

Contents lists available at [ScienceDirect](#)

China Economic Review



Firm heterogeneity and location choice of Chinese firms in Latin America and the Caribbean: Corporate ownership, strategic motives and host country institutions[☆]

Yue LIN^{*}

CEAO, UAM, Spain

Modulo III-215B, Centro de Estudios de Asia Oriental, Ciudad Universitaria de Cantoblanco, Calle Francisco Tomás y Valiente, 1, 28049 Madrid, Spain

ARTICLE INFO

Article history:

Received 9 July 2014

Received in revised form 2 March 2015

Accepted 2 March 2015

Available online xxxx

JEL classifications:

F21

F23

O53

O54

Keywords:

China

Latin America

Foreign direct investment

Corporate ownership

ABSTRACT

China's ODI in Latin America and the Caribbean is entering into the second phase with diversification of economic actors and industries of investment. This paper extracts the approved projects by the Chinese Ministry of Commerce from its online database between 2003–2012, and fits a random effect negative binomial regression model. Our statistical estimates on the one hand confirm some of the previous findings on the disparity between Chinese public and private investors in their ODI motivations and perception of risks, on the other hand find that host country institutions are not purely ownership specific, but also contingent on industries and activities in which firms tend to invest. The direction of institutional effect is not consistent across sectors and firm types. The revealed complexity of China's ODI in Latin America and the Caribbean suggests a multi-level framework in further research, which treats Chinese transnational firms as endogenously heterogeneous beyond the dichotomous categorisation according to corporate ownership.

© 2015 Elsevier Inc. All rights reserved.

1. Introduction

Despite of geographical remoteness, the economic relationship between China and Latin America and the Caribbean (LAC) has entered into the second phase, from that led by commercial exchanges to a more profound connection bounded by the capital flows. China's outward direct investment (ODI) in the region has increased tenfold in less than ten years, reaching more than US\$10 billion in 2010 and 2011. Even adjusted by its concentration in the Cayman Islands and British Virgin Islands, according to the estimation of ECLAC (2011), China was still the third largest investor in terms of ODI flows in the region, behind the United States and the Netherlands in 2010. However, the increasing visibility of Chinese firms in LAC received more doubts (if not critics) than applauds.

For most external observers, China's ODI in LAC is qualitatively specific because of the dominant presence of Chinese state-owned enterprises (SOE), and the high concentration in extractive industries.¹ China's ODI is thus presented as no more than an illustrating case of China's grand external strategy with its Southern partners, seeking to secure its resources sources (Peters, 2013). This escalates

[☆] I thank Kefei You and Guglielmo Maria Caporale (Guest Editors) and two reviewers for excellent guidance, and very helpful comments. Financial support from the Spanish National Research Project No. FFI2011-25897 is gratefully acknowledged. All views and errors are of the author and not those of the sponsor.

^{*} Modulo III-215B, Centro de Estudios de Asia Oriental, Ciudad Universitaria de Cantoblanco, Calle Francisco Tomás y Valiente, 1, 28049 Madrid, Spain. Tel.: +34 91 497 66 95; fax: +34 91 497 52 78.

E-mail address: yue.lin@uam.es.

¹ 90% of China's ODI in 2010 were in extractive activities (ECLAC, 2011).

the concerns about “deindustrialization” and “re-primarization” of regional economies, already triggered by bilateral commercial imbalances (Gallagher & Porzecanski, 2008; Jenkins & Barbosa, 2012; Jenkins, Peters, & Moreira, 2008; Mesquita Moreira, 2007). More critically, if strong and assertive home government speeds up the internationalization of Chinese SOEs, geopolitical motive at least complements economic rationale in explaining their expansion in LAC (Tulder, 2010). As a form of diplomacy, China's ODI in LAC is characterized by a relatively high concentration in countries plagued by limited civilian liberty and political instability. Therefore, China's ODI is parallel to that originating from industrialized countries, which have increasingly targeted service and manufacturing sectors and rewarded the countries with better local governance (Peters, 2013). More tolerant of risk and less demanding of the legal system, China's ODI implies greater political challenges in LAC, where efficient institution building is deemed to be essential for future development.

Nevertheless, the current political discourse on China's ODI in LAC tends to identify Chinese SOEs as representing China, and overlooks thousands of privately-owned enterprises (POE) also active in the region. By 2013, among 183 verified greenfield projects, 76 projects were carried by POEs with an estimated capital investment equivalent to US\$10 billion, accounting for almost one third of total investment engaged.² Under such circumstance, any attempt to infer the existence of a consistent and coherent national strategy guiding China's ODI in LAC bears a special burden. It is required to answer whether the internationalization strategy of Chinese POEs when entering into LAC is configured in the same manner as their SOE counterparts by the political preference and national interests, and to what extent their ODI patterns are converged to a high-risk and aggressive one.

Given the importance of these questions, relevant empirical studies are surprisingly scant. Most of the previous works are designed to test Dunning's eclectic paradigm (Dunning, 1973; 1980) by using the aggregate value of China's ODI as the dependent variable (Buckley et al., 2007; Cheng & Ma, 2010; Cheung & Qian, 2009; Huang & Wang, 2011; Hurst, 2011; Kang & Jiang, 2012; Kolstad & Wiig, 2012; Sanfilippo, 2010). However, ODI data at the aggregate level, as acknowledged by Buckley, Cross, Tan, Xin, and Voss (2008), makes analytical techniques, such as regression analysis, an imperfect method working by inference about the strategic motives at firm level. Moreover, because of potential extreme values that characterize the capital-intensive extractive projects, aggregate ODI data suffer from the skewed data structure that would affect adversely the model fit and estimations (Ramamamy, Yeung, & Laforet, 2012). Finally, without sufficient disaggregation of data input, those studies are unable to distinguish the investment patterns between firms of distinct ownership structure.

Most recently, some researchers recourse to alternative data sources, such as survey results (Duanmu, 2012), financial reports of listed companies (Ramamamy et al., 2012), and commercial database (Amighini, Rabellotti, & Sanfilippo, 2013) to measure the ownership effects on location choices of Chinese firms investing abroad. This article contributes firstly to this still limited empirical stream by exploring a publicly accessible database maintained by China's Ministry of Commerce (MOFCOM), which keeps raw information about all approved ODI projects. To our best knowledge, it is the first empirical work of this kind concerning China's ODI in LAC. MOFCOM's data allow us not only to disaggregate China's ODI projects in the region by ownership of investors but also by internationalization strategic motives. The second contribution is to extend the current debate on ownership differentiation into a broader framework on firm heterogeneity. To do this, we take into account strategic motives of ODI captured by the industries and activities Chinese firms tend to invest. We introduce simple industry dummies into the standard model in order to evaluate more precisely how the interaction between corporate ownership and host country institutions could be moderated by strategic intents of globalization. We argue that corporate ownership and strategic intent of globalization are two related but different dimensions of firm heterogeneity. Even if ownership remains an important differentiator of Chinese firms, within each group of firms defined by their ownership structure, there are differences in the internationalization strategies at firm level that may alter the magnitude and direction of institutional effects interacted with investors' ownership structure. In other words, we believe that host country institutional effect on the location choice of Chinese firms is not solely ownership specific, but also contingent on firms' motivation of internalization. In order to understand better the complexity of investment behavior of Chinese firms, we suggest a multi-level analytical framework that integrates institution-based view, resource-based view and industry-based view.

The following part of the paper is organized in four sections. Section 2 reviews the theoretical arguments and presents our research hypotheses. Section 3 provides a detailed description of dataset and methodology, and Section 4 discusses the empirical findings, which lead to the concluding remarks presented in Section 5.

2. Theoretical arguments and hypothesis development

Extant literature well documents the unique characteristics of Chinese multinationals, seemingly undaunted by the risks that Western firms have associated with internationalization. Two strands of arguments are provided. First of all, Chinese firms are described as risk lovers because of the active role of home government. Strong and assertive home government could speed up the internationalization strategies of dominant national firms, especially when they are state-owned companies. Tulder (2010) thus introduces a mesoeconomic layer of analysis of BRIC³ companies, focusing mainly on the relationship with the home country government, and suggests a renewal of Raymond Vernon's obsolescing bargain argument in the way that it is rather the BRIC governments instead of companies themselves that are prepared to bargain directly with host country governments. Geopolitical motives of the home governments were obvious behind ODI from China and Russia in the resources sector. In the extreme case, as Zweig and Jianhai (2005) have claimed, “Beijing's resource-based foreign policy has little room for morality”. While the majority of

² www.fdimarkets.com, consulted June 9th of 2014.

³ Created by Jim O'Neill in 2001, BRIC is a grouping acronym that refers to the countries of Brazil, Russia, India and China, which are all deemed to be at a similar stage of newly advanced economic development.

surplus in natural resources in general and oil in particular are located in high political risk areas, China as latecomer has gone into business with states avoided by other countries, such as Sudan, Chad, Angola, Myanmar, Iran and Venezuela (Gao, 2009). China's ODI in LAC, one major natural resources exporting region, is thus expected to be not risk averse. Under this approach, Chinese firms' tolerance of political risk is explained by the substitution of firms' own economic rationale by Beijing's geopolitical alliance with certain periphery states and national strategy to secure the resources sources. While the economic return of investment is not the main objective, host country institution as well as investment risk becomes irrelevant.

The second strand of arguments emphasize home country embedded advantages that Chinese firms can derive from the experience of operating at home and coping with home country conditions (Buckley et al., 2007; Buckley et al., 2008; Voss, Buckley, & Cross, 2009). A company's experience at home with political and regulatory processes may influence its tolerance of political risk when investing abroad. Having developed in riskier political and economic environments, Chinese firms may gain experience, familiarity and expertise to maneuver the business in a weak institutional environment by western standards (Buckley et al., 2007; Buckley et al., 2008; Quer, Claver, & Rienda, 2011), and depend on the global ethnic and family networks to cope with uncertainties (Bräutigam, 2003; Erdener & Shapiro, 2005). Their notions of risk can thus be very different from those of developed countries' companies. Chinese firms, as well as other emerging market multinationals, can leverage their capabilities developed at home markets as competitive advantages in other developing countries with similar institutional and political environments. In other words, it is not the institution quality *per se* of a focal country, but rather the institutional distance between home and host country that matters when firms invest abroad. The greater the level of political risk in the home country, the less sensitive to political risk they tend to be. Therefore, Chinese firms, even if they are not vehicles of ODI projects steered by their home country government, could still turn out to be less risk averse by not avoiding the economies where codified market-enhancing institutions are weak. The underlying reason could be the different understanding and calculation of investment risks because of the existence of various risk-safeguard mechanisms embedded in home country institutions. However, as we will argue, such mechanisms are not impartial to all economic entities. Firm specific capabilities to mobilize and leverage home based institutional resources would largely determine their responses to host country institutional environments as they globalize.

2.1. Ownership structure and location choice

The Chinese industrial sector used to be dominated by SOEs. After the unsuccessful internal managerial improvement in the 1980s, SOE reform in the 1990s broke the rigid capital structure. The shareholding system was used to privatize completely a lot of small-scale SOEs, while large-scale SOEs were reorganized into limited-liability joint stock companies. A selected group of them were listed on domestic stock exchanges. This “corporatization” of SOEs blurs the boundary between the public and private ownership, which used to be clearly cut when the association of public and private capital was nonexistent. For the purpose of our study, we define SOEs as those enterprises owned and controlled by the central or the local government. This being said, SOEs in our paper include not only the officially categorized state enterprises (*guoyou qiye*), limited liability companies with full state investment (*guoyou duzi youxian zeren gongsi*), and state-controlled joint stock companies (*guoyou konggu gufen youxian gongsi*), but also those joint stock companies listed on the stock markets whose ultimate controlling shareholders are SOE groups.⁴ It is worth to be noted that POEs, on the other hand, have a broader meaning including all forms of enterprises other than that owned and controlled by the state capital.

Despite of the flourish of firms with mixed ownership, we suggest that the ownership structure remains an important differentiator of Chinese firms in terms of sector concentration, firm size and capital intensity due to the domestic market imperfection. The restructuring of SOEs is accompanied by the revision of Marxist doctrine in order to establish a “socialist market economy”. The socialist nature of Chinese market economy means that the State, while retreating from the mature and competitive sectors, insists on maintaining a high command hand on certain strategic sectors. This generates a dual industrial structure, where POEs play a key role in competitive sectors, such as labor-intensive manufacturing industries, while SOEs are concentrated in heavy industries, resources sectors, machinery and infrastructure. Taking advantage of implicit government protection of their monopolistic and oligopolistic positions, SOEs outmatch POEs by average size. According to the Chinese Statistic Yearbook of 2013, at the end of 2012, SOEs represent merely 5% of above-scale industrial enterprises,⁵ but control more than 40% of the industrial assets. The economic power accrued in certain large SOE groups allows them to exert noticeable influence on China's policy formation, such as China's ODI policy.

China's ODI regime, through the reform in the last decade, has repositioned the role of central authorities from the one that directly intervenes in the business decisions to that which influences and directs the market through rules and incentives (Luo, Xue, & Han, 2010). Nevertheless, such a pro-market transformation, due to various institutional constraints, may finally turn out to be a pseudo-liberalization captured by corporate interests of powerful SOEs (Liou, 2014), and generates discriminatory policy tools against certain industries and ownership forms (Buckley et al., 2007; Voss et al., 2009). In the first place, the political discrimination is manifested in the unbalanced support toward energy and mining industry, which favors rather SOEs than POEs. When the Chinese government pronounced in 2001 the “going out” policy, all the industries that can promote exports, secure raw materials, and accede to technology were encouraged. Nevertheless, most of the following political measures have been made to promote ODI in natural

⁴ One main difficulty to estimate correctly the presence of Chinese SOEs is the existence of a large number of joint stock companies that are controlled indirectly by the public authorities through state holding companies (Huang, 2008). According to the estimation of Liu and Sun (2003), if the official data showed that only 8.5% of the listed companies on Shanghai stock markets were controlled directly by the State, the real weight of the state controlled companies was 84.1% in 2001.

⁵ Since 2011, above-scale industrial enterprises include those industrial enterprises whose annual revenue from principal business is over 20 million yuan.

resources sector where large SOEs enjoy the *de facto* monopoly in the domestic market⁶ (Zhang, 2010). In such context, political support to ODI of Chinese POEs remains symbolic. Even though nowadays there exists a “Small–Medium Enterprises International Market Development Fund”, the relevant decrees set out a tariff of support as a percentage of the total sum to be invested, and can hardly amount to huge financial sums (Gu, 2011). In the second place, the political discrimination is also reflected in the regulation of China's ODI. While all the Chinese firms (excluding those in financial sectors) have to go through a two-stage process,⁷ The NDRC document published in 2004⁸ and revised in 2011⁹ stipulated that resources projects valued below US\$300 million and non-resources projects below US\$100 million were separated into two types: those for centrally-affiliated SOEs would require no approval but only file the projects at NDRC, while local companies, including private ones, would require approval of the provincial offices of NDRC.¹⁰ Moreover, while the approval process was indeed institutionalized, it ironically reduces the free space of Chinese POEs, which used to be good at maneuvering China's fragmented bureaucracy to get approval for their investment projects through informal channels (Ye, 2014).

China's current ODI regime thus suggests a weaker China State than we would imagine (Pearson, 2005; Yeo, 2009). Both ODI incentive mechanism and its regulation regime are not totally independent from the influence of large SOE groups, which have successfully created a favorable domestic political environment for their own interests in acquiring strategic assets overseas, especially scarce natural resources when investing in LAC, to enhance their monopoly positions at home (Huang & Wang, 2011; Song, Yang, & Zhang, 2011). In the meantime, Chinese POEs, overly concentrated in highly competitive industries and left alone on their limited internal resources, tend to be focused on particular industrial sectors and forced to explore new markets abroad in order to survive the fierce competition and to achieve competitiveness in the domestic markets (Boisot & Meyer, 2008; Song, 2011; Voss et al., 2009).

Therefore, we hypothesize:

H1. Chinese SOEs are more likely natural resource-seeking driven and tend to be attracted to resource rich countries when investing in LAC.

H2. Chinese POEs are more likely market-seeking driven and tend to be attracted to countries with large market size when investing in LAC.

China's ODI policy exemplifies the gradual reform process characterized by regulated and targeted piecemeal solutions rather than the systematic removal of institutional impediments to construct a level playing ground. Both institutional hindrance and government promotional policies coexist. Under such circumstances, the foreign expansion decision at firm level should be viewed as a strategic reaction to dual yet disparate institutional forces (Luo et al., 2010), and as Voss et al. (2009) suggest, that relational access to governmental bodies that can grant preferential treatment remains an important asset to companies. Although political connection is not necessarily determined by corporate ownership,¹¹ SOEs, compared with private ones, do have more capabilities to draw benefits from yet opaque and unbalanced business environments. This difference in relational asset, in turn, may alter the perception and calculation of investment risks between firms when going abroad.

SOEs can be more tolerant towards risks for three reasons. In the first place, as Morck, Yeung, and Zhao (2008) and Buckley et al. (2008) have argued, the privileged access to financial resources, such as cheap bank loans, enhances SOEs' soft budget constraints and exempts them from commitment to the public shareholders. In the second place, SOEs are ready to take advantage of the risk-safeguard mechanism established through government help, such as political risk insurance provided by Sinosur (MIGA, 2010). Finally, the corporate governance determined by ownership structure may also explain the bold advance of SOEs in their overseas expansion. As Morck et al. (2008) have emphasized, while most managers of SOEs are appointed through the nomenclature

⁶ For example, in 2003 the Ministry of Commerce and the Ministry of National Resources created the “specific funds for discovery and exploration of foreign mineral resources”. In December 2005, the Ministry of Finance and the Ministry of Commerce published the “Regulation on administration of specific funds for foreign economic and technical cooperation”, which identified the ODI in resource and energy sector as the main beneficiary of annual specific funds. Ever since 2008, the encouragement and the support of ODI in natural resources sector are even enhanced. In 2008, the National Energy Administration was created. In its development plan 2009–2011, the newly created administration advocated to establish the development funds for discovery and exploration of foreign energy sources using the national foreign reserves, to provide banking credits with favorable terms and to raise the proportion of fiscal funds in the related projects. Such political suggestions were later expanded to other ODI projects in steel and nonferrous metal industries, when the State Council published in 2009 “Adjustment and development plan of steel industry” and “Adjustment and development plan of nonferrous metal industry”.

⁷ Chinese SOEs as well as POEs, before applying to SAFE to use foreign exchange earnings abroad, have to firstly apply to the National Development and Reform Commission (NDRC) and Ministry of Commerce (MOFCOM) for their ODI approval. Specifically, NDRC has the authority to approve overseas investment proposals, while the MOFCOM has the authority to approve proposals to set up companies abroad. Nevertheless, the formal decrees have been biased against private ODI.

⁸ “Interim Measures for the Administration of Examination and Approval of the Overseas Investment Projects” http://www.sdpc.gov.cn/fzgggz/wzly/zcfg/wzzcjwztz/200507/t20050719_37411.html.

⁹ “Notice of the National Development and Reform Commission on the Decentralization of Approval Authority of Overseas Investment Projects” <http://www.mofcom.gov.cn/aarticle/b/g/201109/20110907760681.html>.

¹⁰ On April 8, 2014, the NDRC announced the “Administrative Measures for Approval and Recordation Filing of Overseas Investment Projects”, which replaces the decades-old approval system with a system that requires a mere “recordation filing”. Specifically, all ODI projects (including those carried by private companies) involving investment of less than US\$1 billion, other than projects involving designated “sensitive regions” or “sensitive industries”, are subject to a filing procedure with the NDRC at the central level. For ODI projects involving investment of less than US\$300 million, filing with the competent provincial government agency is generally sufficient.

¹¹ According to Dickson (2007), the China Communist Party and private entrepreneurs have approached each other for years. The CCP is increasingly integrating itself with the private sector, both by co-opting entrepreneurs into the Party and encouraging current Party members to go into business. China's capitalist elites and communist officials share interests in maintaining the political status quo and creating a form of “crony communism”.

system, they have little individual interest in their firm's long-term economic performance. Higher risks may be taken to pursue personal agendas to advance their career in state bureaucracies or simply advance their personal wealth.

In contrast, the nature of government and private sector relations makes it difficult for private companies to avail themselves of “going out” policy. Gu (2009), during his fieldwork in Africa, finds that private firms are largely bereft of practical government support and face a significant gap between policy formulation and policy implementation. In such circumstances, Chinese private firms, majorly small and medium ones, have less resources and will tend to be more cautious in their overseas expansion. More critically, a burdensome legal and regulatory framework at home, while conferring an advantage on Chinese POEs — at least in other emerging markets, may also push them out to conduct, in the words of Dunning and Lundan (2008), “escape investment”. In most cases, they tend to raise capital offshore, to accede to better legal and accounting institutions offered by host countries, and to circumvent other domestic institutional constraints on their activities (Ning & Sutherland, 2012; Sutherland & Ning, 2011). In fact, if “institutional arbitrage”, proposed by Boisot and Meyer (2008), is one of the principle motives for Chinese private investors to go abroad, then they would be attracted to where more efficient institutions are found. We then hypothesize:

H3. Chinese SOEs are less risk averse and tend to be attracted to countries with weak institutions when investing in LAC.

H4. Chinese POEs are more risk averse and tend to be attracted to countries with strong institutions when investing in LAC.

2.2. Strategic motives and location choice

By emphasizing firms' differentiation in ownership structure, we do not suggest a rigid dichotomous approach, which risks giving the impression, falsely, of two distinct but homogenous groups of firms. On the contrary, we argue that even within each group defined by the corporate ownership, there are differences in strategic motives of outward investors, and the ownership effect on location choice could be moderated by the strategic consideration. In fact, if any support for the above hypotheses are to be found, it raises immediately the following questions: to what extent the institutional effect is sector specific? And to what extent is it contingent on corporate ownership *per se*? According to Dunning (1980, 1993), there is good reason to believe that firms with different strategic intent of globalization, be it natural resource-seeking, market-seeking, efficiency-seeking or strategic asset-seeking, will look for specific location advantages. This can be tested if we include the second dimension of firm heterogeneity into our empirical specification.

We suggest that Chinese firms' strategic motives of ODI can be reflected in the activity of their overseas subsidiaries. By disaggregating China's ODI projects by types of activity, we introduce simply industry dummies into the standard model, and expect firms sharing the same ODI motivation to respond similarly to a multitude of host country determinants, including the institutional environment. Two kinds of subsidiaries are of our specific interests concerning China's ODI in LAC: extractive and trading subsidiaries.

Investment in extractive subsidiary is mainly pulled by supply side factor of a host country, namely the natural resource endowment. However, investing in resource rich developing countries has to deal with the resource curse problem, which is characterized by the association between resource abundance and low economic growth, onset of civil war and low levels of democracy.¹² Although the causal direction between resource abundance and political risk is arguably uncertain (Rosser, 2006), it suffices to suggest a higher probability that extractive ODI would end in the countries where poor institutions prevail. Therefore, host country institutions, as a pulling factor of ODI, could matter very differently for this type of ODI. For instance, Asiedu and Lien (2011), for 112 developing countries over 1982–2007, find that in countries with high natural resource shares in exports democracy actually reduces FDI. This phenomenon, according to Kolstad and Wiig (2009), could be explained by rent-seeking behavior of political actors as well as social actors, including foreign investors, enticed by the lack of impartiality enhancing institutions. Without sufficient and adequate institutional check, political elites and foreign investors would share the similar interests in establishing the patronage linkage in order to seize the large and appropriable resource rents (Mehlum, Moene, & Torvik, 2006; Torvik, 2002). Due to the bilateral monopoly that governs the relations between foreign investors and host countries (Buckley, 2008), foreign investors could even have specific advantages in negotiating with countries plagued by political instability and low levels of democracy, which are often ready to grant an investment agreement that favors generously the foreigner willing to invest. As a consequence, the poor institution quality is not only less problematic to draw extractive ODI, but also could be attractive in certain circumstance. The attraction of weak host country institution is expected to be pronounced in the case of extractive ODI originating from China, where the awareness to promote corporate social responsibility by Chinese authorities and Chinese firms is still at very early stage (OECD, 2008). We then hypothesize:

H5. Chinese firms investing in LAC tend to locate their extractive subsidiary in countries with weak institutions.

Investment in trading subsidiary is principally pulled by the demand side factor of a host country, measured through two variables: host country GDP which reflects its absolute market size, and host country per capita GDP that captures its development stage and the market affluence. A large body of evidence has confirmed the positive and significant relationship between the market size and Chinese ODI in OECD countries, but found no such correlation in non-OECD countries (Buckley et al., 2007; Cheung & Qian, 2009; Hurst, 2011; Kolstad & Wiig, 2012). Nonetheless, such observation may be biased by the methods that overlook the heterogeneity even within the non-OECD countries. Indeed, Sanfilippo (2010), based on China's reported ODI stocks in 41 African countries from

¹² For an excellent literature review on resource curse problem, please see Rosser (2006).

1998 to 2007, finds that China sees in some African countries a good market potential to place its low cost production in excess. His finding is in concordance with the trend that Chinese manufacture exports are diversified by destination since 1999. Between 1997 and 2011, the share of China's exports to the developing economies outside of East Asia has risen significantly from 8.06% to 20.02%.¹³ The weight of LAC developing economies in China's total merchandise exports has grown by 2.6 times, which is enough to transform China into the second largest source of imports for Latin America behind the United States. With the prediction of a long-term legacy of lower growth in advanced economies in the post crisis era, the current trade pattern between China and LAC will only suggest more market-seeking Chinese ODI in LAC in the short and medium terms (Fornes & Butt-Philip, 2011).

Different from ODI in extractive subsidiary, which is often a type of vertical integration that aims to control the upstream source of primary materials, ODI in trading subsidiary is more horizontal seeking to facilitate imports and exports of intermediate or end products from or to China. A trading subsidiary aims to serve the foreign market through a local operational entity, without substituting exports by localization of production. Therefore, the fixed investment cost is low while the variable cost is crucial for their success. As a big part of the variable cost is related to the local business environment, such as tax charge, administrative fee and social respect of property rights and contract enforcement, trading subsidiary is expected to be located in countries with strong private sector institutions that can reduce quotidian transaction costs. We hypothesize thus:

H6. Chinese firms investing in LAC tend to locate their trading subsidiary in countries with strong institutions.

3. Data and methodology

3.1. Data

Our sample on China's ODI in LAC is extracted from the “catalogue of enterprises (institutions) investing abroad”, a database maintained by the MOFCOM (2013b). Every entry of the database contains the information about: the certificate number granted by the MOFCOM; the destination country; the name of Chinese investing enterprise; the provincial origin of the investor; the name and the activity of the foreign affiliate; and the approval date of the project. The database is not free from limitations. First of all, it doesn't decompose correctly China's ODI by country and by sector due to the incapability of Chinese administration to monitor the further transactions once the capital flows out to the overseas financial centers. The problem is especially serious in LAC while an overwhelming part of China's ODI in the region is concentrated in the Cayman Islands and British Virgin Islands.¹⁴ Unfortunately, there don't exist any alternative sources that can tell us where this money actually goes, though we can have a good guess that a fair amount of it has ended up back in China over the years as disguised “round-tripping” investment.¹⁵ Secondly, the database only records the approved projects rather than the realized ones, thus may inflate the number of Chinese ODI projects fulfilled. However, even this potentially inflated number may only capture a fraction of the total China's private ODI, which is systematically underrepresented.¹⁶ While no other sources can cover more extensively China's small scale ODI,¹⁷ MOFCOM's database is still by far our best choice for the aim of our research. Moreover, the approval data reflect better the real intention of investment than the data compiled in the survey studies, as the resource and time used to go through the official approval procedure could be considered as a kind of pre-investment. MOFCOM's database thus allows us to compare the strategic consideration, and the factors taken into account during the decision-making step between Chinese SOEs and POEs.

In order to distinguish enterprises with different ownership, two sources have been used especially for the “local enterprises”.¹⁸ CCER database of Chinese listed companies is referred to check the ownership structure of large publicly listed companies and to identify their ultimate controlling shareholder, and the catalog of Chinese enterprises compiled during the 2012 Economic Census is used to cross check the information on company names with its registered status.¹⁹ ODI projects are also disaggregated at sector level. MOFCOM classifies each investment project according to the National Industrial Classification (GB/T 4754-2011), which is distinct from the International Standard Industrial Classification of all economic activities (ISIC V.4). It makes it difficult to compare

¹³ World Development Indicators, <http://databank.worldbank.org/>.

¹⁴ According to MOFCOM (2013a), 89.3% of China's ODI stocks in LAC were concentrated in the Cayman Islands and British Virgin Islands. The rest of the region hosted US\$7.3 billion, accounting for only 1.4% of China's total ODI stocks at the end of 2012.

¹⁵ According to the estimation of Xiao (2004), the “round-tripping” investment could represent around 29.2 to 50.2% of China's FDI inflows during 1994–2001.

¹⁶ As acknowledged by MOFCOM officials and cited by Shen (2013), off-the-record estimates of private overseas projects can run from two or three times that captured by the MOFCOM database, to an astonishingly ten times in some occasions in Africa (Gu, 2009).

¹⁷ An alternative way to collect more reliable data is to count on the host countries. However, this would require sophisticated FDI data systems that few Latin American countries have at present. Moreover, the quality of data is very uneven across the countries in the region, making it even more difficult to be used for a robust econometric analysis. There do exist some commercial databases that claim to provide more reliable Chinese ODI data, such as Thomson–Reuters international M&A transaction database used by Peters (2013), and FT's fDi Markets monitoring cross border greenfield investments used by Amighini et al. (2013). However, none of them have solved satisfactorily the problem of underestimation of Chinese private overseas investment, as they monitor basically the high profile and well known Chinese ODI transactions, which are systematically biased against those realized by Chinese SMEs, mainly private ones.

¹⁸ The Catalog of the MOFCOM distinguishes the “central enterprises” [zhongyang qiye] from the “local enterprises” [difang qiye]. While central enterprises refer to state-owned companies affiliated to the central government and managed by State-owned Assets Supervision and Administration Commission (SASAC), local enterprises comprise all types of firms that are under the supervision of provincial administrative bodies.

¹⁹ Any enterprise registered in China has to choose the form that corresponds best to its ownership structure among twenty-five options. It is quite easy to identify the state-owned or state-controlled companies, but the definition of the privately owned enterprise is restricted to that owned and controlled by individual entrepreneurs. Other enterprises with mixed capital structure are often included in the ambiguous category such as “corporation” or “other limited liability company”. *Guanyu huafen qiye dengji zhuce leixing de guiding* [Regulation on classification of registered enterprises] (2001), http://www.stats.gov.cn/tjbz/t20061018_402369831.htm.

China's ODI with that of other investing countries in the region, but poses little problems on our research aiming to compare ODI pattern between Chinese SOEs and POEs.

Table 1 summarizes the sector distribution of China's ODI projects in LAC between 2003 and 2012 by types of investing firms. At the end of 2012, a total number of 1110 projects have been recorded in LAC. We exclude from our sample those projects that concern the tax havens identified by OECD,²⁰ which hosted 460 approved projects. After eliminating some redundancy of entry input, 633 projects have been approved by the Chinese government. They are dispersed across 20 independent economies²¹ among 24 countries included in our final sample.²² Compared with the industrial distribution of China's ODI projects in the whole world, those targeting LAC are more resource-seeking and marketing-seeking. The market-seeking motivation is more pronounced for POE projects, of which 40.9% is the investment in trading subsidiary that conduct wholesale and retail activity. Meanwhile, the resource-seeking motivation is relatively stronger for SOE projects. The proportion of the investment in extractive subsidiary that is engaged in mining and quarrying activity is as high as 22.3%. It is worth noting that within each sub-group, the investment in "business services" accounts for a considerable part of the ODI projects. It often takes the form of opening a representing office as the preparatory step toward a full-fledged investment of the home enterprise.

3.2. Methodology

As our dependent variable is the frequency count of Chinese ODI projects, the standard linear or discrete models are not appropriate methods. The econometric literature suggests count data regression models, such as a Poisson model or a negative binomial regression model, to deal with such dependent variables (Cameron & Trivedi, 2013).

The basic Poisson model is $\Pr(y_{i,t}) = f(y_{i,t}) = \frac{e^{-\mu_{i,t}} (\mu_{i,t})^{y_{i,t}}}{y_{i,t}!}$, where i indexes hosting countries and t indexes years and $\log \mu_{i,t} = X_{i,t}' \beta$, $X_{i,t}$ is a vector of m regressors for unit i at time t .

There is a common difficulty in the Poisson regression that is called over-dispersion. This is when the variance of the fitted model is larger than what is expected by the assumptions (the mean and the variance are equal) of the Poisson model. The summary statistics of our variables, as reported in Table 3, suggest clearly that our data are indeed over-dispersed, which is also confirmed by the goodness-of-fit test of the Poisson model. There are several ways to expand the Poisson model in order to take into account the over-dispersion. One approach to address the over-dispersion problem is to adopt the negative binomial model, which takes specifically into account the unobserved heterogeneity in the data (Hilbe, 2011). Compared with the simple Poisson model, the negative binomial model has a better explanatory power, and well addresses the problem of excess zeros,²³ which is related to the inclusion in our sample those countries and years without Chinese ODI projects. In order to keep the balanced panel structure of our dataset, we then fit a random-effect panel negative binomial model *via* maximum likelihood.

The basic specification to test H1 to H4 is written as:

$$\Pr(y_{i,j,t}) = \alpha + \beta_1 GDP_{i,t-1} + \beta_2 GDPC_{i,t-1} + \beta_3 RES_{i,t-1} + \beta_4 INSTITUTION_{i,t-1} + \beta_5 TREND + \beta_6 INFL_{i,t-1} + \beta_7 TELE_{i,t-1} + \beta_8 CHEXPORT_{i,t-1} + \beta_9 CHIMPORT_{i,t-1} + \varepsilon_{i,j,t} \quad \text{Model (1)}$$

The variables and summary statistics are provided in Tables 2 and 3 respectively.

Our main dependent variable, $ODI_{i,j,t}$ measures the number of ODI projects originating from China and directed to country i in industry j at time t . As the main aim of our paper is to compare the investment patterns between firms of different ownership structure, we have created two additional dependent variables, $ODI_SOE_{i,j,t}$ and $ODI_POE_{i,j,t}$ measuring the number of investments by Chinese SOEs and POEs respectively and directed to country i in industry j at time t .

We now discuss the selection of the independent variables. For the natural resource endowment of a host country, most scholars use the share of raw materials (fuels, ores and metals) to total merchandise exports as proxy (Buckley et al., 2007; Cheung & Qian, 2009; Duanmu, 2012; Huang & Wang, 2011; Kang & Jiang, 2012; Kolstad & Wiig, 2012; Ramasamy et al., 2012), while others suggest to use the quantity of reserves in the ground, a measure that reflects the potential gains from investing in countries with unexploited resources (Brunnschweiler & Bulte, 2008). We agree with the arguments of Kolstad and Wiig (2009) that what would be attractive to investors are the immediate natural resource rents rather than the expectative but uncertain return of exploration of what is in the ground. This makes the export share (RES) a better proxy, which is also empirically proven especially when Chinese firms invest in lower income countries (Amighini et al., 2013). To measure host country market size, two variables are used. Host country GDP at constant price (GDP) is chosen to reflect market breadth, which is critical for Chinese firms that hold specific home country based competitive edges in less mature and heterogeneous market (Buckley et al., 2007; Cheng & Ma, 2010). Host country per capita GDP ($GDPC$) is selected to reflect market depth and affluence, which would be more important to draw Chinese firms that have firm

²⁰ These include: Anguilla, Antigua and Barbuda, Aruba, Bahamas, Belize, British Virgin Islands, Cayman Islands, Dominica, Grenada, Montserrat, Netherlands Antilles, Panama, St. Lucia, St. Kitts & Nevis, St. Vincent and the Grenadines, Turks and Caicos Islands.

²¹ For more information about country distribution of Chinese ODI projects, please see Table A1 presented in the Annex.

²² Given the missing data in the independent variables, only four countries with zero Chinese ODI projects between 2003 and 2012 are included. They are El Salvador, Haiti, Honduras and Nicaragua.

²³ The excess zero can also be solved by the adoption of zero inflated Poisson model, however the computation of Akaike's Information Criterion suggests that the negative binomial model is a slightly better alternative.

Table 1
Sector distribution of China's ODI projects in LAC by firm type, 2003–2012.

	POE (total = 359)	SOE (total = 274)	Total projects in LAC 2003–2012 (total = 633)	Total projects in the world until 2012 (total = 21860)
Mining and quarrying	9.70%	22.30%	15.20%	6.00%
Construction	1.10%	19.30%	9.00%	6.90%
Manufacturing	16.40%	6.90%	12.30%	25.70%
Wholesale and retail	40.90%	17.50%	30.80%	27.40%
Business services	25.10%	27.00%	25.90%	12.90%
Others	6.70%	6.90%	6.80%	22.00%
Total	100.00%	100.00%	100.00%	100.00%

Data source: MOFCOM (2013a, 2013b).

specific competitiveness in penetrating a more mature and demanding market. Moreover, host country per capita GDP is also the only economic factor found to be robust in explaining inward FDI by Chakrabarti (2001) using Extreme Bound Analysis.

Considering host country institutions, some previous studies consider the political stability as the determinant factor (Amighini et al., 2013; Buckley et al., 2007; Cheung & Qian, 2009; Ramasamy et al., 2012; Sanfilippo, 2010), while others choose to look at private sector institutions (Huang & Wang, 2011; Hurst, 2011). However, as warned by Arndt and Oman (2006), the complexity of institutions can hardly be captured adequately by a single composite governance indicator that may put oranges and apples in the same basket. As humanly devised constraints that structure political, economic and social interaction (North, 1991), institutions are composed of different dimensions that may have different effects on FDI (Cuervo-Cazurra & Genc, 2008), and may not evolve concordantly (Arndt & Oman, 2006). Instead of treating institutions as a monolithic system, Williamson (2000) presents institutions as a hierarchy framework, with Basic Institutional Environment, or “the formal rules of the game” situated at a higher level than Institutions of Governance, or what Williamson calls “the play of the game”. Williamson’s framework makes important observations about the speed with which adaptation may be expected to take place at each level. Changes in basic institutional environment, which encompass public sector institutions such as constitutions, political systems, and laws, courts, that enforce political, human rights and property rights, take place much more slowly than that observed at lower-level institutions, which are *de facto* rules governing individual economic exchanges in real life. Williamson’s framework emphasizes thus the relative inertia of the construction of formal institutions, implying a permanent gap between *de jure* institutions and *de facto* institutions. As formal political arrangement is the fruit of a long adaptation process, any indicators that focus predominantly on political stability or democracy may not adequately measure true institutional quality of a given country at a given time. For example, Knack and Keefer (1995) argue that political instability only partially captures cross-country variations in property rights security, and that there are many examples of stable political regimes that systematically expropriated property rights. A similar argument can be made about measures of democracy and measures of political & civil freedoms. While democratic regimes, as opposed to autocratic regimes, tend to enhance property rights, Clague, Keefer, Knack, and Olson (1996) note many examples of bad democracies and good autocracies, where the outcome on property rights security runs against the general prediction.

In line with these theoretical arguments, we decide to run the basic specification separately with two alternative institution variables. The basic Model (1) is rewritten as:

$$Pr(y_{i,j,t}) = \alpha + \beta_1 GDP_{i,t-1} + \beta_2 GDPC_{i,t-1} + \beta_3 RES_{i,t-1} + \beta_4 RLAW_{i,t-1} + \beta_5 TREND + \beta_6 INFL_{i,t-1} + \beta_7 TELE_{i,t-1} + \beta_8 CHEXPORT_{i,t-1} + \beta_9 CHIMPORT_{i,t-1} + \varepsilon_{i,j,t} \tag{Model (1.1)}$$

Table 2
Variables and description.

Variable	Type	Description	Source
ODI	Dependent	Number of Chinese approved investment projects	MOFCOM
ODL_SOE	Dependent	Number of Chinese approved investment projects by SOEs	MOFCOM
ODL_POE	Dependent	Number of Chinese approved investment projects by POEs	MOFCOM
GDP	Independent	Log of host country's GDP at constant price 2005 US\$	UNSD
GDPC	Independent	Log of host country's per capita GDP US\$	UNSD
RES	Independent	Share of ore, metal and fuel exports on host country's total merchandise exports	UNCTADStat
TREND	Independent	Trend variable	
POLI	Independent	Political stability and violence index	Worldwide Governance Indicators
RLAW	Independent	Rule of law index	Worldwide Governance Indicators
INFL	Control	Inflation, percentage change of average consumer price index	IMF World Economic Outlook Database
TELE	Control	Telephone mainlines per 100 people	WDI
CHEXPORT	Control	China's exports to a country normalized by world's total export to the country	UNCTADStat
CHIMPORT	Control	China's imports from a country normalized by world's total import from the country	UNCTADStat

Please cite this article as: Lin, Y., Firm heterogeneity and location choice of Chinese firms in Latin America and the Caribbean: Corporate ownership, strategic motives..., *China Economic Review* (2015), <http://dx.doi.org/10.1016/j.chieco.2015.03.001>

Table 3
Summary statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
ODI	1680	0.3767857	1.427313	0	32
ODI_SOE	1680	0.1630952	0.6499699	0	13
ODI_POE	1680	0.2136905	0.9859903	0	19
GDP	1680	24.02629	1.698484	20.98479	27.75006
GDPC	1680	8.226326	0.8574408	5.653917	9.924222
RES	1680	29.36348	26.82163	0.2684569	90.70911
RLAW	1680	-0.4607142	0.7175153	-1.909397	1.450194
POLI	1680	-0.3102248	0.7207327	-2.378574	1.297067
TREND	1680	4.5	2.873137	0	9
INFL	1680	7.886945	6.537584	-1.168	51.461
TELE	1680	16.08151	10.19385	0.4983622	49.91696
CHEXPORT	1680	5.889853	3.30944	0.6498548	16.66465
CHIMPORT	1680	4.60926	6.317222	0.0011206	30.75821

Note: for definition and data source of the variables, please refer to Table 2.

$$\Pr(y_{i,j,t}) = \alpha + \beta_1 GDP_{i,t-1} + \beta_2 GDPC_{i,t-1} + \beta_3 RES_{i,t-1} + \beta_4 POLI_{i,t-1} + \beta_5 TREND + \beta_6 INFL_{i,t-1} + \beta_7 TELE_{i,t-1} + \beta_8 CHEXPORT_{i,t-1} + \beta_9 CHIMPORT_{i,t-1} + \varepsilon_{i,j,t}. \quad \text{Model (1.2)}$$

The main institution variable in our analysis is the Rule of Law index (*RLAW*) from the World Bank's Worldwide Governance indicators (WGI). The WGI indicators have the unique merit to cover a wide range of countries (215 countries) and across times (over the period 1996–2013). The Rule of Law index measures “the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence”. This index is chosen to more adequately reflect what's going on in the quickly changing private sector institutions. On the other hand, in order to check the validity of the political objectives attached to Chinese ODI in LAC, the Political Stability and Absence of Violence index (*POLI*) is selected to run another specification. Designed to measure “the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism”, this index is highly correlated to democracy and thus reflects the public sector institutions, situated at the top of Williamson's institution hierarchy. It is worth noting that no matter how carefully constructed WGI indicators are (Kaufmann, Kraay, & Mastruzzi, 2010) and how they are useful to measure different dimensions of institution despite of critics (Kaufmann, Kraay, & Mastruzzi, 2007), they are still produced by and for external users located outside developing countries, reflecting subjective perceptions of institution quality by western standards (Arndt & Oman, 2006). This to be said, if support is found for our hypotheses H3 and H4, it doesn't necessarily mean that Chinese SOEs are risk lovers by nature and POEs are risk avoiders, but rather the divergences of risk perceptions altered by the corporate ownership.

In addition, we also include a time trend dummy (*TREND*) to capture year fixed effects due to the constant growth of China's ODI through the years. Several control variables are incorporated. The annual inflation rate (*INFL*) is selected as a standard indicator of economic stability. The telephone lines per 100 people (*TELE*) are used as proxy of infrastructure,²⁴ which according to Lederman, Mengistae, and Xu (2010) is one of the economic fundamentals that explain the low FDI inflows to Southern African economies. Trade linkage measured by China's exports to a country normalized by world's total export to the country (*CHEXPORT*) and the share of China's imports in the world's total imports from the country (*CHIMPORT*) bring FDI-Trade nexus into our analysis.²⁵ The correlation matrix between explanatory variables is presented in the Table 4, and confirms the absence of serious multicollinearity.²⁶ Finally, to address reverse causality problems, all the independent and control variables are lagged by one year ($t - 1$).

The interaction terms between industry dummies and institution variables are added to the Model (1) in order to test H5 and H6. The Model (1) is extended into Model (2) as following:

$$\Pr(y_{i,j,t}) = \alpha + \beta_1 GDP_{i,t-1} + \beta_2 GDPC_{i,t-1} + \beta_3 RES_{i,t-1} + \beta_4 INSTITUTION_{i,t-1} + \beta_5 TREND_t + \beta_6 INFL_{i,t-1} + \beta_7 TELE_{i,t-1} + \beta_8 CHEXPORT_{i,t-1} + \beta_9 CHIMPORT_{i,t-1} + \beta_{10} INSTITUTION_{i,t-1} \times INDUSTRY_j + \varepsilon_{i,j,t}. \quad \text{Model (2)}$$

²⁴ Other proxies for infrastructure resulted in sever multicollinearity problems.

²⁵ Other proxies such as China's exports to the host country and China's imports from the host country caused sever multicollinearity problems.

²⁶ The Correlation value between two institution variables is 0.7674, which is high enough to suggest a prudent approach that avoids incorporating them together in the same specification.

Table 4
Correlation matrix of explanatory variables.

	GDP	GDPG	RES	RLAW	POLI	TREND	INFL	TELE	CHEXPOR	CHIMPORT
GDP	1									
GDPG	0.4265	1								
RES	0.179	0.3562	1							
RLAW	0.0036	0.6006	0.0202	1						
POLI	-0.1304	0.4931	-0.1899	0.7674	1					
TREND	0.0705	0.3371	0.0495	-0.0133	0.0534	1				
INFL	-0.0541	-0.0983	0.1062	-0.2556	-0.2009	-0.1203	1			
TELE	0.0987	0.742	0.0851	0.748	0.5932	0.0523	-0.0313	1		
CHEXPOR	0.3393	0.3423	0.0635	0.0771	0.1035	0.5852	-0.1696	-0.0122	1	
CHIMPORT	0.427	0.3555	0.1853	0.2586	0.2685	0.2382	-0.1357	0.1103	0.6457	1

Note: for definition and data source of the variables, please refer to Table 2.

Two main industry dummies are *RESO*, which indicates projects investing in extractive subsidiary, and *TRADE*, which indicates projects investing in trading subsidiary. The Model (2) is reformulated as:

$$\Pr(y_{i,j,t}) = \alpha + \beta_1 GDP_{i,t-1} + \beta_2 GDPG_{i,t-1} + \beta_3 RES_{i,t-1} + \beta_4 INSTITUTION_{i,t-1} + \beta_5 TREND_t + \beta_6 INFL_{i,t-1} + \beta_7 TELE_{i,t-1} + \beta_8 CHEXPOR_{i,t-1} + \beta_9 CHIMPORT_{i,t-1} + \beta_{10} INSTITUTION_{i,t-1} \times RESO + \varepsilon_{i,j,t} \quad \text{Model (2.1)}$$

$$\Pr(y_{i,j,t}) = \alpha + \beta_1 GDP_{i,t-1} + \beta_2 GDPG_{i,t-1} + \beta_3 RES_{i,t-1} + \beta_4 INSTITUTION_{i,t-1} + \beta_5 TREND_t + \beta_6 INFL_{i,t-1} + \beta_7 TELE_{i,t-1} + \beta_8 CHEXPOR_{i,t-1} + \beta_9 CHIMPORT_{i,t-1} + \beta_{10} INSTITUTION_{i,t-1} \times TRADE + \varepsilon_{i,j,t} \quad \text{Model (2.2)}$$

Again, depending on the institution variable used, both Model (2.1) and Model (2.2) are composed of two sub-specifications.

Table 5
Estimation results of Model (1).

	ODI (Model 1.1)	ODI_SOE (Model 1.1)	ODI_POE (Model 1.1)	ODI (Model 1.2)	ODI_SOE (Model 1.2)	ODI_POE (Model 1.2)
GDP	0.65972766*** (0.0877705)	0.6241685*** (0.1132442)	0.78696041*** (0.107437)	0.68725628*** (0.0924465)	0.6964709*** (0.1240472)	0.79865815*** (0.1140046)
GDPG	-0.26976683 (0.29219)	-0.37494601 (0.3816683)	-0.54040866 (0.361831)	-0.3943556 (0.2910965)	-0.65451781* (0.3810032)	-0.57660529 (0.3658091)
RES	0.01933922*** (0.0043402)	0.02275651*** (0.0053738)	0.01779407*** (0.0054025)	0.01881571*** (0.0046387)	0.02342776*** (0.0060265)	0.01763469*** (0.0057862)
RLAW	-0.43191746** (0.2121643)	-0.5110469** (0.2549325)	-0.14721011 (0.2698152)			
POLI				-0.1651708 (0.2013053)	-0.05147647 (0.2763513)	-0.032345 (0.2432013)
TREND	0.27411774*** (0.0428601)	0.36226488*** (0.0625737)	0.22891734*** (0.053836)	0.29342088*** (0.0422627)	0.3957763*** (0.0620413)	0.2364423*** (0.0525653)
INFL	-0.03650994** (0.0178152)	-0.03017748 (0.0233049)	-0.05428068** (0.0244106)	-0.0236667 (0.0158114)	-0.00937776 (0.0201988)	-0.04807226** (0.0212159)
TELE	0.05526074*** (0.019909)	0.07347953*** (0.0242822)	0.0418063 (0.0278297)	0.04772316** (0.0192491)	0.06430047*** (0.0235798)	0.03754813 (0.0265498)
CHEXPOR	-0.03243581 (0.0407978)	-0.0638194 (0.0537637)	-0.00228744 (0.0552266)	-0.03737914 (0.0413606)	-0.06831166 (0.0543957)	-0.00564791 (0.055223)
CHIMPORT	0.03828865* (0.0166235)	0.06223084*** (0.020684)	0.02549127 (0.021858)	0.03320116* (0.0168317)	0.05348443*** (0.0217001)	0.02343098 (0.0224896)
CONS	-16.78453*** (1.97249)	-15.874657*** (2.715136)	-17.492833*** (2.416489)	-16.283121*** (1.956708)	-15.248204*** (2.677908)	-17.388669*** (2.435466)
Observations	1680	1680	1680	1680	1680	1680
Wald test	356.90 (0.000)	224.31 (0.000)	198.25 (0.000)	366.44 (0.000)	229.64 (0.000)	200.97 (0.000)
LR test (pooled)	191.38 (0.000)	72.52 (0.000)	145.10 (0.000)	191.55 (0.000)	74.98 (0.000)	144.02 (0.000)

Standard errors in parentheses.

Note: for definition and data source of the variables, please refer to Table 2.

* p < 0.1.

** p < 0.05.

*** p < 0.01.

4. Results and discussion

Results of the statistic estimation are reported in Tables 5 to 7. The Wald test on the joint significance of the parameters shows that the models are statistically significant, while the likelihood-ratio test suggests that a random-effect panel model is better than the pooled negative binomial estimator.

Without interaction terms, our empirical results confirm that Chinese firms, whether public or private, are indeed attracted to countries with large market size. Natural resource endowment is also an important pulling factor for Chinese firms. However, compared with POEs, coefficients of RES are larger for SOEs, whereas that of GDP are smaller. That gives a weak support for H1 and H2 suggesting a relatively stronger resource-seeking motivation of Chinese SOEs in LAC, while Chinese POEs are more market-seeking. This difference in ODI motivations is further illustrated by the significant and positive relationship between China's imports from the host country and the number of ODI projects of SOEs. During 2003–2012, the growth of China's imports from LAC outpaced that of the rest of the world, and is led by the importation of mineral and oil commodities. The share of fuel, ores and metals in China's total imports from the region grew from 30% to 62%, and representing almost 15% of China's total imports of these materials from the world. Under this circumstance, the significant and positive sign of CHIMPORT variable demonstrates the intention of Chinese SOEs to secure the source of oil and mineral resources in LAC. In the meantime, It is worth noting that the irrelevance of the other variable CHEXPORT is not in contradiction with the expected strong market-seeking motivation of China's ODI, but reflects the intention of Chinese firms to explore new markets in LAC as partly captured by GDP variable, rather than consolidate its leading position in the countries where the penetration of Chinese goods is high.

An interesting finding is related to the host country institutions. Chinese firms as a whole are indeed attracted to risky countries in terms of RLAW, whereas we are unable to find evidence to show that Chinese investments are lured to where political risks are high, measured by POLI. This finding is in line with the argument of Cuervo-Cazurra and Genc (2008) that not all the institutional dimensions have the same importance for foreign investors. The private sector institutions are more relevant, while the public sector institutions less likely to affect the behavior of foreign companies. To check the robustness of our results, we rerun the Model (1) with other indices found in WGI database. The results presented in the Annex (Table A2) are qualitatively the same. The replacement of Political Stability index with the Voice and Accountability index generates the same insignificant effect. The significant and negative sign is unaltered once we replace the Rule of Law index with other indices related to private sector institutions, such as Control of

Table 6
Estimation results of Model (2.1).

	ODI	ODI_SOE	ODI_POE	ODI	ODI_SOE	ODI_POE
	Specification 1	Specification 1	Specification 1	Specification 2	Specification 2	Specification 2
GDP	0.65901173*** (0.0876464)	0.61101348*** (0.1109765)	0.78693412*** (0.107449)	0.69289293*** (0.091926)	0.69760885*** (0.1217097)	0.79854927*** (0.1139176)
GDPC	-0.24930724 (0.2930444)	-0.30370366 (0.3804694)	-0.54004356 (0.3619744)	-0.38878489 (0.2907009)	-0.63194397* (0.3778891)	-0.57461872 (0.3662797)
RES	0.0192142*** (0.0043236)	0.0220851*** (0.0052642)	0.01780636*** (0.0054053)	0.01888809*** (0.0046068)	0.02338917*** (0.0059158)	0.01771155*** (0.0057936)
RLAW	-0.35608677* (0.2160136)	-0.38159982 (0.2563331)	-0.13920619 (0.2756404)			
POLI				-0.06617111 (0.2071725)	0.12771857 (0.2805078)	-0.001858 (0.2499395)
TREND	0.26948867*** (0.04285)	0.34237165*** (0.061458)	0.22847164*** (0.0539426)	0.29208557*** (0.042176)	0.38566642*** (0.0614298)	0.23552565*** (0.0526314)
INFL	-0.03694095** (0.0178279)	-0.02996556 (0.0230435)	-0.05420241** (0.0244243)	-0.02345918 (0.0157614)	-0.00758417 (0.0198162)	-0.04791013*** (0.021235)
TELE	0.05558165*** (0.0199656)	0.07290548*** (0.0241355)	0.04187051 (0.027844)	0.0478989** (0.0192029)	0.064443*** (0.0233049)	0.03775114 (0.0265844)
CHEXPORT	-0.02982141 (0.0408333)	-0.04954807 (0.0529692)	-0.00192258 (0.0553099)	-0.03406651 (0.0413052)	-0.05433992 (0.0541399)	-0.00457948 (0.0553058)
CHIMPORT	0.03740942** (0.0166527)	0.06034451*** (0.0205101)	0.02538221 (0.0218807)	0.0310095* (0.0168709)	0.04818858** (0.0217358)	0.02289797 (0.0225338)
RLAW*RESO	-0.64153062* (0.355429)	-0.92692409** (0.3786962)	-0.06466367 (0.4488271)			
POLI*RESO				-0.62539955* (0.3591676)	-0.97882383** (0.4187263)	-0.24940799 (0.4830047)
CONS	-16.970686*** (1.976658)	-16.225084*** (2.682328)	-17.497694*** (2.417455)	-16.528386*** (1.9552)	-15.656163*** (2.648175)	-17.415975*** (2.437732)
Observations	1680	1680	1680	1680	1680	1680
Wald test	358.21 (0.000)	229.69 (0.000)	198.26 (0.000)	368.98 (0.000)	234.29 (0.000)	201.07 (0.000)
LR test (pooled)	191.43 (0.000)	70.51 (0.000)	144.99 (0.000)	189.11 (0.000)	70.71 (0.000)	144.12 (0.000)

Standard errors in parentheses.

Note: the industry dummy RESO indicates projects investing in extractive sector. For definition and data source of other variables, please refer to Table 2.

* p < 0.1.

** p < 0.05.

*** p < 0.01.

Table 7

Estimation results of Model (2.2).

	ODI	ODI_SOE	ODI_POE	ODI	ODI_SOE	ODI_POE
	Specification 1	Specification 1	Specification 1	Specification 2	Specification 2	Specification 2
GDP	0.66480996*** (0.087921)	0.64141701*** (0.1141224)	0.78571329*** (0.1075544)	0.68767394*** (0.0926325)	0.69568085*** (0.1238041)	0.80337621*** (0.1143782)
GDPC	−0.27025553 (0.2917905)	−0.35645062 (0.3815166)	−0.54071431 (0.3618678)	−0.39895219 (0.2912923)	−0.6398901* (0.3812499)	−0.58379911 (0.3650566)
RES	0.01904989*** (0.0043513)	0.02233814*** (0.0053858)	0.01797971*** (0.0054588)	0.0190714*** (0.0046699)	0.02311653*** (0.0060247)	0.01838959*** (0.0058432)
RLAW	−0.4775801** (0.2213568)	−0.67663172** (0.2659515)	−0.12159027 (0.2883959)			
POLI				−0.12403266 (0.2172887)	−0.1210662 (0.2880102)	0.08511273 (0.2714288)
TREND	0.27448706*** (0.0428011)	0.36306713*** (0.0617225)	0.22885621*** (0.0538301)	0.29322284*** (0.0422382)	0.39575782*** (0.0619528)	0.23630771*** (0.0523831)
INFL	−0.03626168** (0.0177912)	−0.02991399 (0.0231285)	−0.05425678** (0.0243991)	−0.02332795 (0.0158235)	−0.01000247 (0.0201901)	−0.04690247** (0.0211888)
TELE	0.05550552*** (0.0198966)	0.07519663*** (0.0243405)	0.04164267 (0.0278227)	0.04757924** (0.019247)	0.06431637*** (0.0235879)	0.03659055 (0.0264677)
CHEXPORT	−0.03380446 (0.0407988)	−0.06819013 (0.0534357)	−0.00161318 (0.0552967)	−0.03660358 (0.0413692)	−0.06884063 (0.0543868)	−0.00354958 (0.0551253)
CHIMPORT	0.03782601** (0.0165894)	0.06080881*** (0.0205278)	0.02540121 (0.0218721)	0.03303909** (0.0168261)	0.05324277** (0.0216826)	0.02222284 (0.0224514)
RLAW*TRADE	0.229239 (0.3131162)	1.0188259** (0.438021)	−0.09073587 (0.3612561)			
POLI*TRADE				−0.16196818 (0.3246714)	0.37831679 (0.4356887)	−0.35572748 (0.3766896)
CONS	−16.89394*** (1.977759)	−16.244706*** (2.769204)	−17.455354*** (2.42188)	−16.25051*** (1.959347)	−15.317951*** (2.681821)	−17.411707*** (2.439439)
Observations	1680	1680	1680	1680	1680	1680
Wald test	359.48 (0.000)	228.21 (0.000)	198.05 (0.000)	366.43 (0.000)	230.49 (0.000)	201.81 (0.000)
LR test (pooled)	190.54 (0.000)	73.43 (0.000)	145.16 (0.000)	191.56 (0.000)	75.03 (0.000)	142.92 (0.000)

Standard errors in parentheses.

Note: the industry dummy TRADE indicates projects investing in wholesale and retail sector. For definition and data source of other variables, please refer to Table 2.

* p < 0.1.

** p < 0.05.

*** p < 0.01

Corruption index, Government Effectiveness index, and Regulatory Quality index. The institutional effect does differ between Chinese firms with distinct corporate ownership. The attraction of weak rule of law is attributed to the preference of Chinese SOEs, as the rule of law is an insignificant factor for the POEs. Moreover, the inflation rates seem to deter only the private investment, while Chinese SOEs do not hesitate to invest where the macroeconomic instability is high. H3 is therefore supported and there is no clear evidence for H4.

Referring to Table 6 that demonstrates the results of the Model (2.1) with the interaction terms, institutional factors are found to be conditional on firm's strategic motives. For China's overall ODI projects, those investing in extractive subsidiary are correlated strongly and negatively with host country institutions, measured either by Rule of Law index or by Political Stability index. Thus, the political stability, different from that which has been found in Model (1), turns out to be relevant for the projects driven by resource-seeking motivation. As most of the projects in resource sectors are high profile ones involving huge amount of capital, it is not surprising that earlier studies based on the regression of the aggregate values of China's ODI confirm the concentration of China's ODI in developing countries where civil rights are limited and political uncertainty is high (Buckley et al., 2007). A more interesting finding arises when firm's ownership is taken into account. Even within the ODI projects investing in mining and quarrying activity, institutional factors remain to affect Chinese SOEs and POEs in different way. The magnitude of the institutional variables is much larger when interacting with a RESO dummy for SOEs, while host country institutions continue to be irrelevant in describing geographic distribution of Chinese private ODI projects in extractive industries. In other words, resource-seeking motivation enhances the risk-taking tendency of SOEs, but does not modify radically the perception of risk of POEs. H5 can only be partly accepted with condition.

The underlying reason for this phenomenon could be due to the specific entry mode of Chinese large mining SOEs in LAC. As pointed out by Ellis (2012), at the current stage of internationalization, Chinese firms lack the experience in participating in competitive bidding with the Western style of technical and cost proposals. In contrast, the Chinese prefer to establish high-level, government-to-government relationships. A large number of deals in extractive industries are thus often secured in a non-market way, allowing the Chinese to bypass the public bidding process. As large SOEs are the main actors to fulfill the projects agreed between governments, they are systematically found to orient their investments toward the host countries where government has larger

capacity of economic intervention, and less bound by the rule of law. Although these intergovernmental agreements are not free of risks, especially when the political order in the host countries is not stable, the potential loss in case of agreement breach is not a major concern of SOEs, which enjoy the soft budget constraints. The attraction of weak institutional environment therefore could be interpreted as an endogenous institutional requirement of the mechanism to deploy government-sponsored projects in emerging economies with resource abundance, and the risk-taking behavior of Chinese mining SOEs reflects their entry mode *via* government concession in LAC. Even if more and more Chinese SOEs, as noted by ECLAC (2013), have opted alternative entry strategies into the markets such as Brazil and Argentina, those recent transactions have not yet statistically changed the general picture of geographic distribution of public projects in mining and quarrying industry.

The interaction among strategic motive, corporate ownership and host country institution is further illustrated by the results of Model (2.2) presented in Table 7. Two findings are worthwhile to be discussed here. First of all, we only find proof for H6 in the case of Chinese SOEs investing in trading subsidiary. They are strongly and positively correlated with the Rule of Law index. Most of the SOEs that are active in exploring the markets in LAC are the leading companies specialized in manufacturing machinery and vehicles at home market, such as LiuGong Machinery, Shantui Construction Machinery, Xiamen XGMA Machinery, JMC Heavy Duty Vehicle, CSR Times Electric and Beiqi Foton Motor. Unlike most of the POEs that are forced to leave China, those companies are more likely to exploit their competitive advantage established at home, and follow the conventional development path, as encapsulated in Dunning's eclectic paradigm. Their foreign expansion mainly pushed by market seeking motive requires the establishment of horizontal business linkage in order to penetrate the local markets. The horizontal business networks require constant contacts with local suppliers and clients integrated into the host country private sector institutions. Therefore, strong rule of law, by reducing everyday transaction costs, draws Chinese highly competitive manufacturing SOEs, whose investment story is often overshadowed by those happening in the energy and mining sector. *TRADE* dummy, as an important moderator factor, thus alters the direction and magnitude of the unconditional institutional variable for SOEs seeking to explore the host country market, which should be distinguished from SOEs engaged in extractive industries. To check further how ODI motivation moderates the interaction between corporate ownership and host country institutions, we rerun Model (2) with other alternative industry dummies, and the results are presented in the Appendix A (Tables A3 to A5). Among ODI projects of Chinese SOEs, we find no clear evidence that those investing in the industries other than extractive industry are attracted by poor quality of host country institutions. This confirms the special nature of China's ODI in mining and quarrying activity, which captures the headline of press and the academic attention.

In the second place, we find no evidence that Chinese POEs are drawn to the countries with better and stable institutions to build wholesale or retail channels. In fact, strong host country institutions are simply irrelevant and have been hardly considered as the determinant factor in the location choice of Chinese private outward investors. There exist several possible answers. One possible explanation is that while Chinese POEs are forced to go global under the pressures to reduce dependence on competitive domestic markets, the 'push' factor of seeking to escape institutional and structural impediments is of less significance (Child & Rodrigues, 2005). As Song (2011) has observed, Chinese private firms in less developed regions like Africa are not the leading firms in their respective domestic Chinese industries. Facing increasing competition and diminishing profits in the home country markets, Chinese POEs are pushed abroad mainly for potential higher economic rents. During this process, Chinese POEs have expressed more concerns about host country economic fundamentals that may influence directly their economic returns, such as trade openness, exchange rates and infrastructure quality (Gu, 2009; 2011), while the institution quality is of less significance partly because of their experience in dealing with weak institutions at home. Another explanation is that Chinese private firms are simply inexperienced in internationalization. Most of Chinese POEs observed in LAC and recorded in our database are small and medium firms that go global at too early an age (Naudé, 2009). Lack of relative experience and at the early stage of internationalization, these private firms may undertake ODI projects with insufficient due diligence and attention to associated risks. The bold early internationalization intention is sometimes praised as strong entrepreneurship spirit of Chinese private investors, who view risk as synonym of opportunity and who are willing to adventure in no man's land in order to obtain early access advantage (Shen, 2012, 2013; Song, 2011). However, as pointed out by Liu, Xiao, and Huang (2008), if Chinese private firms do have strong entrepreneurship advantages, it is very much bounded by the entrepreneur's education, experience and environmental conditions, and this doesn't necessarily imply long term interests and engagement especially when the initial investment cannot be recovered in the short term. Under this circumstance, we may have the third possible explanation that has more economic rationale. Chinese private firms are indifferent to host country institutions because they are flexible and foot-loose, ready to leave the invested country thanks to their small financial engagement. It is especially true when we observe the significant and negative sign of the interaction term between rule of law and the industry dummy indicating China's private ODI project in business services (mainly in the form of representative office for the trading motive involving minimum capital). Therefore, different from more mature western companies, Chinese private investment in LAC is, for the time being, characterized by the short-term opportunity seeking behavior and low local embeddedness. It is maybe too early to consider China's private ODI projects as a more beneficial alternative to those carried by SOEs in terms of their contribution to industrial competence and institutional development of host country.

5. Concluding remarks

The literature on China's ODI in LAC, supported by lots of anecdotal evidence and limited empirical studies at the aggregate level, finds that Chinese ODI flows into the region are qualitatively different from ODI originating from developed countries. China's ODI is characterized by the decisive role played by Chinese SOEs and strategic consideration related to their resource seeking activities which leads them toward the countries with high political uncertainty and weak rule of law. Our paper suggests that such perspective based

on the aggregate values of China's ODI or other restricted data is perhaps too limited to reveal the heterogeneity of Chinese firms investing in LAC. In general, compared with Chinese POEs, Chinese SOEs do demonstrate a stronger resource-seeking motivation and risk-taking tendency. However, once we take into account the particular ODI motivations, host country institutions are not purely ownership specific, but contingent on industries and activities in which firms tend to invest. The direction of institutional effect is not consistent across sectors or firm types. Therefore, Chinese firms investing in LAC should not be treated as two distinct homogeneous groups according to their corporate ownership, but should be considered as endogenously heterogeneous in terms of their relationship with the central authority, their business autonomy and their specific ownership advantages obtained at home market. Firm heterogeneity taken into account, it should remind us of the limitations inherent in any single theoretical approach. If previous studies focused on the special nature of China's ODI in mining and quarrying industry have incorporated political analysis into the conventional FDI theory, the heterogeneity of Chinese firms requires a multi-level framework that integrates institution-based view, resource-based view and industry-based view in order to better understand the complexity of ODI behavior of Chinese firms. Research on the inner working of Chinese firms is essential. Such research should shed light on differences by ownership, by sector, by industry, by size of firms, and by experience in international operations. This being said, our article is merely a preliminary work with noticeable limitations. China's ODI projects in LAC are only disaggregated across two dimensions related to firm heterogeneity, omitting inevitably other important firm specific factors that may affect outward investment patterns and perception of investment risks. For example, although Chinese POEs are composed of lots of SMEs, there are undeniable differences in firm size. Large firms are more likely to be aware of political risk and to consider mitigating risk. What's more, private entrepreneur's personal experience and political participation may also facilitate access to specific government support and augment the relational asset. The inclusion of these additional differentiators could make our findings more nuanced. Facing continuing diversification of China's ODI and further liberalization of China's ODI regime, much more efforts need to be spent examining the many differences among Chinese outward investors.

Appendix A

Table A1

Country distribution of Chinese ODI projects in LAC between 2003 and 2012.

Country	Number of Chinese ODI projects	Country	Number of Chinese ODI projects
Argentina	55	Guatemala	1
Barbados	1	Guyana	6
Bolivia	27	Jamaica	4
Brazil	177	Mexico	81
Chile	68	Paraguay	2
Colombia	38	Peru	43
Costa Rica	8	Suriname	3
Cuba	27	Trinidad and Tobago	4
Dominican Republic	1	Uruguay	7
Ecuador	31	Venezuela	49

Data source: MOFCOM (2013b).

Table A2

Coefficient values of alternative institution variables for Model (1).

	ODI	ODI_SOE	ODI_POE
Voice and Accountability	−0.1244764 (0.2036884)	−0.2005199 (0.2409911)	0.1183265 (0.2525197)
Control of Corruption	−0.3882396* (0.218525)	−0.4626929* (0.2669834)	−0.1964921 (0.2840679)
Government Effectiveness	−0.3188278* (0.2411375)	−0.5468745* (0.3033913)	−0.0106232 (0.30567)
Regulatory Quality	−0.3861444** (0.1556772)	−0.0466088*** (0.1781438)	−0.2172473 (0.1962958)

Standard errors in parentheses.

Note: all the institution variables come from Worldwide Governance Indicators. Voice and Accountability index reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Control of Corruption index reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Government Effectiveness index reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Regulatory Quality index reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

* $p < 0.1$.

** $p < 0.05$.

*** $p < 0.01$.

Table A3
Estimation results of Model (2) with industry dummy CON.

	ODI	ODI_SOE	ODI_POE	ODI	ODI_SOE	ODI_POE
	Specification 1	Specification 1	Specification 1	Specification 2	Specification 2	Specification 2
GDP	0.65716266*** (0.0879613)	0.62597781*** (0.1128957)	0.78826874*** (0.1070707)	0.68599837*** (0.0926357)	0.69668747*** (0.123959)	0.80592225*** (0.113809)
GDPG	-0.26187713 (0.2931381)	-0.38315245 (0.3804223)	-0.53268215 (0.361152)	-0.3858799 (0.2922488)	-0.65663316* (0.3810602)	-0.58764256 (0.3643971)
RES	0.01956039*** (0.0043617)	0.02251021*** (0.0053644)	0.01812661*** (0.0054054)	0.01904513*** (0.0046565)	0.02341107*** (0.0060226)	0.01807959*** (0.0057639)
RLAW	-0.46838237** (0.2189354)	-0.46966829* (0.2634281)	-0.22271331 (0.2699988)			
POLI				-0.21076147 (0.0269611)	-0.04215351 (0.2858888)	-0.08206114 (0.2444607)
TREND	0.27215202*** (0.0429698)	0.36463356*** (0.0626788)	0.2259573*** (0.0537218)	0.28980186*** (0.0424755)	0.39636149*** (0.0621759)	0.23458062*** (0.052491)
INFL	-0.0359937** (0.0178516)	-0.03095112 (0.0232922)	-0.0517513** (0.0243463)	-0.02234505 (0.0158933)	-0.00960956 (0.0202719)	-0.04567387** (0.021151)
TELE	0.05480964*** (0.0199701)	0.07360523*** (0.0242254)	0.03832495 (0.0278695)	0.04666462** (0.0193344)	0.06437942*** (0.0235762)	0.03493898 (0.0264842)
CHEXPORT	-0.03124753 (0.0408617)	-0.06532953 (0.0538574)	0.00059416 (0.0550138)	-0.03455099 (0.0415207)	-0.06870311 (0.0544618)	-0.00238785 (0.0550085)
CHIMPORT	0.03848019** (0.0166568)	0.06242714*** (0.020626)	0.02616641 (0.0217774)	0.03266011* (0.0168778)	0.05358124** (0.0216985)	0.02331 (0.0223999)
RLAW*CON	0.2649463 (0.3754338)	-0.22687531 (0.3892572)	1.2908523** (0.6327581)			
POLI*CON				0.41299367 (0.3919521)	-0.05232532 (0.4169616)	1.1029823* (0.6270001)
CONS	-16.806797*** (1.977226)	-15.798305*** (2.710965)	-17.588424*** (2.418667)	-16.335503*** (1.964622)	-15.231258*** (2.678432)	-17.498723*** (2.429641)
Observations	1680	1680	1680	1680	1680	1680
Wald test	355.50 (0.000)	226.05 (0.000)	201.73 (0.000)	365.58 (0.000)	229.94 (0.000)	204.52 (0.000)
LR test (pooled)	191.60 (0.000)	69.40 (0.000)	143.01 (0.000)	191.65 (0.000)	73.15 (0.000)	139.53 (0.000)

Standard errors in parentheses.

Note: the industry dummy CON indicates projects investing in construction sector. The significant and positive coefficients of RLAW*CON and POLI*CON for Chinese POEs have little meaning due to the very limited number of private ODI projects in construction. Only 4 out of 359 private projects have been recorded. Two of them approved in 2011 have been located in Chile and Peru, while other two approved in 2012 target Brazil and Venezuela. For definition and data source of other variables, please refer to Table 2.

- * p < 0.1.
- ** p < 0.05.
- *** p < 0.01.

Table A4Estimation results of *Model (2)* with industry dummy MAN.

	ODI	ODI_SOE	ODI_POE	ODI	ODI_SOE	ODI_POE
	<i>Specification 1</i>	<i>Specification 1</i>	<i>Specification 1</i>	<i>Specification 2</i>	<i>Specification 2</i>	<i>Specification 2</i>
GDP	0.65826362*** (0.0880077)	0.62401269*** (0.113145)	0.78522774*** (0.1072678)	0.68716909*** (0.0924475)	0.69813857*** (0.1236661)	0.79930996*** (0.1137331)
GDPC	−0.26441396 (0.2929447)	−0.37554088 (0.3814334)	−0.53240177 (0.3613247)	−0.394376 (0.291082)	−0.66130217* (0.3802866)	−0.57908507 (0.3650363)
RES	0.01940753*** (0.0043569)	0.02275797*** (0.0053689)	0.01786596*** (0.0053992)	0.01881706*** (0.0046387)	0.02352169*** (0.0060104)	0.01769582*** (0.0057748)
RLAW	−0.39148747* (0.2161717)	−0.51625687** (0.2586774)	−0.08507907 (0.2741177)			
POLI				−0.16174737 (0.2086862)	−0.07939455 (0.2796656)	0.01148255 (0.255219)
TREND	0.27378377*** (0.04296)	0.36214793*** (0.0625536)	0.22892968*** (0.0539636)	0.29336113*** (0.0422733)	0.39536083*** (0.0620101)	0.23649222*** (0.0525514)
INFL	−0.03613473** (0.0178512)	−0.03027661 (0.0233127)	−0.05418767** (0.0244228)	−0.0236293 (0.0158227)	−0.0095871 (0.0201472)	−0.04752713** (0.0211959)
TELE	0.05562208*** (0.0199527)	0.07341095*** (0.0242789)	0.0418098 (0.0278004)	0.04770746* (0.0192499)	0.06421257*** (0.0235356)	0.03708738 (0.0265125)
CHEXPORT	−0.03331355 (0.0409323)	−0.06354929 (0.0537797)	−0.00410274 (0.0552598)	−0.0373932 (0.0413609)	−0.06684919 (0.0543713)	−0.00588402 (0.055128)
CHIMPORT	0.0385686* (0.0166476)	0.06219063*** (0.0206749)	0.02634106 (0.021807)	0.0332364** (0.0168395)	0.05293404** (0.0217129)	0.0236415 (0.0224379)
RLAW*MAN	−0.38436313 (0.3806583)	0.05641695 (0.4842429)	−0.5493625 (0.4423679)			
POLI*MAN				−0.02226978 (0.3593574)	0.30883895 (0.51877)	−0.22300602 (0.4128396)
CONS	−16.810991*** (1.978834)	−15.867918*** (2.71321)	−17.556784*** (2.415483)	−16.280677*** (1.957136)	−15.276699*** (2.666051)	−17.396463*** (2.431113)
Observations	1680	1680	1680	1680	1680	1680
Wald test	356.64 (0.000)	224.44 (0.000)	199.47 (0.000)	366.46 (0.000)	230.24 (0.000)	201.63 (0.000)
LR test (pooled)	190.66 (0.000)	71.84 (0.000)	140.24 (0.000)	191.03 (0.000)	73.35 (0.000)	140.02 (0.000)

Standard errors in parentheses.

Note: the industry dummy MAN indicates projects investing in manufacturing sector. For definition and data source of other variables, please refer to [Table 2](#).

- * p < 0.1.
- ** p < 0.05.
- *** p < 0.01

Table A5
Estimation results of Model (2) with industry dummy SERVICE.

	ODI	ODI_SOE	ODI_POE	ODI	ODI_SOE	ODI_POE
	Specification 1	Specification 1	Specification 1	Specification 2	Specification 2	Specification 2
GDP	0.66954204*** (0.0872651)	0.6321474*** (0.1133414)	0.8017009*** (0.1063901)	0.6868754*** (0.0922281)	0.6957136*** (0.1239764)	0.7998409*** (0.1137434)
GDPC	-0.2984108 (0.29011)	-0.4021353 (0.3812127)	-0.5736198 (0.3589747)	-0.3983027 (0.290665)	-0.6535316* (0.3812657)	-0.5862473 (0.3654806)
RES	0.0193592*** (0.0043061)	0.023069*** (0.0053959)	0.0173117*** (0.0053344)	0.0187035*** (0.0046312)	0.023365*** (0.0060297)	0.0174482*** (0.005772)
RLAW	-0.3079892 (0.228695)	-0.40073 (0.2762247)	0.0425791 (0.284043)			
POLI				-0.1252834 (0.2101985)	-0.0139822 (0.286942)	0.0125919 (0.2532195)
TREND	0.2755877*** (0.0425921)	0.3635873*** (0.0627076)	0.233197*** (0.0533367)	0.2925114*** (0.0423228)	0.3942725*** (0.0622729)	0.2364157*** (0.052596)
INFL	-0.0350503** (0.0177321)	-0.0292439 (0.0232864)	-0.0515936** (0.0242605)	-0.023698 (0.0157827)	-0.0095479 (0.0202083)	-0.048349** (0.0211633)
TELE	0.0540679*** (0.0197846)	0.0727902*** (0.0242332)	0.0393739 (0.0276248)	0.0473426* (0.0192184)	0.063867*** (0.0235962)	0.0373846 (0.026493)
CHEXPORT	-0.0319277 (0.0404426)	-0.0628798 (0.0536553)	-0.0655631 (0.0545078)	-0.0364203 (0.0413599)	-0.0671903 (0.0545284)	-0.0055383 (0.0551445)
CHIMPORT	0.03819** (0.016486)	0.0612354*** (0.0206343)	0.027128 (0.0215705)	0.0335534** (0.0168593)	0.0534751** (0.0217497)	0.0243635 (0.0225482)
RLAW*SERVICE	-0.3849023 (0.2882597)	-0.3483562 (0.3504784)	-0.6601958* (0.3510015)			
POLI*SERVICE				-0.2041255 (0.3241449)	-0.1913477 (0.4077638)	-0.2405055 (0.3999967)
CONS	-16.77761*** (1.963131)	-15.8732*** (2.711257)	-17.57508*** (2.400296)	-16.26253*** (1.95186)	-15.26726*** (2.67425)	-17.36632*** (2.427452)
Observations	1680	1680	1680	1680	1680	1680
Wald test	362.56 (0.000)	224.88 (0.000)	204.37 (0.000)	366.65 (0.000)	229.24 (0.000)	201.53 (0.000)
LR test (pooled)	182.80 (0.000)	69.35 (0.000)	136.42 (0.000)	185.51 (0.000)	73.21 (0.000)	139.35 (0.000)

Standard errors in parentheses.

Note: the industry dummy SERVICE indicates projects investing in business services. For definition and data source of other variables, please refer to Table 2.

- * p < 0.1.
- ** p < 0.05.
- *** p < 0.01.

References

- Amighini, A., Rabellotti, R., & Sanfilippo, M. (2013). Do Chinese state-owned and private enterprises differ in their internationalization strategies? *China Economic Review*, 27, 312–325.
- Arndt, C., & Oman, C. (2006). *Uses and abuses of governance indicators*. Paris: Development Centre of the Organisation for Economic Co-operation and Development.
- Asiedu, E., & Lien, D. (2011). Democracy, foreign direct investment and natural resources. *Journal of International Economics*, 84(1), 99–111.
- Boisot, M., & Meyer, M. W. (2008). Which way through the open door? Reflections on the internationalization of Chinese firms. *Management and Organization Review*, 4(3), 349–365.
- Bräutigam, D. (2003). Close encounters: Chinese business networks as industrial catalysts in Sub-Saharan Africa. *African Affairs*, 102(408), 447–467.
- Brunnschweiler, C. N., & Bulte, E. H. (2008). The resource curse revisited and revised: A tale of paradoxes and red herrings. *Journal of Environmental Economics and Management*, 55(3), 248–264.
- Buckley, P. J. (2008). Do we need a special theory of foreign direct investment for extractive industries? *Journal of Chinese Economic and Foreign Trade Studies*, 1(2), 93–104.
- Buckley, P. J., Clegg, L. J., Cross, A. R., Liu, X., Voss, H., & Zheng, P. (2007). The determinants of Chinese outward foreign direct investment. *Journal of International Business Studies*, 38(4), 499–518.
- Buckley, P. J., Cross, A. R., Tan, H., Xin, L., & Voss, H. (2008). Historic and emergent trends in Chinese outward direct investment. *Management International Review*, 48(6), 715–748.
- Cameron, A. C., & Trivedi, P. (2013). *Regression analysis of count data*. Cambridge: Cambridge University Press.
- Chakrabarti, A. (2001). The determinants of foreign direct investments: Sensitivity analyses of cross-country regressions. *Kyklos*, 54(1), 89–114.
- Cheng, L. K., & Ma, Z. (2010). China's outward foreign direct investment. In R. C. Feenstra, & S. -J. Wei (Eds.), *China's growing role in world trade* (pp. 545–578). Chicago: University of Chicago Press.
- Cheung, Y. -W., & Qian, X. (2009). Empirics of China's outward direct investment. *Pacific Economic Review*, 14(3), 312–341.
- Child, J., & Rodrigues, S. B. (2005). The internationalization of Chinese firms: A case for theoretical extension? *Management and Organization Review*, 1(3), 381–410.
- Clague, C., Keefer, P., Knack, S., & Olson, M. (1996). Property and contract rights in autocracies and democracies. *Journal of Economic Growth*, 1(2), 243–276.
- Cuervo-Cazurra, A., & Genc, M. (2008). Transforming disadvantages into advantages: Developing-country MNEs in the least developed countries. *Journal of International Business Studies*, 39(6), 957–979.
- Dickson, B. J. (2007). Integrating wealth and power in China: The Communist Party's embrace of the private sector. *The China Quarterly*, 192, 827–854.
- Duanmu, J. -L. (2012). Firm heterogeneity and location choice of Chinese Multinational Enterprises (MNEs). *Journal of World Business*, 47(1), 64–72.
- Dunning, J. H. (1973). The determinants of international production. *Oxford Economic Papers*, 25(3), 289–336.
- Dunning, J. H. (1980). Towards an eclectic theory of international production: Some empirical tests. *Journal of International Business Studies*, 11(1), 9–31.
- Dunning, J. H., & Lundan, S. M. (2008). *Multinational enterprises and the global economy*. Cheltenham, UK; Northampton, MA: Edward Elgar.
- ECLAC (2011). *Foreign direct investment in Latin America and the Caribbean 2010*. Santiago: United Nations.
- ECLAC (2013). *Chinese foreign direct investment in Latin America and the Caribbean*. Santiago: United Nations.
- Ellis, R. (2012). Learning the ropes. *Americas Quarterly*, 6, 28–35.
- Erdener, C., & Shapiro, D. M. (2005). The internationalization of Chinese family enterprises and Dunning's eclectic MNE paradigm. *Management and Organization Review*, 1(3), 411–436.
- Fornes, G., & Butt-Philip, A. (2011). Chinese MNEs and Latin America: A review. *International Journal of Emerging Markets*, 6(2), 98–117.
- Gallagher, K. P., & Porzecanski, R. (2008). China matters: China's economic impact in Latin America. *Latin American Research Review*, 43(1), 185–200.
- Gao, H. M. (2009). Natural resources: Government support for Chinese companies' global hunt. In I. Alon, J. Chang, M. Fetscherin, C. Lattemann, & J. R. McIntyre (Eds.), *China rules: Globalization and political transformation* (pp. 233–252). London: Palgrave Macmillan.
- Gu, J. (2009). China's private enterprises in Africa and the implications for African development. *European Journal of Development Research*, 21(4), 570–587.
- Gu, J. (2011). The last golden land?: Chinese private companies go to Africa. *Working paper no. 365*. Brighton: Institute of Development Studies.
- Hilbe, J. M. (2011). *Negative binomial regression*. Cambridge: Cambridge University Press.
- Huang, Y. S. (2008). *Capitalism with Chinese characteristics: Entrepreneurship and the State*. New York: Cambridge University Press.
- Huang, Y., & Wang, B. (2011). Chinese outward direct investment: Is there a China model? *China & World Economy*, 19(4), 1–21.
- Hurst, L. (2011). Comparative analysis of the determinants of China's state-owned outward direct investment in OECD and non-OECD countries. *China & World Economy*, 19(4), 74–91.
- Jenkins, R., & Barbosa, A. de F. (2012). Fear for manufacturing? China and the future of industry in Brazil and Latin America. *The China Quarterly*, 209, 59–81.
- Jenkins, R., Peters, E. D., & Moreira, M. M. (2008). The impact of China on Latin America and the Caribbean. *World Development*, 36(2), 235–253.
- Kang, Y., & Jiang, F. (2012). FDI location choice of Chinese multinationals in East and Southeast Asia: traditional economic factors and institutional perspective. *Journal of World Business*, 47(1), 45–53.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2007). Worldwide governance indicators project. *Answering the critics Policy Research Working Paper 4149*. Washington, DC: World Bank.
- Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The worldwide governance indicators: Methodology and analytical issues. *Policy research working paper 5430*. Washington, DC: World Bank.
- Knack, S., & Keefer, P. (1995). Institutions and economic performance: Cross-country tests using alternative institutional measures. *Economics & Politics*, 7(3), 207–227.
- Kolstad, I., & Wiig, A. (2009). It's the rents, stupid! The political economy of the resource curse. *Energy Policy*, 37(12), 5317–5325.
- Kolstad, I., & Wiig, A. (2012). What determines Chinese outward FDI? *Journal of World Business*, 47(1), 26–34.
- Lederman, D., Mengistae, T., & Xu, L. C. (2010). Microeconomic consequences and macroeconomic causes of foreign direct investment in southern African economies. *Policy research working paper 5416*. Washington, DC: World Bank.
- Liou, C. (2014). Rent-seeking at home, capturing market share abroad: The domestic determinants of the transnationalization of China State Construction Engineering Corporation. *World Development*, 54, 220–231.
- Liu, G. S., & Sun, P. (2003). Identifying ultimate controlling shareholders in Chinese public corporations: An empirical survey. *Asia programme working paper no. 2*. London: Royal Institute of International Affairs.
- Liu, X., Xiao, W., & Huang, X. (2008). Bounded entrepreneurship and internationalisation of indigenous Chinese private-owned firms. *International Business Review*, 17(4), 488–508.
- Luo, Y., Xue, Q., & Han, B. (2010). How emerging market governments promote outward FDI: Experience from China. *Journal of World Business*, 45(1), 68–79.
- Mehlum, H., Moene, K., & Torvik, R. (2006). Institutions and the resource curse. *The Economic Journal*, 116(508), 1–20.
- Mesquita Moreira, M. (2007). Fear of China: Is there a future for manufacturing in Latin America? *World Development*, 35(3), 355–376.
- MIGA (2010). South–South foreign direct investment and political risk insurance: Challenges and opportunities. In K. P. Sauvant, W. A. Maschek, & G. A. McAllister (Eds.), *Foreign direct investments from emerging markets: The challenges ahead* (pp. 227–239). New York: Palgrave Macmillan.
- MOFCOM (2013a). *2012 statistical bulletin of China's outward foreign direct investment*. Beijing: Zhongguo tongji chubanshe.
- MOFCOM (2013b). http://wszw.hzs.mofcom.gov.cn/fecp/fem/corp/fem_cert_stat_view_list.jsp (Last access on May 18th 2013).
- Morck, R., Yeung, B., & Zhao, M. (2008). Perspectives on China's outward foreign direct investment. *Journal of International Business Studies*, 39(3), 337–350.
- Naudé, W. (2009). Rushing in where angels fear to tread? The early internationalization of indigenous Chinese firms. *Journal of Chinese Economic and Foreign Trade Studies*, 2(3), 163–177.
- Ning, L., & Sutherland, D. (2012). Internationalization of China's private-sector MNEs: An analysis of the motivations for foreign affiliate formation. *Thunderbird International Business Review*, 54(2), 169–182.
- North, Douglass C. (1991). Institutions. *The Journal of Economic Perspectives*, 5(1), 97–112.

- OECD (2008). *OECD investment policy reviews: China 2008*. Paris: Organisation for Economic Co-operation and Development.
- Pearson, M. (2005). The business of governing business in China: Institutions and norms of the emerging regulatory state. *World Politics*, 57(2), 296–322.
- Peters, E. D. (2013). Characteristics of Chinese overseas foreign direct investment in Latin America (2000–2012). *Contemporary International Relations*, 23, 105–129.
- Quer, D., Claver, E., & Rienda, L. (2011). Political risk, cultural distance, and outward foreign direct investment: Empirical evidence from large Chinese firms. *Asia Pacific Journal of Management*, 29(4), 1089–1104.
- Ramasamy, B., Yeung, M., & Laforet, S. (2012). China's outward foreign direct investment: Location choice and firm ownership. *Journal of World Business*, 47(1), 17–25.
- Rosser, A. (2006). The political economy of the resource curse: a literature review. *Working paper no. 268*. Brighton: Institute of Development Studies.
- Sanfilippo, M. (2010). Chinese FDI to Africa: What is the nexus with foreign economic cooperation? *African Development Review*, 22, 599–614.
- Shen, L. (2012). What makes China's investment successful in Africa: The entrepreneurial spirit and behavior of Chinese enterprises in transitional times. *Journal of Developmental Entrepreneurship*, 17(4), 1–25.
- Shen, X. (2013). Private Chinese investment in Africa: Myths and realities. *Policy research working paper 6311*. Washington, DC: World Bank.
- Song, H. (2011). Chinese private direct investment and overseas Chinese network in Africa. *China & World Economy*, 19(4), 109–126.
- Song, L., Yang, J., & Zhang, Y. (2011). State-owned enterprises' outward investment and the structural reform in China. *China & World Economy*, 19(4), 38–53.
- Sutherland, D., & Ning, L. (2011). Exploring "onward-journey" ODI strategies in China's private sector businesses. *Journal of Chinese Economic and Business Studies*, 9(1), 43–65.
- Torvik, R. (2002). Natural resources, rent seeking and welfare. *Journal of Development Economics*, 67(2), 455–470.
- Tulder, R. V. (2010). Toward a renewed stages theory for BRIC multinational enterprises? A home country bargaining approach. In K. P. Sauvant, W. A. Maschek, & G. A. McAllister (Eds.), *Foreign direct investments from emerging markets: the challenges ahead* (pp. 61–74). New York: Palgrave Macmillan.
- Voss, H., Buckley, P. J., & Cross, A. R. (2009). An assessment of the effects of institutional change on Chinese outward direct investment activity. In I. Alon, J. Chang, M. Fetscherin, C. Lattemann, & J. R. McIntyre (Eds.), *China rules: Globalization and political transformation* (pp. 135–165). London: Palgrave Macmillan.
- Williamson, O. E. (2000). The new institutional economics: Taking stock, looking ahead. *Journal of Economic Literature*, 38(3), 595–613.
- Xiao, G. (2004). People's Republic of China's round-tripping FDI: Scale, causes and implications. *Working paper no. 24*. Latin America/Caribbean and Asia/Pacific Economics and Business Association.
- Ye, M. (2014). China invests overseas: Regulation and representation. *Modern China Studies*, 21, 173–204.
- Yeo, Y. (2009). Between owner and regulator: Governing the business of China's telecommunications service industry. *The China Quarterly*, 200, 1013–1032.
- Zhang, G. R. (2010). *Zhongguo de ziyuan nengyuan lei jingwai touzi jiben wenti yanjiu [Study on China's overseas investment in energy and other natural resources]*. Beijing: Zhongguo jingji chubanshe.
- Zweig, D., & Jianhai, B. (2005). China's global hunt for energy. *Foreign Affairs*, 84(5), 25–38.