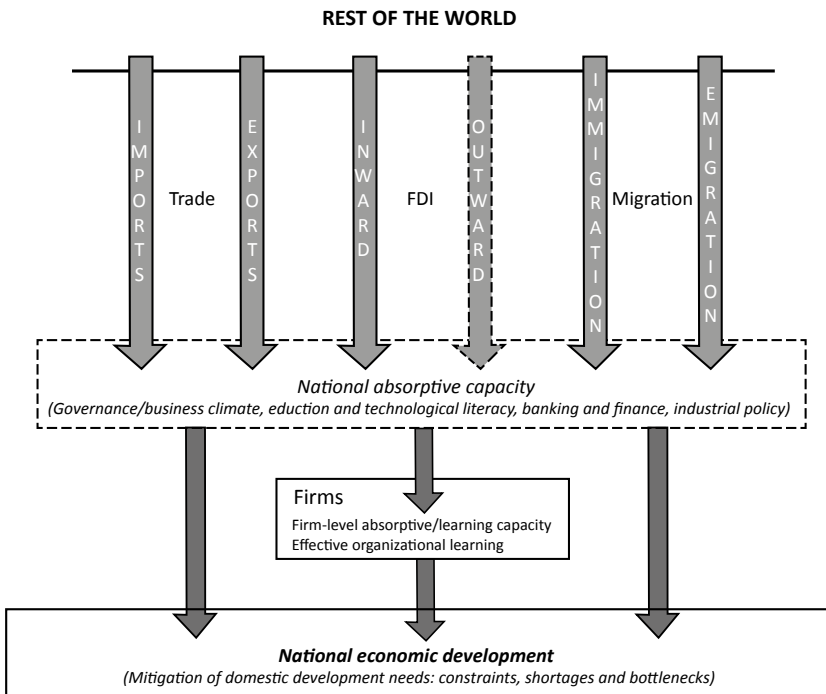
What is the nature of the potential development contribution of OFDI, and how could government policy effectively harness it? To address these questions, several analytical steps are at the core of this study's investigation. To begin with, I review the relevant literature on Chinese OFDI to gather preliminary insights into the contribution of OFDI to economic development in China. Then I identify and categorize the mechanisms through which Chinese OFDI has made development contributions. This is done by developing the concept of "returns" from OFDI and by examining how these returns have contributed to economic development in China. Particular examples of Chinese MNEs are drawn upon to confirm the findings.

In order to evaluate the importance of OFDI to the development of the Chinese economy, I further assess the strengths and feasibility of these mechanisms in contributing to development. An important consideration is whether OFDI adds something unique to the other channels of economic interaction with the rest of the world from which China's economic development has been found to have benefited in the past – namely trade, inward FDI and migration. Development studies often depict these economic exchanges with the rest of the world as shown in figure 2 but omit OFDI owing to the lack of research on its development contribution. I include OFDI in this figure by way of a dotted line, aiming with this study to determine, for the case of China initially, whether OFDI should rightfully be included in this graph.

Given the explorative character of this study, an inductive approach to research was applied. In the spirit of concept development and theoretical expansion, a single-country case study is examined to develop an analytical framework on the development contribution of OFDI (Yin, 2014; Eisenhardt, 1989), which future studies can use and test in further analyses of the Chinese case or of other developing countries. This study concludes with relevant considerations for future economic policy.

I take the State-centric position of the MNE, which considers the MNE as a product of its economic, institutional and cultural origins in the home country (Gilpin, 2001, p. 288). This is appropriate for Chinese OFDI, which has emerged only recently and has not yet generated the kind of globalized MNEs in which the country of origin is becoming blurred. For the purpose of this study, I apply a broad understanding

Figure 2. Economic exchanges with the rest of the world and economic development



Source: Adapted from Andreosso-O'Callaghan and Qian, 1999, p. 128 and World Bank, 2008, p. 8.

of the term “development”, including not only growth in GDP but also more qualitative contributions to the economy such as economic restructuring, technological advancement, sustainability, and improved productivity or efficiency (Soubbotina, 2004, p. 133). I also consider development to be an issue for countries categorized by the World Bank as developing or transition economies (a group that includes China) and a process that the advanced industrialized countries have successfully concluded.

2. Chinese OFDI: Initial considerations on home-economy development

Some studies have empirically examined the impact of OFDI on advanced home economies. Although far from all of them find evidence of such a relationship, a few have identified positive effects (Blomström and Kokko, 1998; Dunning and Lundan, 2008; Kokko, 2006; Lipsey, 2004; Moran, 2006) – an encouraging observation in view of this study’s particular objectives. Table 1 provides a list of studies that have found OFDI to enhance economic growth, exports, productivity, efficiency, competitiveness, technologies and know-how in advanced home economies. It is possible to infer from these studies that similar effects must play a role in developing and emerging economies such as China, although concrete evidence is lacking. In fact, with such economies as the countries of origin, any impact from OFDI should come in the form of more specific development contributions to the home economy, with more significant qualitative benefits than the typical gains from OFDI made in advanced countries. But given the lack of concrete evidence, the need for thorough case study analysis of individual developing countries is urgent.

In line with the broader picture in the literature on inward FDI and development, accounts of Chinese OFDI have focused on the development impact that Chinese MNEs have in host countries, especially in Africa and Southeast Asia (Kubny and Voss, 2014; Whalley and Weisbrod, 2011). There is no body of literature examining the impact of OFDI on *China’s* economic development, although some of the literature indicates the existence of such an impact. The rest of this section examines this literature to establish a foundation based on which a framework of Chinese OFDI and economic development can be developed.

**Table 1. Favourable impact of OFDI on advanced home economies:
Evidence from the literature**

Type of FDI	Impact on home economy	Source
French OFDI	French exports and French FDI are complementary.	Chédor, Mucchielli and Soubaya, 2002
UK OFDI	OFDI can raise productivity in the United Kingdom.	Driffield and Love, 2005
Austrian OFDI to Eastern Europe	Outsourcing increases economic and total factor productivity growth in Austria.	Egger, Pfaffermayr and Wolfmayr-Schnitzer, 2001
Italian OFDI	OFDI is associated with employment growth at the local level compared with the national industry average.	Federico and Minerva, 2008
Swedish OFDI	OFDI supports the diffusion of foreign technology to Sweden.	Globerman, Kokko and Sjöholm, 1996
OFDI from Nordic countries	Activities of firms abroad transferred knowledge into the national innovation systems of Nordic home countries.	Herstad and Jónsdóttir, 2006
OFDI from 14 industrialized countries	In the long run, OFDI has a positive effect on output.	Herzer, 2008
OFDI from the United States and Germany	OFDI has positive effects on domestic investment in the short run and, for the United States, in the long run as well.	Herzer and Schrooten, 2008
OFDI from the United States and 50 other countries	The association between OFDI and growth is positive.	Herzer, 2010
French OFDI	Market-seeking and services OFDI create jobs in the home country; factor-seeking FDI improves capital-intensity and efficiency, and enhances exports.	Hijzen, Jean and Mayer, 2009
FDI in West Sweden	R&D activities in west Sweden resulted in benefits for the global economic activities of the foreign companies involved, in sectors ranging from manufacturing to services.	Ivarsson and Jonsson, 2003
Japanese OFDI	Japanese exports are promoted by the activities of Japanese foreign manufacturing affiliates.	Lipsey and Ramstetter, 2003
United States OFDI	Diffusion of knowledge occurs from the host country back to the United States.	Popovici, 2005
European Union (EU) OFDI	OFDI from the EU has contributed to enhancing competitiveness and productivity in EU member States.	Sunesen, Jespersen and Thelle, 2010
OFDI from 22 industrialized countries	The productivity of an economy increases if its OFDI is directed to R&D-intensive countries.	Van Pottelsberghe de la Potterie and Lichtenberg, 2001

Note: This table lists only a selection of studies that find results favourable to the home economy. It is not comprehensive and does not list studies with negative or no findings. A more comprehensive account of studies and their results has been provided by Lipsey (2004) and by Kokko (2006) in extensive summaries of the literature.

2.1. Chinese OFDI as a pursuit of assets and advantages

It has been argued that Chinese OFDI is a natural result of China's increasing economic strength (Liu et al., 2005). However, especially with regard to Chinese OFDI into the advanced economies – which is a considerable share of all Chinese OFDI – the more common view has been that the Chinese economy and its firms continue to exhibit numerous weaknesses, with OFDI often driven by the desire to overcome these weaknesses (Ash, 2008, p. 199; Child and Rodrigues, 2005, p. 388; Deng, 2007, p. 77, 2008; Knoerich, 2012, 2010; Von Zedtwitz, 2005; Yang, 2005, pp. 49-58; Wu 2005, pp. 8-9; Young et al., 1996). Reference is often made to the lack of within-firm strategic resources, especially technologies, know-how and brands (Wu, 2005; Deng, 2008). Some Chinese firms are considered “multinationals without advantages” (Fosfuri and Motta, 1999), or at least do not exhibit the same type of firm-specific capabilities, focused on technological, managerial or marketing superiority, that have been typical for MNEs from advanced economies (Guillén and García-Canal, 2009).

This view contradicts, at least in part, traditional theories of FDI, which argue that market power and competitive advantages are both key to successful overseas investment (Hymer, 1960; Dunning, 2001). Some literature suggests that Chinese companies began to invest abroad comparatively early, when China was not yet sufficiently developed to justify the magnitude of OFDI already observed (Yang, 2005, pp. 54-55). Chinese OFDI does not seem to fit with the internationalization and psychic distance approaches to foreign investment either (Johanson and Vahlne, 1977, 1990). Rather than undergoing incremental overseas expansion, as these theories would predict, Chinese companies have expanded rapidly into distant economies, many quite different from the Chinese economic system. As a result, several studies have mentioned the need to expand existing theory on the basis of observations about Chinese OFDI (Child and Rodrigues, 2005, p. 407; Buckley et al., 2007, pp. 501-503; Gammeltoft, Barnard and Madhok, 2010).

Instead of emphasizing the competitive advantages of Chinese MNEs as a foundation of their OFDI behaviour, a number of studies have focused on what could be termed the “pursuit of assets and advantages” abroad. Chinese MNEs have made attempts to overcome

their firm-specific disadvantages by using OFDI as a means to acquire various kinds of strategic assets, including know-how, brands and technologies (UNCTAD, 2006, pp. 162-163; Child and Rodrigues, 2005). This has been confirmed in numerous case studies (Knoerich, 2010; Rui and Yip, 2008; Child and Rodrigues, 2005; Wu, 2005), and has been identified as a motivation for OFDI – even before 1992 (Young et al., 1996). Chinese OFDI in the acquisition and extraction of natural resources has also been significant and is rapidly expanding (Buckley et al., 2007, p. 504; Deng, 2004, p. 11; Cai, 1999; UNCTAD, 2007, p. 100), with the annual number of new deals reaching record levels in recent years.

Probably the main motivations for Chinese companies to invest abroad have in fact been expansion into new markets, strengthening of export markets, or circumvention of trade barriers (Knoerich, 2012; Keller and Zhou, 2003, p. 11; Deng, 2004, pp. 12-13; Taylor, 2002, p. 221). Together with strategic-asset-seeking FDI, such pursuit of market access, often for low-cost or niche products (Knoerich, 2012), explains the peculiar situation of a certain geographic concentration of Chinese OFDI in advanced economies: their large markets combine with an environment in which firms hold a considerable amount of managerial and marketing know-how, technologies and brand names. OFDI aimed at reducing production costs has been less important for Chinese companies, as production costs have been among the lowest in China itself. However, this kind of OFDI from China is slowly increasing as the Chinese economy reaches the “Lewis turning point” and as labour costs are rising rapidly.

OFDI as a pursuit of assets and advantages to overcome competitive weaknesses and disadvantages is being highlighted as an important difference from conventional North-North or North-South FDI. A few studies have examined Chinese OFDI through the resource-based view of the firm (Deng, 2008), explaining how the Chinese MNEs, through overseas investments, obtain complementary resources that they lack in-house. Similarly, the linkage-leverage-learning approach takes a learning-based view of Chinese OFDI (Li, 2007; Mathews, 2006).

Such perspectives are particularly useful when exploring the development implications of OFDI for the Chinese economy. Many of the assets and advantages pursued by Chinese MNEs can yield

broader benefits for the investing firm's operations in China, for other firms in China and for the Chinese economy as a whole. Yet, in much of the literature, the link between the motivations and determinants of Chinese OFDI and their respective development outcomes in China has been made implicitly, if at all. There is definitely a lack of detailed, focused analyses of the various dimensions of this development contribution. This may be because much of the research on Chinese OFDI to date has emerged in the field of international business, which is primarily concerned with firm-level analyses, rather than in other areas such as development studies, where macroeconomic effects and development implications may receive greater coverage. The purpose of this study is to bring more attention to this broader dimension of economic development – essentially an outcome of the activities of Chinese firms going abroad – in order to raise awareness of an important but underinvestigated area of inquiry.

2.2. Chinese government support for OFDI and development

Since the 1980s, the Chinese government has been concerned in a number of ways with fostering OFDI in line with national economic development priorities (Zhan, 1995, p. 81; Zhang and Van Den Bulcke, 1996, p. 417; Zhang, 2003, p. 62). The high level of State ownership of China's outward investing firms (Morck *et al.*, 2008, p. 340; MOFCOM, 2014, p. 107; Korniyenko and Sakatsume, 2009, p. 11; OECD, 2008, p. 2), capital market imperfections that favour those firms (Buckley *et al.*, 2007, p. 501), and the steering of OFDI behaviour through a well-structured policy framework and economic incentives have been regularly pointed out in studies of Chinese OFDI (Brown, 2008, p. 5; Lu, Liu and Wang, 2011; Wang, 2002, p. 187; Yeung and Liu, 2008; UNCTAD, 2006, p. 157). In the earlier years of China's economic reforms, the Chinese government was particularly concerned with the encouragement, regulation and control of Chinese enterprise activities and investments abroad (Zhang, 2003, p. 55). Government involvement in OFDI decisions could be very direct, guiding large Chinese State-owned enterprises (SOEs) in selected industries to invest in designated destination countries in line with China's long-term strategic interests. Such government involvement was often motivated by concerns related to China's economic development, such as the strengthening

of export opportunities and access to strategic resources, including know-how, technologies, equipment and raw materials (Wang, 2002, pp. 192-194; Wu and Chen, 2001, pp. 1237-1239; Guo, 1984; Zhang, 2003, p. 57; Zhan, 1995, p. 70; Zhang and Van Den Bulcke, 1996, pp. 417). OFDI had the potential to improve the competitive strength of Chinese firms, support catch-up ambitions and offset disadvantages in global competition (Tan, 2001, p. 192; Chen, 2005, p. 30; Luo, Xue and Han, 2010).

This approach was continued, albeit in a less stringent way, with the “going out” policy implemented by China’s Ministry of Commerce with the National Development and Reform Commission (NDRC) after 2000. The policy supports the exploration of natural resources to reduce domestic shortages, promotes exports, encourages the establishment of research and development (R&D) centres abroad to utilize foreign technological know-how, and selectively supports engagement in mergers and acquisitions (M&As) that can improve the competitiveness of Chinese firms and facilitate access to foreign markets (UNCTAD, 2006, p. 210). Support offered by the government has included the provision of information, guidance and training to investors (including through the publication of three consecutive lists indicating the countries and industries in which Chinese enterprises should invest), administrative support, facilitation of investments through diplomatic or non-diplomatic means, and financial assistance, such as through insurance, taxation (People’s Daily Online, 2007), and low-interest loans and preferential credit (Child and Rodrigues, 2005; Zhang, 2003, p. 60-61; Warner *et al.*, 2004, p. 340; UNCTAD, 2006, p. 180; Xiao and Sun, 2005). Gallagher and Irwin (2014) estimate the magnitude of China’s OFDI finance from its development banks between 2002 and 2012 to have reached US\$140 billion.

Because of these many forms of involvement by the Chinese State, the business literature often sees political and institutional factors functioning as important drivers and home-economy determinants of Chinese OFDI. The support and encouragement by the State, State ownership, and the existence of capital market imperfections in China that give preference to SOEs have been found to influence the OFDI decisions of Chinese enterprises and potentially offer them a source of competitive advantage (Morck *et al.*, 2008; Antkiewicz and Whalley, 2006; McKinsey, 2008, p. 4).

China's industrial policy-type OFDI regime is usually dealt with in a critical manner and not considered in light of the country's development priorities. Concerns about the potential negative spillovers of China's institutions and OFDI policy regime in host countries greatly exceed any recognition that the Chinese government may be pursuing legitimate development policies that may often be in line with host country interests. The literature does not present a framework that enables an analysis of whether and how Chinese OFDI contributes to the development of the Chinese economy, thereby preventing a proper evaluation of the appropriateness of China's OFDI policies. The purpose of the following section is to develop such a framework.

3. The returns from Chinese OFDI

The literature on Chinese OFDI forms a useful basis for exploring the mechanisms through which OFDI contributes to China's economic development. This literature has shown that Chinese enterprises, often driven by deficiencies in the home economy, invest abroad to pursue assets and advantages in four key areas: markets, strategic assets, natural resources and, on lesser occasions, efficiency enhancement. It is this pursuit of assets and advantages as a core activity of any direct investment that should form the starting point of an analysis of the development contribution.

How the pursuit of markets, strategic assets, natural resources and efficiency contributes to development in the Chinese economy remains obscure. In this study, I argue that a contribution to economic development in China becomes possible if the successful and effective pursuit and appropriation overseas of an asset or advantage generates some sort of positive return, not only for the subsidiary of the Chinese company but also for the company's headquarters and operations in China and, by extension, for the Chinese economy as a whole. A thorough analysis of the nature and types of returns that Chinese OFDI generates, including an examination of the impact these returns have in China and whether they address any particular development needs, can greatly help assess the role OFDI plays in supporting development in the home economy.

In what follows, the case of Chinese OFDI is examined to identify the returns that OFDI generates. In the process, quantitative macro

data and relevant findings from the literature are supplemented by concrete evidence from individual cases of Chinese companies. For this purpose, table 2 provides a rare list of more than two dozen specific cases in which the returns generated by Chinese companies' OFDI have been concretely identified and documented. This collection of clear examples is in many ways unique, especially given the generally low availability of concrete and published accounts of Chinese OFDI cases. The examination of this data resulted in the identification of four types of returns generated by Chinese companies from OFDI. The following sections examine each of these in greater detail.

3.1. Financial gains from FDI and associated economic activities

It is in the nature of an investment that the ultimate objective is financial gain. Although not explicitly mentioned in table 2, most if not all investments listed there were ultimately driven by the profit motive. Balance-of-payments statistics for China show that the overall amount of money earned by Chinese MNEs abroad is not insignificant – more than US\$30 billion in income was generated from OFDI in 2013. As figure 3 illustrates, rates of return on Chinese OFDI have ranged between 5 and 6 per cent in the years from 2009 to 2013. Substantial amounts of FDI income are reinvested in the host country (US\$22 billion in 2013), but when remaining funds are repatriated and reinvested in the home economy, Chinese companies and China stand to benefit economically. Although an estimated overall value of a few billion dollars in repatriated income will not make a particularly noteworthy economic contribution in view of China's overall financing capacity today, the contribution to capital accumulation and potential development contribution in individual, possibly localized contexts should not be ignored. For example, remittances from migration may be much higher than these financial returns from OFDI, but they are often consumed rather than reinvested. Moreover, the financial income from OFDI might have mattered more in earlier years of China's economic reforms, when China was in greater need of foreign exchange.

Possibly of greater importance have been the financial implications of OFDI for China's export industries, especially as enhancement of exports has played an important role in China's strategy to promote economic development and maintain a current account surplus. Many

Table 2. Example cases of Chinese investments abroad

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
Consortium led by MMG Limited (including CITIC Metal)	Las Bambas copper mine (acquired from Glencore Xstrata)	Peru (2014)	“China gave its approval to the merger [of Glencore with Xstrata] after Glencore agreed to sell its stake in Xstrata’s copper mining project in Peru to a buyer approved by Chinese authorities.” (BBC, 2014)	“The mining giant also agreed to supply a minimum volume of copper concentrate to China for a period of eight years.” (BBC, 2014)
Shuanghui International	Smithfield Foods Inc.	United States (2013)	“enabling Shuanghui to learn from the Virginia-based company’s food safety and production technology.” (Tadema, 2013)	“Smithfield, [...] and Shuanghui [...] have said their joining will increase U.S. pork exports to China”. (Tadema, 2013)
Zhuhai Yintong Energy Co., Ltd.	Altair Nano-technologies (Altair Nano)	United States (2011)	“to obtain Altair Nano’s lithium titanate battery technology for China” (Szamoszegi, 2012, p. 100)	“it is one of the technologies listed in China’s 863 Technology Plan. [...] Yintong’s New Energy Vehicle Development Plan for 2011-2020 makes clear that the Altair Nano investment was undertaken with the state’s development objectives in mind [...]. Through holding shares of American Altairnano Company, Yintong Group has introduced the globally most advanced cell anode material technology – lithium titanate technology into Chinese market. Yintong Group purchases dedicated lithium titanate material of Altairnano for production of cell cells (sic) in China. [...] it possesses superior reliability in applications of national defense, national infrastructure and other equipment’.” (Szamoszegi, 2012, p. 100)

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
Anshan Iron & Steel Group	Steel Development Co. (14% stake) and construction of associated steel plants	United States (2010)	"A spokesman for Anshan [...] said [...] the Mississippi company uses an electronic-furnace technology that Anshan would like to introduce to China to save power and reduce pollution." (Aredy, 2010)	"Specifically, Anshan explained that: Anshan's investment in building mills in the U.S. is not only going to fit the need of self-development, it's also Anshan's sacred historic mission of being the 'eldest son of iron and steel' of the world's largest iron and steel country. [...] It is also Anshan's contribution to the realization of transforming China from a big iron and steel country to a strong iron and steel country.** Moreover, several of Anshan's justifications for its investment derive directly from the [...] industrial policies, including acquiring advanced technology and returning the technology to China, and 'enhanc[ing] the internationalization of Anshan.'**" (Price et al., 2011, p. 10)
Zhejiang Geely Holding Group	Volvo	Sweden (2010)	"Geely will be able to tap Volvo for three much-needed technologies, including the use of a midsize platform, Volvo's proven safety innovations and interior air quality systems. The latter two technologies are important to improve the crashworthiness of Geely's cars, along with helping isolate vehicle occupants from China's often severe air pollution." (Ross, 2012)	"The report says that Volvo tech will likely be used on a premium car brand that Geely is expected to create." (Ross, 2012)
Hangzhou Machine Tool Group (HZMTG)	aba z&b	Germany (2010)	"Chinese HZMTG takes over 100% of the shares of aba z&b Schleifmaschinen [grinding machines]." [translated from German] (Schreier, 2010)	"... the production of standard machines was relocated to the site in Linan in China..." [translated from German] (Schreier, 2010)

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
Yanzhou Coal Mining Co.	Felix Resources Ltd.	Australia (2009)	“Yanzhou Coal has been looking at expanding its assets into Australia for several years,” said Andrew Driscoll, [...]. “Its production levels in China are fairly flat in comparison with its peers and opportunities for expansion at home are limited. It needs to look abroad to expand output.” (Scott and Duce, 2009)	“agreed to buy Australia’s Felix Resources Ltd. [...] to secure supplies” (Salidjanova, 2011, p. 7) “Yanzhou will pursue plans to boost its coal reserves, President Yang Deyu said in an October interview.” (Scott and Duce, 2009)
China-Africa Cotton Development Ltd (a joint venture between Qingdao Ruichang Cotton Industrial Co, China-Africa Development Fund and Qingdao Fuhui Textile Co.)	“China-Africa Cotton had grown a presence in Malawi.” (Wang, 2014)	Malawi (2008)	“China-Africa Cotton has established a seed-breeding base and a ginnery in Malawi, with annual capacity of 30,000 tons. [...] China-Africa Cotton has also bought a plant in Malawi from Cargill, [...] to extract oil from cotton seed.” (Wang, 2014)	“A small amount of the cotton is processed locally, with the rest being shipped back to China, Wang [the general manager] says.” (Wang, 2014)
China National Offshore Oil Corporation (CNOOC)	Awilco	Norway (2008)	“technology of the Norwegian oil producer Awilco, purchased [...] for 2.4 billion euros.” (Geinitz and Lindner, 2012, translated from German)	“This year, CNOOC began its first own deep-sea drilling. This was possible with the technology of [...] Awilco.” (Geinitz and Lindner, 2012, translated from German)
Wanxiang Group	“has purchased or taken stakes in 20 U.S. companies” (Szamoszszegi, 2012, p. 82)	United States (1999-2006)	“Wanxiang America expanded by purchasing some of these financially distressed firms.” (Szamoszszegi, 2012, p. 81)	“and shifting a portion of their production to China” (Szamoszszegi, 2012, p. 81)

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
China Qianjiang Group	Benelli	Italy (2005)	<p>"The main reasons for QJ to purchase Benelli was to utilize a well-known and recognized brand in terms of quality and sporting tradition, as well as to capitalize on Benelli's professionalism and knowledge, in order to offer a high-quality product in segments that had not yet been penetrated by the QJ group." (Spigarelli et al., 2012, p. 366)</p>	<p>"Benelli's products/spare-parts were also to be used in China, so as to increase the quality of domestically manufactured products and to further diversify production to new categories of clients. Increased efficiency and a wide range of quality products would have helped QJ to compete with the leading Japanese companies in the motorbike market." (Spigarelli et al., 2012, p. 367)</p>
Lenovo/Legend	IBM PC Business	United States (2005)	<p>"Not only would Lenovo be allowed to use the IBM brand under license for five years, [...] it would also own IBM's premium Think trademark which covers the prestigious ThinkPad notebook brand and the ThinkCenter desktop line. Equally important would be Lenovo's gaining access to IBM's international expertise, especially in areas such as the management of manufacturing and distribution channels in the 160 countries." (Wu, 2005, p. 18).</p> <p>"as well as gain technology and expertise to complement its existing firm-specific advantages in China" (UNCTAD, 2006, p. 163)</p>	<p>"As one senior manager commented, 'The deal has enhanced our technology and innovative capabilities by at least 5 years. More importantly, we have the world-class managerial team from IBM, and that is invaluable' (Lenovo, personal communication, May, 2005)." (Deng, 2007, p. 76)</p>
Nanjing Automobile	MG Rover	United Kingdom (2005)	<p>"Nanjing obtained MG Rover's engine plant and other facilities, five Rover car brands, the opportunity to sell in Europe, and an existing network of procurement, selling, and service in Europe." (Rui and Yip, 2008, p. 220)</p>	<p>"All of these assets were expected by Nanjing to produce competitive cars so as to obtain a stronger market position in China and an exporting position in Europe. [...] Another was to attract Chinese customers [...] by 'localizing' the brand." (Rui and Yip, 2008, p. 220)</p>

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
Heilongjiang Dongning Huaxin Industry and Trade Group	Armada (joint venture)	Russia (2004)	"Covering an area of 40,000 hectares, Armada is not only the largest Sino-Russian agricultural cooperation project but also the biggest farm in the Russian Far East." (Wu and Liu, 2013)	"It raises 30,000 pigs a year and grows soybeans and corn that is sold in local markets or shipped back to China." (Stanway, 2013) "Chinese corporations are involved in producing food in neighbouring countries for the domestic market, one example being the 400,000 hectare farm on the China–Russia border jointly owned by China’s Huaxin Group and Russia’s Armada." (Morton, 2013)
Shenyang Machine Tool Group (SYMG)	Schiess GmbH	Germany (2004)	"SYMG’s strategy through its acquisition of Schiess was not just to thereby gain access to new markets, first in Europe and the [n] worldwide. It was also to draw on the skills and technology of the German company’s designers and engineers to produce a whole new generation of machine tools [...]". (Hattersley, 2014)	"SYMG machines are being developed and brought to readiness for series production using Germany’s technologically high levels of engineering expertise and then [...] to be manufactured [in China] at an economically viable cost," explains Dr Marcus Otto, Director of Schiess Tech. "[...] at Schiess Tech’s Berlin [sic] office engineers from ten European countries are working closely with Chinese colleagues to develop equipment for the world market. One of the first results of this collaboration is our new VIVA TURN 4, [...] which is designed here in Berlin for the European market and assembled [...] in Shenyang." (Hattersley, 2014)
Shagang	Thyssen-Krupp Stahlwerke	Germany (2002)	"In an unprecedented campaign, both the Phoenix steelworks ("East") and the coking plant Kaiserstuhl and large parts of the Westfalenhütte were sold to a Chinese consortium ("Shagang")." [translated from German] (www.industriedenkmal.de)	"A complete steelworks including blast furnaces, rolling mills and sintering plant shall be disassembled into millions of individual parts, to subsequently rebuild it in China’s Zhangjiagang, 9,000 kilometres away." [translated from German] (Dohmen and Schmid, 2002)

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
Haier	Meneghetti refrigerator plant	Italy (2001)	"Haier saw this acquisition as providing the opportunity to develop new products from a European manufacturing base." (Bonaglia et al., 2007, p. 377)	"[...] buying Meneghetti-produced built-in ovens and hobs to market them in China under the Haier brand name." (Bonaglia et al., 2007, p. 377)
Holly Group (Holly Holdings (USA) Ltd)	Philips Semi-conductors (CDMA hand-set reference design operation), establishing Holly communication Group Inc.	United States (2001)	"The Holly Group provides an example of foreign acquisition aimed at securing proprietary technology [...]. A major step forward towards implementing this strategy was Holly's acquisition in September 2001 of the CDMA hand-set reference design operation from Philips Semiconductors in the USA." (Child and Rodrigues, 2005, p. 392)	"Philips Semiconductors agreed to transfer to Holly Holdings all equipment, assets and associated know-how, alongside intellectual property rights, which were embodied and engendered by the activity of hand-set reference designs. Furthermore, the Holly Group also benefited [...] by gaining an exclusive license to handle and process the CDMA software protocol that earlier had been developed by Philips. The latter promised [sic] to supply Holly and its (prospective) customers with key silicon-components, so that Holly could continue the process of developing and marketing these licensed products." (Warner et al., 2004, p. 335)
Huawei Technologies	R&D centres	India, Germany, Japan, United States, etc. (since 1999)	"Huawei [...] provides another example of how Greenfield investment in R&D can help Chinese companies be close to sources of knowledge and learning." (Deng, 2007, p. 75)	"These ventures [...] aim to offset areas of weakness in China's innovation system, to access foreign technological assets, and to capture the externalities created by host-country technology clusters (www.huawei.com.cn)." (Deng, 2007, p. 75)

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
Haier	Haier Industrial Park (greenfield), South Carolina; marketing centre, New York; design and R&D centres, Los Angeles and Boston	United States (since 1999)	"For Haier, investment in the U.S. is certainly motivated by factors such as expanding the range of products it sells and bypassing non-tariff barriers on imports of Chinese appliances. [...] in the words of one senior manager, 'By setting up the production plant in the U.S., we aim to draw on America's expertise in design, research, innovation, and technology, as well as to increase our global brand.' (Haier Group, personal communication, August, 2004)." (Deng, 2007, p. 75)	"The major role of these R&D centers is to develop, acquire, and transfer technology, and to help the head office develop home appliances that meet the needs and wants of local consumers (Haier Group, personal communication, August, 2004)." (Deng, 2007, p. 75)
Galanz	R&D centre, Seattle	United States (1998)	"Galanz [...] has invested [...] in an R&D center in Seattle, Washington in order to improve its own proprietary technological capability." (Deng, 2007, p. 75)	"The increased technological strength helped Galanz not only become the world's largest manufacturer of microwave ovens, but also build up its strong international brand for the future." (Deng, 2007, p. 75)
China Petroleum and Natural Gas Corporation	Oil-related projects	Peru and Canada (since 1992); Sudan, Venezuela, Kazakhstan (since 1996)	"exploration and exploitation of oil" (Cai, 1999, p. 869)	"On 15 September 1997 the first shipment of crude oil obtained from the company's overseas investment was brought back to China."*** (Cai, 1999, p. 869)

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
San Huan New Material High-Tech Inc., and China National Nonferrous Metals Import and Export Company	Magnequench (majority share)	United States (1995)	"Magnequench had a unique expertise in the manufacture of high-powered neodymium magnets, which it pioneered in the 1980s for its parent company, General Motors [...]” (Tkacik, 2008)	"in 2004, Magnequench, together with its merger partner NEO Material Technologies (and its integrated Chinese joint-venture partners), supplied about 80 percent of the world market share of neodymium and rare-earth oxide powders [...] Magnequench’s crown-jewel technologies had already seeped off unnoticed to China, and the entire production line was already being dismantled in the United States. [...] NEO and its Magnequench affiliate report that 85 percent of their manufacturing facilities are in China” (Tkacik, 2008)
China Ocean Fishing Corporation	>50 wholly owned subsidiaries, joint ventures and cooperative subsidiaries	in almost 20 countries, including the United States, Iran, and Argentina as well as in West African nations (1985-1995)	"Operating a fleet of more than 800 ships of various types and employing 15,000 sailors and land-based workers abroad" (Deng, 2004, p. 11)	"[I]ts annual catch of several hundred thousand tons of seafood is all sent back to the rapidly growing Chinese market.” (Deng, 2004, p. 11)
Shougang (Capital) Iron and Steel Corp	Masta Engineering and Design Inc. (70%)	United States (1988)	"obtain access to the US company’s high technology design capability in steel rolling and casting equipment” (Wall, 1997, pp. 24-25); "Through this investment Shougang is able to use Masta’s 650 blueprints and microfilms, 46 software packages, 41 technical patents and 2 registered trade marks in well-advanced rolling and continuous casting technologies. Masta became Shougang’s research-and-development basis overseas.” (Zhan, 1995, p. 89)	"This investment has significantly strengthened Shougang’s abilities to design and manufacture heavy metallurgical equipment and increased the international competitiveness of China’s iron and steel industry. [...]"

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
China Metallurgical Import and Export Corp	Channar Mine joint venture with CRA	Australia (1987)	"extraction of iron ore" (Cai, 1999, p. 868)	<p>In late 1989, Shougang and its subsidiary Masta established a joint venture in Beijing, Masta Engineering Beijing Co. Ltd. With the advanced technology from Masta, the venture undertook a number of large technological renovation projects in China, including one research-and-development project listed as a key one in China's Seventh National Development Plan. Through joint research and development with United States experts and hands-on training in both China and the United States, Chinese engineers soon became familiar with the most advanced technology and know-how in the metallurgical industry." (Zhan, 1995, p. 89)</p>
				<p>"The ore is taken by conveyor belt to Paraburadoo, where it is transported – with product from the mine there and from Eastern Range – by the Hamersley and Robe River railway to the port of Dampier, and then loaded on ships, many headed for China. [...] The Channar ore body was identified as the most suitable for Chinese steel mills, [...] production began in January 1990, the first shipment being sent from Dampier to Shanghai." (Callick, 2010)</p> <p>"Within the 30-year duration of the joint venture there will be a stable shipment of 200 million tons of quality iron ore from Australia to China."***** (Cai, 1999, p. 869)</p>

Chinese company	Foreign investment	Country (Year)	Asset/advantage sought	Returns
China Bicycles Corporation	Purchase of an American bicycle company	United States	"in order to gain access to the technology for producing the high specification models in demand in the United States and Europe" (Wall, 1997, p. 24)	"The company transferred the technology back to its Shenzhen plant which now has a highly successful export market." (Wall, 1997, p. 24); "In this way, not only was the technology itself transferred but also the ability to translate it into practical commercial use." (Deng, 2004, p. 11)
Shanghai Baoshan Iron and Steel Corporation	Six joint ventures	Australia, Brazil, South Africa	"to gain access to both iron-ore mining and steel marketing" (Deng, 2004, p. 11)	"Between 1990 and 1994, the company shipped over 10 million tons of mineral back to China, saving an estimated \$6 million in fees and charges." (Deng, 2004, p. 11)

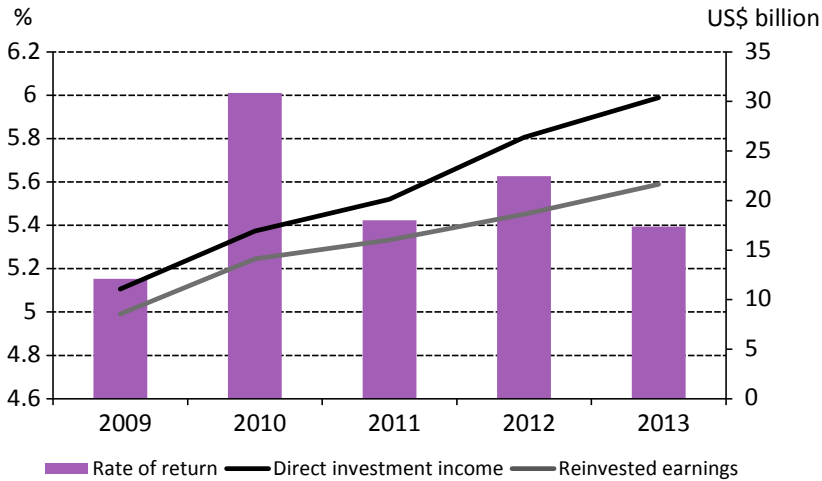
* Original source: Guangdong Yintong Investment Holding Group Company Limited New Energy Vehicle Development Plan (2011-2020).

** Original source: "Angang to Invest and Build Factory in the United States", Anshan Iron and Steel Group Corporation (May 17, 2010) (Chinese translated version).

*** Original source: Renmin Ribao, 16 September 1997, p. 1.

**** Original source: Jiang, Bolun, and Zhenfang Zou (1996). Foreign Investment of Chinese Enterprises (Beijing: Economic Science Press), pp. 18-19.

Figure 3. Financial returns from Chinese OFDI



Source: IMF Balance of Payments (BOP) Statistics, UNCTADStat (for FDI positions). Rates of return are calculated by dividing direct investment income in year t by the average of the FDI positions for years t and t-1 (UNCTAD, 2013).

Chinese investments, and especially those in advanced economies, have as their objective the pursuit of new export markets overseas or the enhancement of access to existing export markets (Knoerich, 2012). Not only are the investing firms' export earnings enhanced by such activities, but their Chinese suppliers benefit in similar ways, with attendant financial benefits accruing directly within the Chinese economy from profits and foreign exchange earnings.

A final benefit is that OFDI has made financing from overseas sources possible, opening up a viable alternative to domestic sources of capital (Wall, 1997, p. 16; Deng, 2004, p. 15). The availability of capital and foreign exchange has been distorted in China, where SOEs are still the primary recipients of loans from State banks. Such capital market imperfections have, for instance, forced small- and medium-sized enterprises to rely more on informal finance and export earnings to finance and expand their operations. OFDI has broadened the overall pool of financing options available to all kinds of Chinese firms.

3.2. Intangible benefits and the enhancement of capabilities

Beyond immediate financial gains, Chinese firms investing abroad have enjoyed intangible benefits from the pursuit of technologies, managerial and marketing skills, brands and various forms of tacit know-how available in foreign locations. Once these intangible resources reach the home economy – which would normally occur through within-firm transfer mechanisms – and are assimilated and integrated into domestic economic activities, Chinese firms enjoy greater access to capabilities that are new or unfamiliar to them. Economic development occurs when these acquired capabilities support Chinese companies in the process of catching up in technological and other fields, help improve efficiency in resource use or advance sustainability in the economy in other ways.

The amount, nature and type of capabilities obtained by Chinese companies through OFDI differ with the entry mode of investment. Greenfield investments can yield access to capabilities through reverse spillovers, reverse competition and demonstration effects, and reverse labour turnover (Knoerich, 2012). Chinese OFDI in R&D activities has also expanded at a brisk pace (OECD, 2007, p. 22). With advanced economies as the dominant destination for this kind of OFDI (UNCTAD, 2005, p. 150), catch-up has been an important motivation (Von Zedtwitz, 2005, p. 121). Another possibility has been inter-firm cooperation, such as through joint ventures between Chinese and foreign firms (Wall, 1997, pp. 15-16). Mergers and acquisitions (M&As) are generally known to be a particularly direct and effective means of gaining access to firm-specific capabilities (Dunning, 1998; Inkpen, 1998; Ranft and Lord, 2002), but they are capital-intensive undertakings. Chinese firms have been very active participants in cross-border acquisitions in advanced economies, as the cases of Lenovo's acquisition of IBM's PC business (United States) and of Medion (Germany), Geely's acquisition of Volvo (Sweden), Shuanghui's acquisition of Smithfield (United States), CNOOC's acquisition of Nexen (Canada) and some other cases listed in table 2 exemplify.

A few studies have documented internal transfers of (technological) know-how, brand recognition and other capabilities back to company headquarters in China (Knoerich, 2010; Zhan, 1995;

Deng, 2004), and the examples of Zhuhai Yintong, Anshan, Huawei, Shougang, Geely, CNOOC, China Qianjiang Group, Lenovo, Nanjing Automobile, Shenyang Machine Tool Group, Haier, Holly Group, Galanz, San Huan New Material High-Tech Inc. and China Bicycles Corporation in table 2 provide additional evidence of the existence of such “capability returns”. Many of these documented activities have occurred in sectors of key importance to China’s economic development, such as in the machinery and equipment, electronics and automotive industries. In at least the first four of these cases, documentation (cited in table 2) explicitly highlights the important link to China’s development priorities, such as the need to mitigate shortcomings in the country’s national innovation system (Deng, 2007, p. 75).

Despite substantial progress, especially in recent years, China has in most areas not yet reached a level of technological sophistication and innovation comparable with the international leaders, and its firms remain constrained by competitive and technological weaknesses. There is an intense debate between those who believe in the ability of Chinese firms to catch up and become strong international competitors and technology leaders (Rasking and Lindenbaum, 2004; Sigurdson, 2005, p. 15; Zeng and Williamson, 2003, p. 93; Brandt and Thun, 2010), and those who view this potential progress rather sceptically, citing technological and managerial deficiencies, lack of marketing and branding skills, weak innovation performance, low productivity, and low product variety and quality (Nolan, 2001, 2002; Alon, 2012; Yang, 2005, pp. 49-54; Wu, 2005, pp. 8-9; Steinfeld, 2004; Gilboy, 2004; McKinsey, 2008, p. 5; UNCTAD, 2006, p. 152). China has strong ambitions to become a knowledge-based economy, but it is reliant on foreign sources of know-how to complement domestic innovation efforts, as the latter on their own would be too costly and not fast enough to support catch-up with the international technology frontier. Thus, investments in foreign R&D centres, partnerships with more advanced firms abroad and foreign acquisitions may be more pragmatic approaches. Even leading Chinese firms such as Haier, TCL and Lenovo have had strategic needs, which they have sought to overcome by investing overseas (Deng, 2008).

However, the exact dynamics and success rate of accessing, appropriating and transferring firm-specific capabilities through OFDI are still little understood. There is no guarantee that a Chinese firm

will accomplish this successfully. Two important requirements are the capacity to absorb the know-how and intangible resources obtained abroad and the ability to transfer them across borders. The complex nature of many kinds of know-how and the challenges of integrating parent and subsidiary effectively to facilitate transfers are additional complicating factors. Beyond these within-firm challenges, stakeholder opposition in the host country could result in further difficulties, as could numerous cultural, contractual and legal barriers (Knoerich, 2010).

Yet cases such as that of Lenovo, which emerged as a leading global computer giant after its acquisition of IBM's PC division, and the recent rise of global telecommunications companies Huawei and ZTE with their international network of R&D centres, indicate that some Chinese companies have successfully accomplished these tasks. ZTE's European R&D centre was instrumental in developing the 4G technology that gave the company a strong market share in China. Accordingly, Huang and Wang (2009) find a positive association between OFDI and Chinese patents, and Wang (2012) proposes that OFDI can help upgrade the Chinese economy. Another study also suggests that OFDI is geared towards strengthening industries in China (Huang and Wang, 2011). In view of this co-existence of opportunities and challenges, a likely conclusion to be drawn is that OFDI can help Chinese firms upgrade their capabilities, although this works better in some cases and contexts than in others.

3.3. Enhanced availability of commodities, materials and physical assets

Certain types of Chinese OFDI enhance the availability and accessibility of commodities, raw materials or particular kinds of physical assets (e.g. machines or entire factories). Many investments by Chinese enterprises, especially State-owned ones, in resource-rich countries in Africa, the Americas, the Middle East and other regions have had the objective of tapping into overseas reserves of oil, gas, iron, copper, aluminium and other resources. Investment projects in this area tend to be large, accounting for a substantial share of China's corporate assets overseas. They are frequently achieved by acquiring shares in foreign firms or by engaging in cooperation schemes such as shareholding agreements and joint development (Tan, 2013; Deng,

2004, p. 11; Jiang and Sinton, 2011). In addition, Chinese companies have been purchasing or leasing farmland in many parts of the world, such as in Africa and Latin America, to produce a wide range of agricultural commodities including grain, palm oil, sugar, tea and meat (Sun, 2011, p. 15; Von Braun and Meinzen-Dick, 2009; Smaller and Mann, 2009).

Some of these commodities, materials and physical assets are shipped back to China for use in industrial production and to provide energy and supplies. For at least 11 of the cases in table 2 such direct (or intended) transportation of overseas products or physical assets back to China has been explicitly documented. In a detailed study of Chinese OFDI in agriculture, Smaller et al. (2012, pp. 15-27) identify projects in Argentina, Brazil, Kazakhstan, the Lao People's Democratic Republic, Malaysia, Myanmar, the Russian Federation, Senegal and Tanzania where export to China is an explicit purpose of the investment. The Chinese government has offered subsidies to resource-oriented investments aimed at shipping resources back to China (Luo, 2010, p. 76).

Apart from these immediate benefits, the ownership rights that OFDI conveys to a Chinese company promise more secure and stable access to overseas commodities and natural resources than does reliance solely on market mechanisms. OFDI is a means to hedge against the risks of being exposed to the volatility of prices in global commodity markets by enabling more direct access to raw materials under long-term contracts. The stability and certainty gained from reducing the likelihood of any shortages or crises provides an important advantage to China's economy. Even if commodities are not shipped back to China but sold in the open market internationally or locally, which is common for example in the energy and agriculture sectors (Chen, 2011, pp. 607-608; Economist, 2008, p. 12; Smaller, 2012, p. 6; Morton, 2013), the additional supply provided by Chinese firms can have the side effect of lowering the global market price of a commodity, ultimately reducing import and input prices for industries in China. And in times of crisis or shortages, Chinese companies, and especially SOEs, could still give privilege to China as a destination for shipment of these resources (Economist, 2010a, 2010b; Ma and Andrews-Speed, 2006, p. 19).

For a long time, China's model of economic growth relied on large-scale investments in industry and infrastructure construction, requiring considerable amounts of raw materials. But despite natural and energy resources in China being plentiful at an aggregate level, owing to the enormous size of the country's territory, there is a shortage of most resources in per capita terms, given China's huge population of more than 1.3 billion people. Overall, China's natural resource endowment is below the world average. Rapid economic growth over the last few decades, averaging 10 per cent per year from 1978 to 2010, has further exacerbated these shortages: domestic natural resources are not sufficient to meet China's rising energy needs and supply Chinese industries. Power consumption has been strongly tied to economic growth in China, and equally rose by 10 per cent per year between 1991 and 2007 (Liu and Zhang, 2012, p. 4). During the past decade, the share of heavy industry, such as steel and cement production, in the Chinese economy has grown continuously (Yang, 2012). Increasing amounts of raw material inputs are required to serve the rising needs of Chinese households, including strong growth in energy consumption, and to maintain China's high level of exports.

China lacks sufficient capacity in important sources of energy, especially oil and gas (Smil, 2000, p. 212). Its own oil resources are being depleted and have continued to fall behind soaring demand, forcing greater reliance on imports (Ma and Andrews-Speed, 2006). In the period from 1990 to 2010, China's self-sufficiency in oil declined from 119 per cent to 45 per cent (Xing, 2012, p. 8), and oil security became a priority concern for the government (Smil, 2004, p. 20). Accordingly, the Chinese government has viewed OFDI as important for China's energy security (Yang, 2012).

Moreover, industrialization-induced environmental degradation (air, water and land pollution) has amplified shortages of water and land. The constant scarcity of land in China (Ash, 1996, p. 77), especially in view of China's enormous population, has kept the issue of food security on the agenda, even if it is not an imminent threat. It was just a bit more than 50 years ago that China experienced the most severe famine in human history, and its government maintained a policy of 90 per cent self-sufficiency in grain until recently. The pursuit of agricultural land and water by Chinese companies abroad must be viewed in this context.

Chinese OFDI in resources exploration, extraction and production enhances accessibility to energy resources, metals and agricultural products, with some of these commodities, as well as capital goods, being shipped directly back to China. This process enhances capacities in China to produce, consume, construct and operate, in both stable and unstable times. However, the degree to which China has actually improved its resource security and benefited from such “capacity returns” remains an issue requiring further exploration in future research.

3.4. Macroeconomic effects from OFDI

Finally, Chinese OFDI has had an aggregate impact on industrial production, exports and employment in China. Chinese investments in advanced economies have opened up additional markets for goods produced at low cost in China (Knoerich, 2012), and many Chinese efficiency- or resource-seeking investments in Africa, Southeast Asia and other low-cost locations require the procurement of intermediary products and parts produced in China. This export-promoting function of Chinese OFDI has existed for many years and for a long time received explicit encouragement from the Chinese government (Wong and Chan, 2003, p. 281). It has been tied in with a growing need to expand business activity beyond China, owing to increasing domestic competition from foreign investors, oversaturation of domestic markets and excess production capacities (Wu, 2005, p. 7; Deng, 2004, pp. 11-12; Keller and Zhou, 2003, p. 11; Zhan, 1995, p. 93). An UNCTAD survey found that 40 per cent of Chinese companies considered maximizing domestic manufacturing capacity as an important reason for expanding abroad, while 36 per cent highlighted circumventing trade barriers (UNCTAD, 2006, p. 156). Accordingly, Huang and Wang found a positive association between Chinese exports to a particular country and OFDI in that country (Huang and Wang, 2011, p. 18). Zou also finds a positive impact of OFDI on production in China (Zou, 2008).

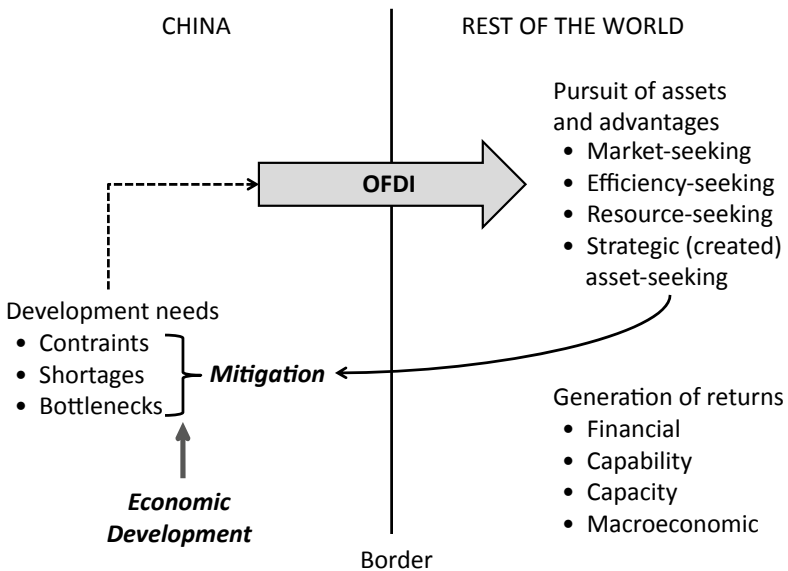
However, the impact can also be negative, if Chinese companies expand production in other developing countries at the expense of production in China. With labour and other costs of production rising rapidly in China and with the gradual appreciation of the Renminbi, some Chinese companies have begun to offshore (parts of) their production activities to lower-cost locations, especially in Asia and

Africa. But this is only a recent trend and not yet of great macroeconomic significance. Even if such offshoring were to take place at a larger scale, the consequences would not necessarily be severe, as OFDI could still expand the production of intermediary products in China for export to overseas production locations. Such OFDI would also induce companies in China to upgrade their production activities away from low-cost, low-skill manufacturing. Again, the net effects are unknown and remain to be determined in future research.

4. Contribution to development

On the basis of the findings described here, it is now possible to construct an analytical framework summarizing the mechanisms through which OFDI has contributed to economic development in China (figure 4). When conducting OFDI, Chinese firms have pursued a variety of assets and advantages that are accessible abroad but often either unavailable or not sufficiently available in China. Successful access to these assets and advantages overseas, and their transfer back to China – whether directly or indirectly – has generated financial gains, capability improvements, capacity enhancements and favourable macroeconomic

Figure 4. OFDI and Chinese economic development: An analytical framework



effects. These financial, capability, capacity and macroeconomic returns have in turn supported economic development in China, especially if they addressed any of China's prevalent development challenges, such as financing needs, innovation bottlenecks, resource shortages or export constraints. Some returns are more effective than others in fulfilling this development function.

Although these findings are encouraging, one may question the extent to which OFDI makes a significant difference to economic development worth more intensive consideration by researchers and policymakers. There are several constraints in addition to those already mentioned in the preceding section. Most notably, assets and advantages have to be available and accessible overseas – for example, the appropriate know-how or resources may not be available, foreign partner firms may not be willing to offer the necessary degree of cooperation, or foreign governments may prevent the pursuit of an asset or advantage if it is against the national interest of the host country. This last constraint has at times been a particular challenge to Chinese firms and could be seen as a foreign reaction to some of China's OFDI having been induced by considerations of industrial policy. Returns also have to be realizable – for example, it is not straightforward to transfer acquired know-how back to the home economy and utilize it effectively there, especially as Chinese firms may lack the necessary absorptive capacity. Similarly, the extent to which Chinese natural resources companies, especially during times of crisis, are able to give privilege to China for the shipping of raw materials is unknown. There is also the possibility that China's interests are not aligned with those of its enterprises; for example, when Chinese firms offshore productive activities away from China or when they use OFDI to escape the institutions of the home economy (Sutherland, 2010, pp. 19-20; Witt and Lewin, 2007).

The question then is this: How important is OFDI in view of the other channels of economic interaction with the rest of the world shown in figure 2 – trade, inward FDI and migration? China has used each of these channels to support its economic development, yet the degree of their contribution has been repeatedly questioned. Here also, the interests of the companies and individuals involved may not be aligned with those of China as a country, economy and developmental state, and there have been a number of other limitations.

For example, China has for many decades relied on imports to support its economic development. The country has a long history of importing capital goods, dating back at least to the cooperation with the Soviet Union during the first five-year plan in the mid-1950s. A decade after the Sino-Soviet split in 1960, Western countries and Japan became the main sources of technology imports for the Chinese economy. Not only did imports of capital goods such as machinery and equipment support industrial modernization, but imported technologies were also reverse engineered. Such practices have continued to the present day, albeit with mixed success, given the difficulties inherent in replicating technologies and the limitations in availability of advanced technologies on the open market.

China's development has also benefited substantially from the country's emergence as an export platform. Chinese companies have over the years generated massive export earnings and a considerable trade surplus by manufacturing low-cost and labour-intensive products for the world market. They have also benefited from manufacturing and assembling high-tech products on behalf of leading MNEs. By serving as original equipment manufacturers (OEMs) for these MNEs, Chinese firms have managed to acquire know-how and technological skills that helped them upgrade their production activities. However, MNEs tend to outsource production only of their less technologically advanced components, which puts strong limits on the overall transfer of skills to Chinese companies. Moreover, operating as an OEM helps upgrade capabilities only at early stages of technological development, and learning opportunities cease once a certain technological level has been reached.

Beyond the financial gains from increased capital inflows, China has also reaped technological and other benefits from *inward* FDI in its economy (Berthélemy and Démurger, 2000; Tseng and Zebregs, 2002; Liu and Wang, 2003). The country benefited from various types of spillover effects, technology transfer and labour turnover. But evidence about the extent of such benefits remains inconclusive (Sigurdson, 2005, pp. 97-98; Fan, 2003, p. 50; Lardy, 1995; Shan *et al.*, 1999; Lo, 2006; Taylor, 2002, p. 214; Young and Lan, 1997). Technology spillovers in China could have been disappointing, and FDI might have been concentrated in low-skill areas. Foreign firms have avoided employing their most sophisticated technologies in China (Raskin and Lindenbaum, 2004,

p. 7). They have protected market information and avoided sharing technology in joint ventures (Wang, 2002, p. 203). Moreover, before the late 1990s, export-processing activities in China undertaken by companies from the neighbouring economies of “Greater China” (e.g. Taiwanese investors on the mainland) were unlikely to have induced substantial spillovers (Naughton, 2007, p. 368; Knoerich, 2015, p. 99). Obstacles encountered in adapting foreign technologies to match local specifications add to these limitations (Sigurdson, 2005, p. 98).

Migration to other countries also transferred money to China, when Chinese migrants sent remittances home to support their family members. Know-how was also transferred through the education that Chinese migrants received overseas and through transnational networks created by the Chinese global diaspora (Saxenian, 2005). Returning migrants have reportedly made many positive contributions to the Chinese economy through entrepreneurship, know-how transfer and inward FDI (World Bank, 2008, p. 125; Filatotchev *et al.*, 2009; Wright *et al.*, 2008). But at the same time, migration involves an outward transfer of skills (World Bank, 2008, p. 122) – the so-called “brain drain”, which has been a serious problem for China (Luo, 2003, p. 293; World Bank, 2008, p. 124; Naughton, 2007, p. 363). According to one statistic, 1.2 million Chinese studied abroad between 1978 and 2007, with only 319,700 returnees (Wang, 2008). China has also not received many immigrants who could contribute to the development of the Chinese economy.

In sum, despite the support to China’s economic development offered by trade, inward FDI and migration, each of these channels of interaction with the rest of the world has confronted its own set of limitations. The question is then whether Chinese enterprises can overcome some of these limitations by expanding their own global operations, thereby generating returns from the pursuit of assets and advantages overseas. Or, viewed differently, if the development contribution of trade, inward FDI and migration has its own limitations, we should not expect the development contribution of OFDI to be without constraints.

Rather, the analysis provided in this study suggests that OFDI has been both complementary and supplementary to the other channels of China’s economic interaction with the rest of the world.

Its complementary function is evident in the potential of OFDI to bring in additional finances, to further enhance domestic technological and other know-how, to secure much needed foreign imports and to support the expansion of exports. Chinese firms employ overseas Chinese in their foreign subsidiaries, and in occasional circumstances – for example, when Chinese firms investing abroad collaborate with host country firms that wish to invest in China – OFDI can even foster new FDI projects in China.

OFDI has had a supplementary function because it can contribute to development of the home economy in unique ways not addressed by the other channels of economic interaction with the rest of the world. It facilitates access to assets and advantages that are available abroad but not brought to China through the other channels, such as brands, particular kinds of advanced know-how, specific capital goods and new markets that would be hard to penetrate without an investment. OFDI has enabled Chinese MNEs to access technologies and know-how that were unavailable in the open market and therefore not accessible through technology imports, that were not brought to China by foreign firms and that were internal to the foreign firms involved, thus barring exchanges of people (e.g. migrants) and talent from yielding the same results. Firms such as Haier, TCL and Lenovo have benefited from this aspect of OFDI (Deng, 2008). To some degree, OFDI has helped overcome the reliance on foreign companies to bring the appropriate know-how to China through inward FDI, licensing or the OEM track, as it has allowed the Chinese firms themselves to assume a more proactive role by venturing abroad and targeting those assets and advantages they required or desired. Some of the know-how obtained through OFDI is more tacit and more advanced, and therefore of greater value to the firms acquiring it and, by extension, to the Chinese economy. Finally, it appears that OFDI is a unique way to make access to natural resources abroad more secure and stable than is possible through pure market mechanisms such as trade.

These complementary and supplementary roles of OFDI may be what the Chinese government has tried to nurture through its targeted OFDI policies. In the past, efforts in China to foster technological change have included purchases of foreign technologies, deals with foreign firms to allow them market entry in exchange for technological know-how, and facilitation of FDI into China (Naughton, 2007, pp. 357-

360). In Naughton's words, "there has been a restless ongoing search for institutions and policies that can effectively support China's ongoing drive to become a technology power" (Naughton, 2007, p. 361). OFDI has been one additional such component in the government's attempt to achieve economic and technological transformation.

5. Conclusions

At present, research is still at the beginning of analysing the contribution OFDI can make to development in the world's less advanced home countries. Taking Chinese OFDI as a case study, this study provided a first comprehensive investigation into the mechanisms through which OFDI by Chinese MNEs has provided benefits that support the development of the Chinese economy. The study finds that, at least in the Chinese case, OFDI has had its distinctive uses and advantages in promoting development, growth and catch-up in China, although many uncertainties remain about the magnitude and actual importance of this development contribution. More research on all of the dimensions found in the analytical framework emerging from this study is of urgent necessity.

Thus, the approach by the Chinese government to promote OFDI through specific development-oriented investment policies appears prudent. Chinese policy has used targeted measures to promote the pursuit of desired assets and advantages abroad that could yield favourable financial, capability, capacity and macroeconomic returns for the Chinese economy. This is in line with China's approach to industrial policy, observable in other areas of the economy, and its developmental state more generally.

Given this study's encouraging findings for the case of China, there is an urgent need for similar examinations of other developing countries. Comparable findings should be expected, especially for those emerging economies that have experienced larger amounts of OFDI (whereas a specific development contribution may not be as observable in the advanced economies, which have already passed through the stages of economic development). The contribution of OFDI to economic development may not be as important as that of inward FDI, given that many least developed countries cannot meet the basic requirement for OFDI: the availability of capital. But the role of

OFDI in supporting development of the home economy requires much more in-depth consideration than it has received to date, especially as the exact nature and magnitude of the impact of *inward* FDI, trade and international migration on economic development also remains an issue of scholarly debate even today. This study has found that OFDI can assume both a complementary and a supplementary role in relation to these other channels of economic interaction with the rest of the world.

The analytical framework emerging from this study will be useful for the examination of other countries. In addition, more detailed examination of each of the individual returns would be of value. Research should also consider in greater depth how the economic motives of firms may differ from the economic and social needs of the Chinese people and its government, and how this may affect the development contribution of OFDI. This is an issue covered only briefly in this study owing to limitations of space and the focus on carrying out an initial investigation of the development contribution rather than weighing the benefits of enterprise activities against any associated costs. In fact, this study followed the approach of many studies on inward FDI and economic development, to focus on the development contribution while acknowledging that there are also negative effects.

This research has important policy implications, as it might redefine the role of government in OFDI policy. Governments might consider the implementation of more targeted, development-oriented OFDI policies similar to the promotion and incentives offered to inward FDI in an economy. The analytical framework of this study can help governments identify the right policies, which should focus on maximizing those returns from OFDI that contribute the most to development of the home economy. In the case of China, government support has been useful, although it has also triggered some resistance from international actors who are concerned about the level of involvement by the State in China's OFDI activities (Antkiewicz and Whalley, 2006). It is important to find the right balance in this area – OFDI should be supported in the interest of economic development, whilst respecting the rules of the international market and global competition. In short, there is no doubt that governments in developing countries would benefit from a better understanding of how OFDI can be harnessed to support economic development.

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