Foreign Direct Investments in Africa: Are Chinese investors different? ☆

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ABSTRACT

In light of the upsurge in Chinese investments in Africa since Deng's "Go Global" policy, we study whether the location choices of greenfield investors in Africa differ between Chinese and non-Chinese firms. We focus on risk- and information-related factors, i.e., investment protection provided by investment agreements and country-of-origin, industry, and internal agglomeration. We argue that Chinese firms enjoy ownership advantages that reduce their concern for risk. Our results show that Chinese firms are less sensitive to risk-mitigating factors compared to firms from advanced and other emerging economies. A lower reliance on internal agglomeration emerges as their distinctive trait in internationalization. We attribute this result to the systemic engagement of the Chinese government, which goes beyond state ownership and reduces the "liability of foreignness". Chinese firms also appear more market-seeking and manufacturing-oriented, aggressively pursuing knowledge spillovers. Contrary to common perceptions, they do not seem distinctively resource-seeking or to pursue unstable countries.

1. Introduction and background

The expanding influence of China in Africa is one of the most unprecedented and dramatic manifestations of how Deng Xiaoping's 1999 "Go Global" policy has incepted a new era for China and the world economy (Ghafar & Jacobs, 2019; Li, Van Assche, Li, & Qian, 2022). In just a couple of decades after its first oil-seeking investments in post-war Angola, China has become the top trade partner and one of the top 5 investors in most African countries (Burgis, 2014; UNCTAD, 2014), consolidating its strategic presence in North Africa—especially in Egypt, Algeria and Morocco (Ghafar & Jacobs, 2019)—and developing preferential ties with Sub-Saharan partners such as Ethiopia and Zambia (Kaplinsky & Morris, 2009; Lin & Xu, 2019). Chinese corporations such as the Huajian Industrial Holding Company, offshoring shoe production in Ethiopia and pioneering the first wave of relocated Chinese plants in Africa, are instances of a new generation of investors that are redefining global value chain relations, where previous FDI recipients turn into major sources of capital.

In this process, Chinese multinational enterprises (CMNEs henceforth) have relied on ownership advantages arising from government support and the ability to navigate opaque institutional environments via interpersonal and diplomatic networks (Buckley et al., 2007; Ramasamy, Yeung, & Laforet, 2012). As aggressively market-seeking as they are resource-seeking (Alon, Anderson, Munim, & Ho, 2018; Child & Rodrigues, 2005), CMNEs in Africa are gaining economic, diplomatic, and cultural influence while eroding the competitive ground of Western multinationals in the continent (Hung & Tseng, 2017; Mazé & Chailan, 2021). As Africa's fast-growing markets raise the interest of investors worldwide (The Economist, 2019), Chinese state capitalism in Africa stands out as an instance of "what is still emerging about emerging markets" that bears strategic implications for global economic and geopolitical equilibria.

Many studies have analyzed Chinese foreign direct investment (FDI) determinants, strategies, and ownership advantages. The results highlight that government support reduces investment risk, and some scholars have even argued that CMNEs have a preference for riskier environments (e.g., Buckley et al., 2007; Lu, Liu, Wright, & Filatotchev, 2014; Quer, Claver, & Rienda, 2018; Ramasamy et al., 2012). In African contexts, where political risk and corruption have long limited FDI (Asiedu, 2002; Bräutigam, 2003), government support may represent a critical competitive advantage (Buckley et al., 2007). However, it remains unclear whether Chinese state capitalism indeed translates into different

FDI determinants in Africa. Only a few of studies have systematically compared Chinese FDI determinants to those of other source countries (e.g., Chen, Dollar, & Tang, 2016; Kolstad & Wiig, 2011), and these did not find support for CMNE risk propensity in African contexts (Buckley et al., 2007 find similar results for the subset of developing countries). Hence, the centrality of these factors may be less representative of a Chinese specificity than of the African context. Faced with political instability and expropriation risk, investors may have to adapt their strategies (Asiedu, 2002) and resort to interpersonal networks, diplomatic relationships, and government support (Child & Rodrigues, 2005; Sutherland, Anderson, Bailey, & Alon, 2020), regardless of their country of origin (Andreff, 2016; Financial Times, 2016).

The ambiguity of previous results may be an empirical issue. Most studies focused on host country-level determinants, which may fail to capture the differential sensitivity of investors to risk (Duanmu, 2012; Helpman, Melitz, & Yeaple, 2004). The first contribution of this paper is to focus on the differential effect, for Chinese and non-Chinese investors, of firm- and investment-level factors that mitigate investment risk. Among these, we consider legal measures of investment protection, i.e., international investment agreements (IIAs), and less formalized ways of coping with uncertainty, i.e., prior firm experience in the country, country-of-origin agglomeration, and sectoral agglomeration. We expect government support to reduce the sensitivity of CMNEs to these factors. In fact, previous literature on the internationalization of CMNEs shows that home government support and pressure to go global reduces CMNEs' sensitivity to risk when investing abroad and influences their location choices, including agglomeration (Lu et al., 2014; Luo & Tung, 2007; Quer et al., 2018). In Africa, top Chinese greenfield investors such as Huawei and ZTE Corporation resort significantly less to intra-firm colocation compared to the main UK and French investors (*fDi Markets*).

The second contribution of our study is to distinguish whether the Chinese distinctiveness arises from a different evaluation of the same determinants, due, for example, to lower perceived risk (Amighini, Rabellotti, & Sanfilippo, 2013; Duanmu, 2012; Lu et al., 2014; Quer et al., 2018), or from a different composition of the investment portfolio (Duanmu, 2012; Lv & Spigarelli, 2016). To this end, we single out whether the operations run by a foreign subsidiary are resource-related, manufacturing, or market-related.[1] This allows us to compare the determinants of Chinese and non-Chinese investments within subsets of investments that pursue similar motives.

Finally, a side contribution of this paper is to compare CMNEs with MNEs from both advanced and emerging economies. Most studies have focused on China to study a prominent example of emerging-country MNEs (e.g., Buckley et al., 2007; Wang, Hong, Kafouros, & Wright, 2012). However, we can argue that CMNE characteristics are not immediately comparable to those of other emerging economies (e.g., Andreff, 2016; Holtbrügge & Kreppel, 2012).

Our empirical application draws on investment-level data from *fDi Markets* on 8,892 greenfield FDIs into 43 African destinations over the 2004–2017 period. We study their location choices via conditional logit models. In a context marked by severe data quality and completeness issues, we build a remarkably rich dataset that covers many investments, has specific information about their functions, and includes a comprehensive range of possible determinants.

Our results indicate that CMNEs rely significantly less on risk-mitigating factors such as previous experience in a country and investment agreements. This lower sensitivity mainly concerns FDI in services and manufacturing. Manufacturing FDIs also appear to pursue knowledge spillovers from other firms in the same industry. CMNEs as a whole are distinctively market-seeking but align with other countries when it comes to resource-seeking FDI.

The rest of this paper is structured as follows. The next section provides a theoretical framework and reviews the literature on Chinese FDI determinants in Africa, formulating testable hypotheses. Section 3 illustrates the empirical model and the data. Section 4 reports the results of the analysis and discusses their robustness. Section 5 presents some concluding remarks. In an Online Appendix, we provide detailed information on variable definitions and sources, as well as additional statistics and robustness checks.

2. Theoretical framework

2.1. Theoretical framework for Chinese FDI in Africa

Dunning's (1977) OLI paradigm predicts that firms will locate their foreign investments where the expected Ownership, Location, and Internalization advantages best serve their strategic objectives.[2] Ownership advantages refer to investors' tangible and intangible assets, which are more or less effectively exploited internationally depending on the characteristics of the host country, i.e., location advantages. Internalization advantages concern the relative profitability of FDI over market transactions. In turn, the effect of particular location advantages depends on the underlying FDI motives. Market-seeking FDIs react to large local and regional markets and distribution networks; efficiency-seeking FDIs pursue factors (such as labor costs) that rationalize the value chain and improve MNE competitiveness; resource-seeking FDIs pursue access to natural resources, such as raw materials and energy. Strategic asset-seeking FDIs pursue intangible assets in the host country to realize their strategic objectives. Internalization and transaction-cost theories emphasize the specific costs of running a business transnationally and the role of the "liability of foreignness" in internationalization choices (Buckley & Casson, 1976; Hymer, 1976; Nachum, 2003; Rugman, 1981).

Over the years, this paradigm proved helpful in explaining the location choices for FDI in developing countries, and particularly in Africa. We summarize the main contributions to the determinants of Chinese FDI in Africa in Online Appendix Table A.1. Consistent results on the role of market size and human capital, driven by the growing middle and upper classes, confirm the importance of market-seeking and efficiency-seeking motives in these economies (see, for example, Asiedu, 2006; Cleeve, Debrah, & Yiheyis, 2015; Lederman, Mengistae, & Xu, 2010; Nunnenkamp & Spatz, 2002). The literature on Africa also emphasizes resource-seeking motives relating to the abundance of oil, copper, gas, and mineral ores, as well as agricultural land (Ross et al., 2015; Shan, Lin, Li, & Zeng, 2018; Zhang, Wei, & Liu, 2013), while also pointing out that natural resources alone are not enough to attract FDI (e.g., Asiedu, 2006; Rodriguez-Pose & Cols, 2017).

In developing economies, factors relating to the liability of foreignness, such as low infrastructure development and unsafe business environments, often represent significant location disadvantages (Asiedu, 2002; Kinda, 2010; Kok & Acikgoz Ersoy, 2009). According to Asiedu (2002, 2006), foreign firms with high levels of asset exposure and superior technology perceive African countries—especially Sub-Saharan ones—to be too risky as destinations, fearing capital and property rights appropriation (Brouthers, 2002; Duanmu, 2014; Jiang, Holburn, & Beamish, 2014).

Initially devised to explain FDI from advanced-country MNEs, the OLI paradigm may be less accurate in predicting the particularities of MNEs from emerging countries (EMNEs henceforth), especially when they invest in emerging and developing countries (Buckley et al., 2007; Mathews, 2006). In particular, CMNEs enjoy ownership advantages that traditional approaches tend to neglect. In Africa, the Chinese government actively promotes the internationalization of MNEs

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[1] We interchangeably refer to the type of operation run by a foreign subsidiary as "industry activity", "activity", "function", or "sector".

[2] For a recent review of theories and findings on the drivers behind FDI, see Nielsen, Asmussen, and Weatherall (2017).

in strategic industries, such as natural resources and ICT (Barbieri, Di Tommaso, Tassinari, & Marozzi, 2019; Davies, 2013). It also exerts control over private firms going abroad via a careful approval system of FDI projects (Li et al., 2022; Lu et al., 2014; Luo, Xue, & Han, 2010) and supports FDI with ambitious infrastructure plans like the Belt and Road Initiative (Sutherland et al., 2020).

These ownership advantages imply that CMNEs—and particularly state-owned enterprises (SOEs)—investing in Africa face less uncertainty than other investors (Amighini et al., 2013; Duanmu, 2012). For instance, SOEs can count on government bailout if they encounter financial difficulties and use political relationships and diplomacy to reduce the risk of expropriation (Duanmu, 2014; Li & Liang, 2012; Quer et al., 2018). Sutherland et al. (2020) and Mazé and Chailan (2021) highlight that elites in institutionally fragile countries can be more easily corrupted and aligned with the home-country government's objectives, especially in the context of major infrastructure projects. More broadly, private Chinese firms investing abroad enjoy preferential treatment in terms of taxes and funding when they comply with centrally planned strategic objectives, which is likely to reduce risk aversion and credit constraints for investors as a whole, and not only for SOEs (Gaur, Ma, & Ding, 2018; Lu et al., 2014; Luo et al., 2010).

2.2. Hypotheses development

If government support reduces risk, CMNEs may react differently to risk-mitigating location factors. Previous studies on the African context neglected that the perception of risk can be substantially different across investors in different sectors with different characteristics (Duanmu, 2012; Helpman et al., 2004, see Online Appendix Table A.1); hence, firm- and investment-specific location factors may better capture heterogeneous responses to risk. Among these, the literature on Chinese FDI has identified agglomeration economies (internal agglomeration, industry agglomeration, and country-of-origin agglomeration) and international investment agreements. Whereas IIAs set explicit provisions to protect foreign investors, the agglomeration of previous investments mitigates the actual and perceived risk by reducing the cost of collecting information about the destination and facilitating access to business networks (Hertenstein, Sutherland, & Anderson, 2017; Lu et al., 2014; Quer et al., 2018).

Internal agglomeration

Firm location in a foreign country is a costly decision that is difficult to alter (Duanmu, 2012). *Internal agglomeration*, i.e., the tendency to re-locate new investments where a firm has previous entry experience (Alcácer & Delgado, 2016; Defever, 2012), reduces sunk costs and offers information advantages for subsequent investments. It allows firms to rely on existing organizational routines, collaborations with local firms, distribution networks, and local customers (Yuan & Pangarkar, 2010). From a knowledge-based perspective, it represents a difficult-to-imitate firm-specific asset that reduces risk and costs and, ultimately, the liability of foreignness (Lu et al., 2014).

Drawing on Lu et al. (2014) and Quer et al. (2018), we expect government support and state ownership to decrease the importance of this factor for CMNEs. Indeed, as part of its overseas investment strategies, the Chinese government produces strategic plans and guidelines for investors (Luo et al., 2010). MNEs complying with the guidelines enjoy preferential treatment in terms of funding, taxes, tariffs, and foreign exchange, and can access information about the destination (Lu et al., 2014). An instance of this is the special economic zone established jointly by the Chinese and Egyptian governments in Suez, where a "one-stop-shop" building centralizes administrative services to reduce red tape and institutional costs (Sutherland et al., 2020). In addition, the government supports MNEs in litigation against host-country governments and promotes practical FDI promotion initiatives (Bräutigam & Tang, 2014). Finally, Chinese investments, and especially those from state-owned firms, are intertwined with their government's "debtbook

diplomacy" (Ghafar & Jacobs, 2019). The so-called "Angola-model", first implemented in that country as a strategy to exchange natural resources for infrastructure projects, became a framework for Chinese activities across Sub-Saharan Africa (SSA). Through China's EXIM Bank, the Chinese government provides conditionality-bound loans and aid and engages in competitive tenders for major infrastructural and resource projects that bind host countries to long-term cooperation with China. These interventions effectively prepare the ground for future investments in multiple sectors (Biggeri & Sanfilippo, 2009; Kaplinsky & Morris, 2009; Mazé & Chailan, 2021). As reported by Mazé and Chailan (2021), in 2013 Sinopec negotiated multi-billion dollar contracts with the Gabonese authorities for the construction of dams and a railway in the Simandou mine and for the exploitation of forests, while simultaneously offering bids for the acquisition of three oil fields. The authors identify the same bundling practices in the behavior of Citic and Chinalco investing in different industries in Algeria and Guinea. In Morocco, the Memorandum of Understanding between the China Communications Construction Company and Morocco's BMCE Bank for the construction of the "Mohammed VI Tangier Tech City", which is expected to become the largest Chinese investment project in North Africa, was followed by FDI from major Chinese automobile manufacturing companies such as BYD, Citic Dicastal, and Aotecar New Energy Technology (Ghafar & Jacobs, 2019). These transactions are often negotiated directly by the Chinese government with high-level host-country institutions, regardless of the private or state-owned nature of the contracting firm.

Overall, we expect the strong engagement of the Chinese government to protect CMNEs against political instability and expropriation risk. Compared with atomistic investors from other countries, they may offset the information and cost advantages arising from internal agglomeration:

H1: Internal agglomeration influences Chinese FDI less than non-Chinese FDI in Africa.

Country-of-origin agglomeration

Country-of-origin agglomeration, i.e., the co-location of firms from the same country of origin, is an established location factor in the literature because it helps build trust between newcomers and local businesses and allows smoother information flows about the local context and its formal and informal institutions. Ultimately, it partly substitutes for direct firm experience and reduces the "liability of outsidership" of new investors (e.g., Haveman, 1993; Head, Ries, & Swenson, 1999; Johanson & Vahlne, 2009; Tan & Meyer, 2011).

Quer et al. (2018) argue that the lower level of risk faced by Chinese SOEs decreases the importance of country-of-origin agglomeration in their location decisions. Beyond SOEs, we argue that CMNEs as a whole are comparatively effective in dealing with information and enforcement costs and institutional voids in African countries. The number of "comprehensive strategic partnership" agreements with African countries (Ghafar & Jacobs, 2019), their familiarity with weak institutional environments, and their commercial strategy based mainly on informal networks and "soft power" will reduce these costs. "People-to-people" networks (*guanxi* in Chinese) drove the penetration of CMNEs in North Africa and are central to the deployment of the Belt and Road Initiative (Ghafar & Jacobs, 2019). The "soft" Chinese penetration also involves investment in the cultural dimension, with more than 40 Confucius Institutes opened in different African countries (Akhtaruzzaman, Berg, & Lien, 2017) and media hubs being established as well. In 2012, Chinese Central Television (CCTV) chose Nairobi to locate its first broadcast hub outside of China, CCTV Africa.[3] Furthermore, the Chinese

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[3] country.eiu.com/article.aspx?articleid=272200811&Country=Burundi&topic=Politics_1

government offers scholarships and training programs to African citizens.[4] As a result, surveys indicate that opinions about China are remarkably positive among young Africans (Carr, 2020).

Overall, we expect these factors to substitute for country-of-origin agglomeration:

H2: Country-of-origin agglomeration influences Chinese FDI less than non-Chinese FDI in Africa.

Industry agglomeration

Information gains also arise from locating close to other firms operating in the same industry, i.e., *industry agglomeration*. Proximity is associated with "Marshallian" externalities, i.e., access to knowledge spillovers, specialized labor, and suppliers (Krugman, 1991; Marshall, 1920). This type of agglomeration has ex-ante ambiguous effects on location. On the one hand, strategic asset-seeking MNEs tend to be sensitive to industry-specific knowledge (Fujita & Thisse, 1996). On the other hand, industry agglomeration brings competition. In African contexts, strategic asset-seeking motives may be less central for advanced economies aiming to exploit growing markets as first movers (Ramasamy et al., 2012). This would imply a negative effect of industry agglomeration.

Different considerations may apply to MNEs from China and other emerging countries. As latecomers in their industries, EMNEs must accelerate their pace of internationalization to access resources and capabilities they lack at home. Government support, familiarity with opaque institutional contexts, and production-cost advantages allow them to adopt higher-risk targets than advanced-country MNEs, emphasizing strategic objectives over political and economic risk (Child & Rodrigues, 2005; Luo & Tung, 2007; Mathews, 2006). Cheru and Obi (2011) describe the Chinese investment strategy in Africa as based on the principle of "'twinning' the laggard Chinese manufacturers with the leaders in joint projects" (p. 74), where CMNEs have an opportunity to learn by participating in joint projects with companies from advanced countries. These considerations suggest that CMNEs may be more sensitive to the presence of industry agglomeration than investors from other countries:

H3: Industry agglomeration influences Chinese FDI more than non-Chinese FDI in Africa.

International investment agreements

International investment agreements (IIAs) are formal mechanisms to cope with investment risk that may also play a role in the decision to invest in Africa (Dunning, 1998), although their effectiveness is debated (Bankole & Adewuyi, 2013; Benfratello, D'Ambrosio, & Sangrigoli, 2022; Beri & Nubong, 2021; Lejour & Salfi, 2015). Most IIAs are bilateral investment treaties regarding the promotion and protection of FDI. Other IIAs include economic partnerships, free-trade agreements, and preferential trade and investment agreements. African countries faced with credibility problems may resort to IIAs to signal their trustworthiness and protect investors against the risk of expropriation and unfair treatment (Kerner, 2009).

Duanmu (2014) finds that the strength of political ties effectively protects Chinese SOEs from expropriation risk. From our above discussion about risk factors, we generalize this argument. We expect that CMNEs that rely on the systemic protection of their government face an overall lower risk of expropriation compared to atomistic investors from other countries:

H4: IIAs with the host country influence Chinese FDI less than non-Chinese FDI.

Political stability

Based on the above arguments, we may expect CMNEs in Africa to be less vulnerable to the host country's political risk. Influential works by Cuervo-Cazurra (2006) and Buckley et al. (2007) argue that this is the case, due to government support and familiarity with opaque institutional environments. However, studies focusing on Africa, where politically unstable countries are often rich in natural resources, tend not to identify significant differences between Chinese and Western investors. The findings of Kolstad and Wiig (2011) and Fiodendji and Evlo (2015) suggest that Chinese and non-Chinese FDIs alike are more resource-seeking than attracted to political instability. Chen et al. (2016) and Landry (2019) find positive stability effects for both Western and Chinese investments, although Chinese FDIs are less reluctant to target unstable countries and seem to benefit from corruption. These considerations lead us to our fifth hypothesis:

H5: Chinese FDIs in Africa are positively but less strongly related to political stability in host countries than non-Chinese FDIs.

Natural resources and market size

In the African context, Chen et al. (2016) show that CMNEs pursue profit and comparative advantage just like other investors. Nonetheless, several authors have highlighted the role of natural resources and market size for Chinese FDI (Buckley et al., 2007; Cheung & Qian, 2009; Ramasamy et al., 2012). Hence, a distinctive effect of natural resources and market size would imply different "tastes", i.e., that these factors contribute differently to the utility of CMNEs (Bräutigam, Diao, McMillan, & Silver, 2014; Cheung, De Haan, Qian, & Yu, 2012; Shen, 2015). This may indeed be the case, given CMNEs' aggressive market-seeking strategies (Buckley et al., 2007; Taylor, 2002) and their domestic scarcity of resources (Lunding, Lanzeni, Trinh, Giesel, & Walter, 2006; Zhan, 1995). However, the few studies that compare Chinese and non-Chinese investors in Africa fail to identify a distinctive market and resource-seeking orientation for CMNEs (Chen et al., 2016; Kolstad & Wiig, 2011; Landry, 2019). Landry (2019) even finds Chinese investors to be comparatively less market-seeking. These ambiguities suggest that the African context, rather than the Chinese origin, may drive a difference in the composition of the FDI portfolio and attracts mainly resource- and market-seeking FDIs, regardless of origin. We argue that different "tastes" should translate into differential effects of these determinants within motives, while composition should not:

H6a: Chinese FDIs in Africa are positively related to the availability of natural resources in host countries, similarly to non-Chinese FDI with similar motives.

H6b: Chinese FDIs in Africa are positively related to the presence of large and/or growing markets in host countries, similarly to non-Chinese FDIs with similar motives.

3. Empirical application

3.1. Empirical model

We study the location choice of FDI in African countries via conditional logit models (Train, 2009). The logic behind these models is that the investor will choose the location that yields the highest possible utility. We model utility as a linear function of alternative-specific regressors. Specifically, investment n from country o in African destination country i at time t will obtain utility $U_{niot} = \delta' w_{niot} + \epsilon_{niot}$, where w_{niot} is a vector of location factors varying by destination and investment destination, δ is a parameter vector to be estimated, and the error term ϵ_{niot} is iid extreme value. A particular investment will locate in country i if the utility yielded by locating in i exceeds that of locating in all other African countries $j \neq i$. Each of the N investments involves the choice of where to locate among the set of J African countries (i.e., the countries chosen at least once as an FDI destination). Hence, we consider $J \times N$ choices in total. The dependent variable *"Choice"*
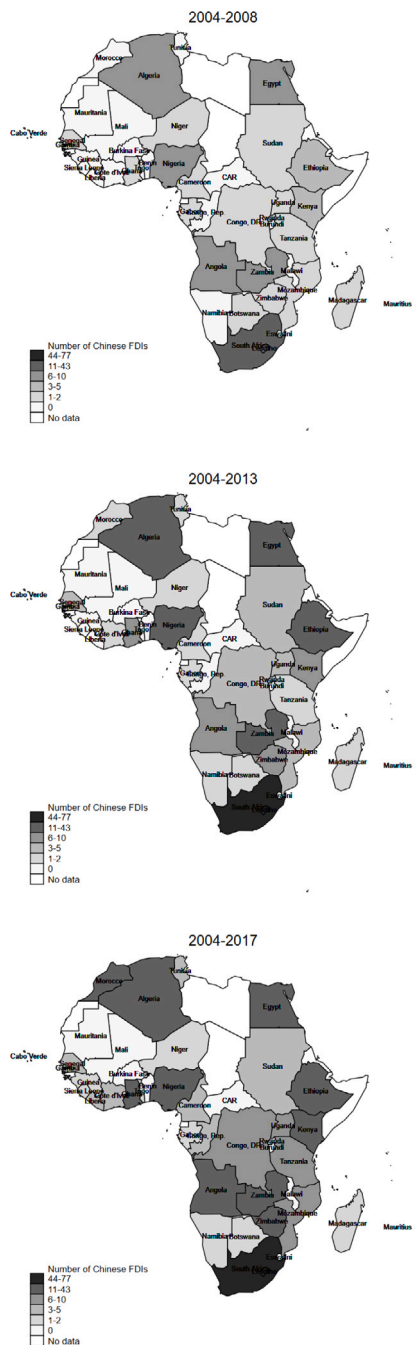
Fig. 1. Distribution of Chinese FDI across 3 periods.
Source: Own elaboration on *fDi Markets* data.

equals one if a specific alternative was selected and zero for the other alternatives. The probability of choosing i takes the following form:

$$P_{niot} = P(\text{Choice}_{niot} = 1 | x, y, z) = \frac{e^{\delta' w_{niot}}}{\sum_j e^{\delta' w_{njot}}} \tag{1}$$

This probability only depends on the difference in utility between alternatives. Decision-maker attributes that do not vary across alternatives (e.g., the FDI origin country, the amount of capital invested) do not affect the choice. Hence, their effects are not estimated unless in interaction (see Train, 2009). This is equivalent to including investment fixed effects.

To study whether FDI determinants are different for CMNEs, we interact all our regressors with a dummy *China* equal to 1 if the origin country o of investment n is China and zero otherwise, and we specify the observable component of utility as follows:

$$V_{niot} = \delta' w_{niot} + \tilde{\delta}'(w_{niot} \times \text{China}_{no}) \tag{2}$$

Hence, the effect of regressor w_{niot} on the utility of locating investment n in country i at time t is $(\delta + \tilde{\delta})$ if the origin country is China and δ otherwise. The interaction effects indicate the specificity of CMNEs relative to other investors and represent our coefficients of interest. The marginal effects of the interactions are similar to linear regression, with the estimated coefficients being multiplied by a factor $P_{niot}(1 - P_{niot})$ (Train, 2009).

To address endogeneity concerns, which are most pressing for *internal agglomeration*, we resort to a control-function approach (Wooldridge, 2015) and instrument the variable with the number of FDIs predicted by strictly exogenous variables and firm fixed effects (building on a similar intuition to Lu et al. 2014; see Online Appendix A.1 for more details). This approach allows us to separate the exogenous effect of co-location (i.e., the pure risk-mitigating effect of going back to the same country if a firm has already invested there) from the effect of other unobservable firm-level factors correlating with it, e.g., the possibility that a particular sequence of investments in the same country is part of a broader strategy enacted by the investor.

3.2. Sample and variables

The set of variables that we include in our empirical model is meant to capture factors that enter the objective function of the investor (Spies, 2010). Since the African context is marked by substantial issues of data quality and completeness, for each location factor we carefully balance theoretical relevance, empirical added value, and data quality considerations, combining several data sources. The result of this process is a remarkably rich database that allows us to control for a broad range of location factors while counting on a good level of data quality over a relatively long period. Our final dataset covers 8,892 greenfield FDIs into 43 African destinations over the 2004–2017 period.

Table 1 summarizes the dependent variable, the variables of interest, the control variables, and the relevant data sources. Detailed information on the sample and dataset used for the analysis is available in Online Appendix A.

As mentioned, our binary dependent variable *Choice* equals 1 if investment n is located in country i and 0 otherwise, following standard practice in location-choice models (e.g., Alcácer & Chung, 2007), and is drawn from *fDi Markets*. FDIs in Africa are highly concentrated, with 50% of projects directed to only four destinations, i.e., South Africa (about 20%), Morocco, Egypt, and Nigeria (around 9%–10% each). 73% of all investments originate from advanced economies, 25% from emerging countries, and the rest from developing countries. Fig. 1 shows the evolution in the number of Chinese FDIs across the African destinations in our sample. At the beginning of the period (2004–2008), Chinese investments mainly targeted South Africa, Nigeria, and Egypt. Over the years, China has consolidated its presence in North Africa with Egypt, Algeria, and Morocco. According to Ghafar and Jacobs (2019), FDIs in North African countries represent strategic platforms from which to enter the European market, thanks to their geographic position and investments in infrastructure development. Over time, other destinations have developed specific ties with China. This is the case of Ethiopia, where China is the leading country of origin, largely relying on SEZs to invest in labor-intensive shoe manufacturing, textiles, and leather goods processing, both to serve the local market and for export (Crescenzi & Limodio, 2021; Lin & Xu, 2019). In Zambia,

Table 1
Variable description and data sources.

Variable	Description	Data source
Choice	1 if investment takes place	fDi Markets
Internal agglo	No. of FDIs from same firm from 2003 to t−1	fDi Markets
Country-of-origin agglo	No. of FDIs from same origin from 2003 to t−1	fDi Markets
Industry agglo	No. of FDIs in same industry from 2003 to t−1	fDi Markets
IIA	1 if an IIA is in force between destination and origin in year t	UNCTAD Investment Policy Hub
FDI stock	FDI stocks in destination i in 2002 (billion USD)	UNCTAD WIR Annex tables
Ores exports 2002	Share of ores exports on total merchandise exports in 2002	World Development Indicators (WDI)
Fuel exports 2002	Share of fuel exports on total merchandise exports in 2002	World Development Indicators (WDI)
Political stability	Political stability index	Worldwide Governance Indicators (WGI)
GDP growth	GDP growth (annual %)	World Development Indicators (WDI)
Log population	Log of population	World Development Indicators (WDI)
Human capital	Human capital index	Penn World Tables (PWT)
Infrastructure	Africa Infrastructure Development Index (AIDI)	African Development Bank
Log distance	Log of great-circle distance between destination and origin capitals	CEPII
Common language	1 if a language is spoken by at least 9% of the population in both the destination and origin country	CEPII
Colony	1 if destination and origin country ever shared a colonial tie	CEPII
Log exports	Log of bilateral exports value (from Africa)	WITS
Log imports	Log of bilateral imports value (to Africa)	WITS
Log immigrants	Log of bilateral stock of immigrants (to Africa)	World Bank migration data
Log emigrants	Log of bilateral stock of emigrants (from Africa)	World Bank migration data
South Africa	1 if the destination country is South Africa	
Egypt	1 if the destination country is Egypt	
China	1 if the investing firm is from China	

Table 2
Summary statistics.

Variable	Mean	Std. Dev.	Min	Max
Internal agglo$_{i,n,t-1}$	0.04	0.58	0.00	69.00
Country-of-origin agglo$_{i,o,t-1}$	6.01	20.78	0.00	351.00
Industry agglo$_{i,n,t-1}$	16.56	38.16	0.00	521.00
IIA$_{o,I,t-1}$	0.72	0.45	0.00	1.00
FDI stock$_{i,2002}$	3.88	7.54	−0.28	35.88
Ores exports$_{i,2002}$	14.49	21.60	0.11	73.87
Fuel exports$_{i,2002}$	15.17	26.29	0.00	95.70
Political stability$_{i,t-1}$	−0.55	0.86	−2.70	1.20
GDP growth$_{i,t-1}$	4.79	4.23	−36.70	20.72
Log population$_{i,t-1}$	16.29	1.30	13.04	19.04
Human capital $_{i,t-1}$	1.81	0.41	1.10	2.86
Infrastructure$_{i,t-1}$	9.50	10.17	0.55	56.51
Log distance$_{o,i}$	8.71	0.59	2.35	9.85
Common language$_{o,i}$	0.29	0.45	0.00	1.00
Colony$_{o,i}$	0.09	0.29	0.00	1.00
Log exports$_{I,o,t-1}$	9.73	3.27	0.00	17.48
Log imports$_{i,o,t-1}$	10.70	2.51	0.00	16.64
Log immigrants$_{i,o,t-1}$	3.12	3.44	0.00	14.19
Log emigrants$_{i,o,t-1}$	5.59	4.00	0.00	14.19
China$_o$	0.04	0.20	0.00	1.00

Note: The number of observations for all variables is 365,958.

China is the third-largest investor, engaging in intensive extractive activities exceeding the share of advanced countries. More details about our descriptive statistics and the primary investment characteristics in our sample are available in the Online Appendix.

As discussed in Section 2.2, our main regressors of interest are those related to firm- and investment-specific responses to risk, i.e., agglomeration economies and IIAs. As for agglomerations, for each investment in year t we compute the cumulated number of investments from the same firm (*internal agglomeration*), from the same origin country (*country-of-origin agglomeration*), or in the same activity (*industry agglomeration*) as investment n in destination country i between 2003 (the first year in our dataset) and year $t − 1$. As for international investment agreements, *IIA* is a dummy equal to 1 if in year $t − 1$ a bilateral trade agreement or another treaty with investment provisions was in force between destination country i and the source country of investment n, and zero otherwise.

Based on our discussion of H5, H6a, and H6b, we also study location factors that have been argued to play a particular role for CMNEs.

These are host-country-level determinants referring to the level of institutional quality (*political stability,* Chen et al., 2016; Landry, 2019; Lu et al., 2014), the availability of natural resources (*fuel exports 2002* and *ores exports 2002,* Asiedu, 2006; Rodriguez-Pose & Cols, 2017) and the presence of large and growing markets, proxied by the population size (*log population*) and *GDP growth* (Fiodendji & Evlo, 2015; Lederman et al., 2010). We include *fuel exports 2002* and *ores exports 2002* along with their quadratic terms to allow for diminishing returns in their effects.

Finally, we include a set of control variables encompassing the established location factors included in Buckley et al. (2007) and Ramasamy et al. (2012) and widely used in the literature on the determinants of FDI in Africa. We provide a detailed description of the included control variables and their sources, construction, and rationale for inclusion in Online Appendix A.

Table 2 reports summary statistics for the variables used in our empirical model, and Table 3 their correlation matrix.

Table 3

Correlation matrix.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Choice$_{n,i,o,t}$	1.000																						
2	Internal agglo$_{n,i,t-1}$	0.146	1.000																					
3	Industry agglo$_{n,i,t-1}$	0.217	0.133	1.000																				
4	Country-of-origin agglo$_{i,o,t-1}$	0.178	0.081	0.500	1.000																			
5	IIA$_{i,o,t-1}$	0.026	0.019	0.099	0.040	1.000																		
6	FDI stock$_{i,2002}$	0.217	0.084	0.455	0.593	0.052	1.000																	
7	Ores exports$_{i,2002}$	−0.031	−0.016	−0.063	−0.092	−0.029	−0.118	1.000																
8	Fuel exports$_{i,2002}$	0.046	0.042	0.101	0.165	0.021	0.382	−0.238	1.000															
9	Political stability$_{i,t-1}$	−0.005	−0.004	−0.014	−0.041	−0.026	−0.119	−0.109	−0.234	1.000														
10	GDP growth$_{i,t-1}$	0.004	−0.001	−0.053	−0.064	0.013	−0.042	0.059	−0.030	0.060	1.000													
11	Log population$_{i,t-1}$	0.125	0.052	0.238	0.350	0.075	0.473	−0.018	0.256	−0.555	0.149	1.000												
12	Human capital $_{i,t-1}$	0.089	0.026	0.235	0.310	0.012	0.293	−0.040	0.153	0.323	−0.100	−0.147	1.000											
13	Infrastructure$_{i,t-1}$	0.072	0.018	0.151	0.213	0.039	0.272	−0.180	−0.006	0.296	−0.061	−0.160	0.529	1.000										
14	Log distance$_{o,i}$	−0.064	−0.017	−0.066	−0.052	−0.325	−0.060	0.029	−0.112	0.109	0.002	−0.107	0.036	−0.028	1.000									
15	Common language$_{o,i}$	0.072	0.039	0.190	0.046	0.033	0.070	0.012	−0.009	0.089	0.016	−0.007	0.224	0.181	−0.019	1.000								
16	Colony$_{o,i}$	0.048	0.039	0.201	0.013	0.200	0.015	−0.009	−0.002	0.020	−0.015	−0.018	0.037	0.014	−0.093	0.342	1.000							
17	Log exports$_{i,o,t-1}$	0.131	0.057	0.352	0.318	0.076	0.429	−0.098	0.311	−0.060	0.021	0.348	0.292	0.118	−0.030	0.121	0.187	1.000						
18	Log imports$_{i,o,t-1}$	0.147	0.067	0.377	0.319	0.088	0.413	−0.068	0.302	−0.099	0.051	0.399	0.171	0.089	−0.127	0.095	0.208	0.713	1.000					
19	Log immigrants$_{i,o,t-1}$	0.121	0.052	0.281	0.172	0.128	0.201	0.007	0.041	−0.020	0.072	0.273	0.225	−0.123	0.314	0.332	0.350	0.376	1.000					
20	Log emigrants$_{i,o,t-1}$	0.109	0.051	0.314	0.152	0.333	0.230	−0.043	0.140	−0.114	0.050	0.269	0.063	0.058	−0.225	0.275	0.292	0.406	0.462	0.424	1.000			
21	South Africa$_i$	0.184	0.055	0.395	0.486	0.006	0.651	−0.011	−0.031	0.088	−0.076	0.174	0.261	0.059	0.091	0.053	0.018	0.217	0.207	0.253	0.073	1.000		
22	Egypt$_i$	0.080	0.028	0.143	0.220	0.070	0.359	−0.069	0.141	−0.099	−0.020	0.238	0.211	0.681	−0.091	0.091	0.010	0.154	0.177	0.176	0.112	−0.024	1.000	
23	China$_o$	−0.001	0.004	−0.020	0.019	−0.162	−0.001	0.000	−0.002	−0.003	−0.016	0.002	0.013	−0.000	0.204	−0.134	−0.067	0.126	0.202	0.030	−0.070	0.001	−0.001	1.000

Table 4
Baseline results.

	Model 1: All	Model 2: All		Model 3: China	Model 4: Control function	
		Main	Interaction	China only	Main	Interaction
Internal agglo$_{n,i,t-1}$	0.515 ***	0.541 ***	−0.420 ***	0.121	0.471 ***	−0.340 ***
	(0.021)	(0.021)	(0.095)	(0.093)	(0.023)	(0.104)
Country-of-origin agglo$_{i,o,t-1}$	0.002 ***	0.002 ***	−0.019 ***	−0.017 **	0.002 ***	−0.021 ***
	(0.000)	(0.000)	(0.007)	(0.007)	(0.000)	(0.007)
Industry agglo$_{n,i,t-1}$	0.001 ***	0.001 ***	0.002	0.003 ***	0.002 ***	0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)
IIA$_{i,o,t-1}$	0.132 ***	0.153 ***	−0.331 *	−0.178	0.151 ***	−0.333
	(0.048)	(0.052)	(0.192)	(0.185)	(0.057)	(0.207)
FDI stock$_{i,2002}$	0.071 ***	0.072 ***	−0.051	0.021	0.051 ***	−0.067
	(0.007)	(0.007)	(0.050)	(0.049)	(0.008)	(0.054)
FDI stock$^2_{i,2002}$	−0.002 ***	−0.002 ***	0.001	−0.001	−0.001 ***	0.001
	(0.000)	(0.000)	(0.002)	(0.002)	(0.000)	(0.002)
Ores exports$_{i,2002}$	0.013 ***	0.013 ***	0.016	0.029	0.013 ***	0.024
	(0.003)	(0.003)	(0.022)	(0.022)	(0.004)	(0.023)
Ores exports$^2_{i,2002}$	−0.0002 ***	−0.0002 ***	−0.0000	−0.0002	−0.000 ***	−0.000
	(0.0000)	(0.0000)	(0.0003)	(0.0003)	(0.000)	(0.000)
Fuel exports$_{i,2002}$	0.014 ***	0.013 ***	0.010	0.023	0.016 ***	0.006
	(0.003)	(0.003)	(0.017)	(0.017)	(0.003)	(0.018)
Fuel exports$^2_{i,2002}$	−0.0002 ***	−0.0002 ***	0.0000	−0.0002	−0.000 ***	0.000
	(0.0000)	(0.0000)	(0.0002)	(0.0002)	(0.000)	(0.000)
Political stability$_{i,t-1}$	0.275 ***	0.283 ***	0.0510	0.334 **	0.307 ***	0.093
	(0.026)	(0.026)	(0.150)	(0.148)	(0.029)	(0.165)
GDP growth$_{i,t-1}$	0.037 ***	0.036 ***	0.025	0.062 ***	0.031 ***	0.007
	(0.004)	(0.004)	(0.023)	(0.023)	(0.005)	(0.025)
Log population$_{i,t-1}$	0.621 ***	0.609 ***	0.306 *	0.915 ***	0.633 ***	0.297 *
	(0.027)	(0.028)	(0.164)	(0.161)	(0.029)	(0.171)
Human capital $_{i,t-1}$	0.266 ***	0.255 ***	0.708 **	0.963 ***	0.205 ***	0.770 **
	(0.052)	(0.053)	(0.297)	(0.292)	(0.057)	(0.312)
Infrastructure$_{i,t-1}$	0.039 ***	0.038 ***	−0.010	0.028	0.039 ***	−0.006
	(0.004)	(0.004)	(0.024)	(0.024)	(0.004)	(0.025)
Log distance$_{o,i}$	−0.080 ***	−0.074 **	−2.701 **	−2.775 **	−0.079 **	−3.176 ***
	(0.030)	(0.031)	(1.086)	(1.086)	(0.033)	(1.200)
Common language$_{o,i}$	0.232 ***	0.232 ***			0.213 ***	
	(0.036)	(0.036)			(0.039)	
Colony$_{o,i}$	0.354 ***	0.340 ***			0.249 ***	
	(0.057)	(0.057)			(0.062)	
Log exports$_{i,o,t-1}$	0.039 ***	0.039 ***	0.014	0.053	0.045 ***	−0.009
	(0.008)	(0.008)	(0.066)	(0.065)	(0.009)	(0.071)
Log imports$_{i,o,t-1}$	0.256 ***	0.257 ***	−0.184 *	0.072	0.242 ***	−0.080
	(0.013)	(0.014)	(0.104)	(0.103)	(0.014)	(0.110)
Log immigrants$_{i,o,t-1}$	0.039 ***	0.042 ***	−0.095 ***	−0.053 **	0.048 ***	−0.122 ***
	(0.005)	(0.005)	(0.026)	(0.025)	(0.005)	(0.029)
Log emigrants$_{i,o,t-1}$	0.067 ***	0.066 ***	0.128	0.194 **	0.060 ***	0.153
	(0.006)	(0.006)	(0.095)	(0.095)	(0.006)	(0.106)
South Africa$_i$	−0.417 **	−0.455 **	2.087 *	1.633	−1.198 ***	2.366 *
	(0.174)	(0.179)	(1.138)	(1.124)	(0.201)	(1.230)
Egypt$_i$	−2.926 ***	−2.898 ***	0.539	−2.359 *	−3.087 ***	0.422
	(0.233)	(0.238)	(1.314)	(1.292)	(0.258)	(1.363)
Residual					0.046 ***	−0.013
					(0.012)	(0.124)
N	365,958	365,958		15,270	316,823	
Wald test for interactions		$\chi^2(22) = 89.68$			$\chi^2(23) = 80.61$	
P-value		0.0000			0.0000	

Conditional logit estimates. Standard errors in parentheses. *$p < 0.1$; **$p < 0.05$; ***$p < 0.01$.

4. Results

4.1. Baseline estimates

In Table 4, we report the results of our baseline estimates. Before testing our hypotheses in Model 2, we study the overall effect of our determinants for all investments in our sample (Model 1). In line with expectations, all types of agglomeration economies positively and significantly promote the location of FDI, but *internal agglomeration* stands out for its strong role. Its estimated coefficient implies that a firm is 1.7 times more likely to locate in countries where it has already invested. Our results also confirm that investment protection via IIAs acts as a significant signal for country trustworthiness in Africa (see also

Benfratello et al., 2022), increasing the odds of choosing a signatory country by 1.14 times compared with a non-signatory country. FDI turns out to be attracted to political stability, economic growth, market size, and natural resources, in line with expectations and confirming the importance of market-seeking and resource-seeking motives among investors. The coefficients of the control variables also have the expected signs.

With Model 2, we address our core issue and study whether the location factors are significantly different for CMNEs, augmenting our specification with the interactions with the dummy *China*. Chinese investments represent a relatively small share of total investments targeting African countries. Hence, the main effects in Model 2 remain remarkably similar to those estimated in Model 1. As for the interaction effects, they confirm that Chinese FDI determinants are overall
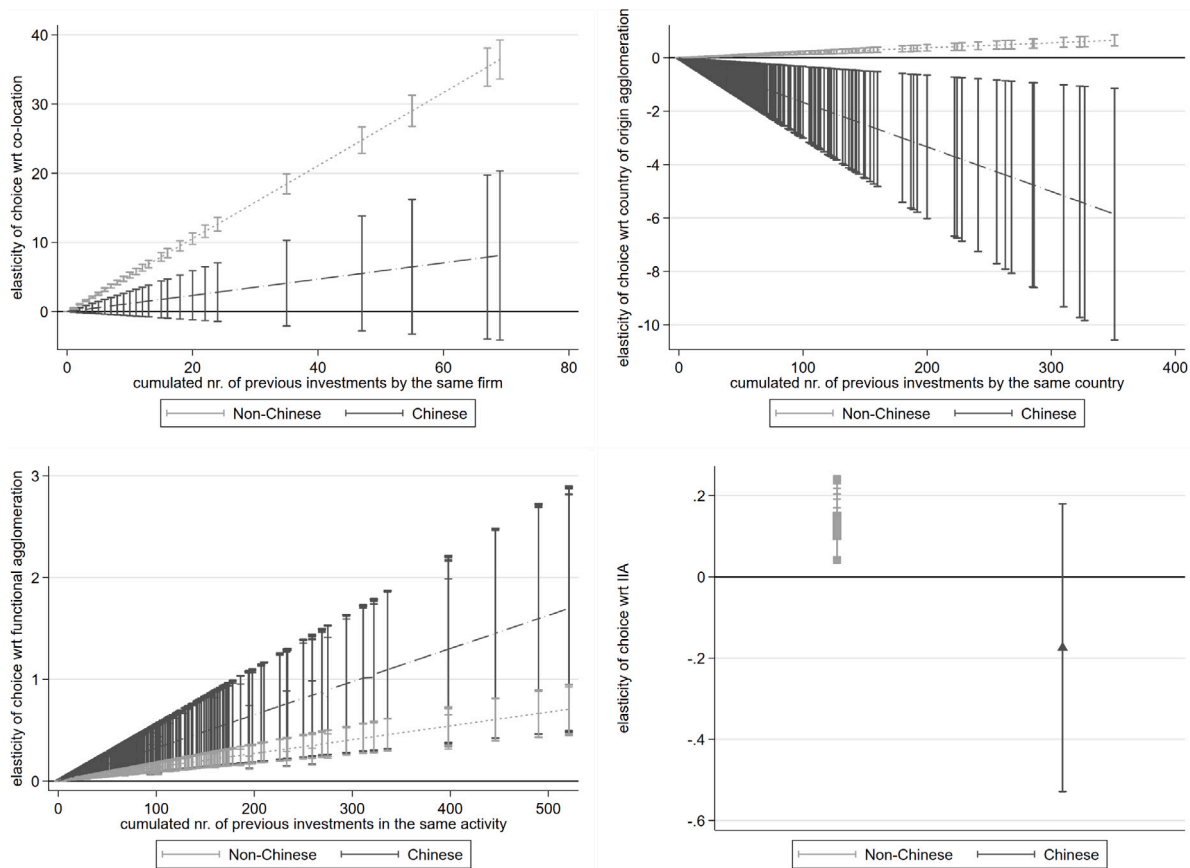
Fig. 2. Elasticities of the main variables of interest.
Source: Own elaboration on *fDi Markets* data.

different.[5] Specifically, the negative and significant interaction effects of *China* with *internal agglomeration* ($\beta = -0.420$, p< 0.01), *country-of-origin agglomeration* ($\beta = -0.019$, p< 0.01), and *IIA* ($\beta = -0.331$, p< 0.1) indicate that these risk-mitigating factors play a comparatively less important role for Chinese investments. Instead, the effect of industry agglomeration is somewhat larger but not significantly different for CMNEs ($\beta = 0.002$, p> 0.1). We report the elasticities corresponding to the net effects of these coefficients in Fig. 2.[6] Our results support H1, H2, and H4, whereas they do not support H3. The positive interaction effects of *China* with *log population* and the South African dummy indicate that large and growing markets attract CMNEs comparatively more. This result is in line with the common finding about the importance of market-seeking motives behind Chinese FDI. We do not find that political stability and natural resources affect Chinese investments differently from other investments, consistent with the most recent literature on Africa.

To ease the computation of the net effects, Model 3 reports the results of the analysis restricted to the subsample of Chinese investments. Consistent with the elasticities reported in Fig. 2, the coefficient for *internal agglomeration* is positive but insignificant, the one for country-of-origin agglomeration is negative and significant, and the one for *industry agglomeration* is positive and significant. In line with Chen et al. (2016), we find that political stability, market size, and growth positively affect Chinese FDI, while we detect no significant effects

of natural resources.[7] Furthermore, the China-only model shows a significant correlation with the presence of African emigrants to China, possibly suggesting that the ties created with the scholarships granted to African students to study in China and the cultural proximity created by Confucius Institutes may serve broader economic interests and open new channels for African emigration.

In Model 4, we test the robustness of our results to endogeneity, applying the control-function approach described in Online Appendix A.1 to the entire sample of investors. The first-stage residual has a positive and significant effect. Yet, it does not change the main insights and leaves the coefficients largely unaffected compared with Model 2. The interaction between China and the residual has a very small coefficient far from statistical significance. Even correcting for endogeneity, the differential effect of internal agglomeration for CMNEs appears driven by its "exogenous" component, i.e., the cost-reducing effects of internal agglomeration. Accordingly, the coefficient of this variable remains negative and significant ($\beta = -0.340$, p< 0.01). Overall, this suggests that there is indeed an endogenous strategic component in the decision of firms to return to countries where they were previously located, but this does not operate differently for China.

Our baseline results strongly confirm the risk-mitigating effects of government support, in line with H1, H2, and H4. The results are also qualitatively in line with H3 regarding the role of government support in the pursuit of economies stemming from knowledge spillovers, but less precisely estimated. Furthermore, the results indicate that CMNEs

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[5] A Wald test of the joint significance of the interaction terms strongly rejects the null hypothesis that their coefficients are jointly equal to zero.

[6] The percentage change in the probability that investment n locates in country i with a 1% change in the variable of interest δw_{niot} is $\delta w_{niot}(1 - P_{niot})$ when *China* = 0 and $(\delta + \tilde{\delta})w_{niot}(1 - P_{niot})$ when *China* = 1.

[7] The precision of the coefficients estimated in Model 3 suffers from a very restricted sample compared with previous models. Therefore, it is not surprising that only some coefficients are significant when focusing on the restricted sample of CMNEs.
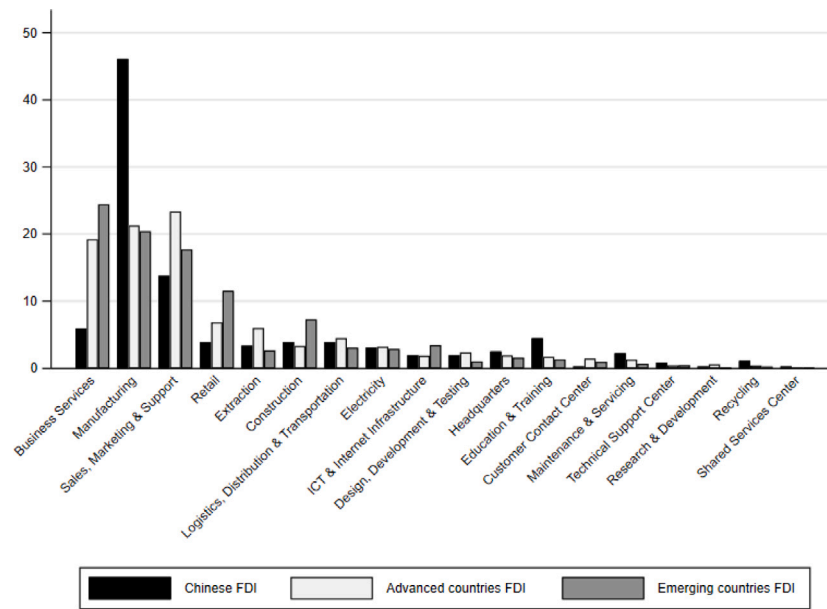
Fig. 3. Distribution of FDIs across industry activities.
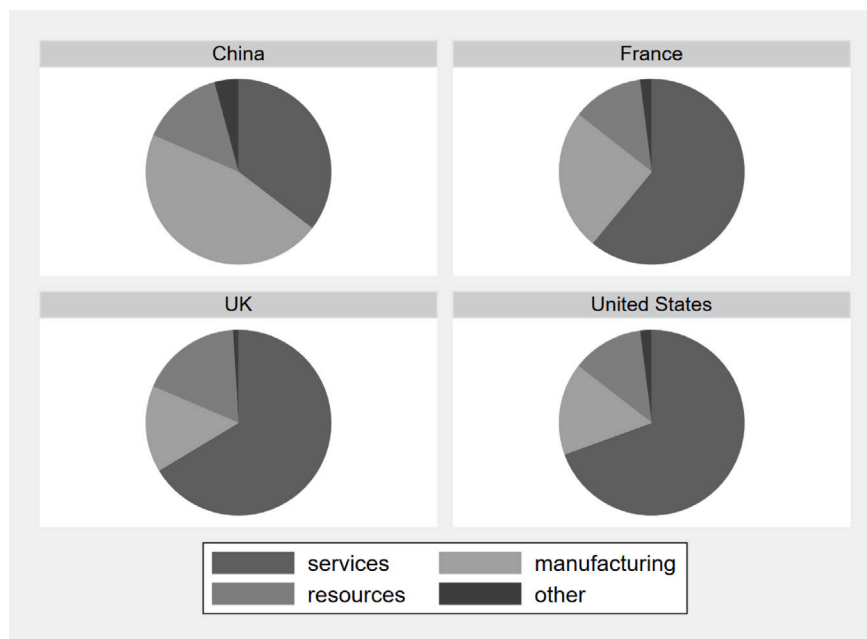*Source:* Own elaboration on *fDi Markets* data.

Fig. 4. Distribution of FDI across manufacturing, services, and resource activities—main investors.
Source: Own elaboration on *fDi Markets* data.

in Africa are searching for natural resources and politically stable contexts, just like non-Chinese investors, which is somewhat in line with the expectations of H5 and H6a.

4.2. Additional analyses

Function-specific estimates

To distinguish between mere FDI composition and the different weights that CMNEs place on particular location factors, we analyze FDI determinants separately by function (Table 5). Figs. 3 and 4 show that Chinese investments are distributed differently across functions compared to other investments, which may drive the differential effects we estimated in the aggregate sample.

Motive heterogeneity affects the relative importance of risk-related variables. Analysis of the main effects reveals that for non-Chinese investors, internal agglomeration positively affects location choice across functions but is strongest for manufacturing FDIs, probably due to the role of sunk costs and capital intensity for a portion of these investments. Non-Chinese investors also rely heavily on country-of-origin agglomeration for manufacturing and services FDI, but not for resource-seeking investments—the strategic nature of resource-seeking investments makes it unlikely that different firms from the same country of origin will engage in multiple potentially competing ventures. As for industry agglomeration, non-Chinese investments in manufacturing tend to avoid the competition of other investors in the same activity, whereas services and resource-related activities tend to benefit from

Table 5
Heterogeneity by activity.

	Manufacturing		Services		Resource-related	
	Main	Interaction	Main	Interaction	Main	Interaction
Internal agglo$_{n,i,t-1}$	0.951 ***	−0.122	0.394 ***	−0.460 ***	0.746 ***	0.306
	(0.056)	(0.266)	(0.024)	(0.119)	(0.055)	(0.506)
Country-of-origin agglo$_{i,o,t-1}$	0.003 ***	−0.083 ***	0.002 ***	−0.011	−0.000	0.014
	(0.001)	(0.017)	(0.000)	(0.012)	(0.001)	(0.022)
Industry agglo$_{n,i,t-1}$	−0.003 ***	0.025 ***	0.001 ***	−0.001	0.011 ***	0.015
	(0.001)	(0.005)	(0.000)	(0.002)	(0.002)	(0.012)
IIA$_{i,o,t-1}$	0.092	−0.138	0.137 **	−0.597 *	0.220 *	−0.224
	(0.113)	(0.318)	(0.070)	(0.342)	(0.119)	(0.485)
FDI stock$_{i,2002}$	0.138 ***	−0.566 ***	0.056 ***	0.103	0.077 ***	−0.206
	(0.019)	(0.121)	(0.009)	(0.085)	(0.018)	(0.136)
FDI stock$^2_{i,2002}$	−0.004 ***	0.017 ***	−0.001 ***	−0.005	−0.002 **	0.006
	(0.001)	(0.004)	(0.000)	(0.003)	(0.001)	(0.005)
Ores exports$_{i,2002}$	0.006	0.039	0.004	−0.001	0.049 ***	0.002
	(0.008)	(0.036)	(0.004)	(0.044)	(0.008)	(0.051)
Ores exports$^2_{i,2002}$	−0.000	−0.000	−0.000 **	−0.000	−0.001 ***	0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
Fuel exports$_{i,2002}$	0.004	−0.005	0.015 ***	0.052 *	0.016 **	0.016
	(0.007)	(0.029)	(0.004)	(0.031)	(0.007)	(0.040)
Fuel exports$^2_{i,2002}$	−0.000 *	0.000	−0.000 ***	−0.000	−0.000 **	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Political stability$_{i,t-1}$	0.360 ***	0.299	0.265 ***	−0.162	0.291 ***	0.037
	(0.059)	(0.246)	(0.034)	(0.278)	(0.062)	(0.347)
GDP growth$_{i,t-1}$	0.048 ***	−0.015	0.035 ***	0.045	0.015	0.083
	(0.010)	(0.039)	(0.005)	(0.038)	(0.010)	(0.055)
Log population$_{i,t-1}$	0.709 ***	0.328	0.645 ***	0.353	0.477 ***	−0.059
	(0.065)	(0.271)	(0.036)	(0.321)	(0.062)	(0.328)
Human capital $_{i,t-1}$	0.073	0.992 **	0.390 ***	0.821	0.032	1.041
	(0.123)	(0.490)	(0.068)	(0.514)	(0.130)	(0.714)
Infrastructure$_{i,t-1}$	0.035 ***	−0.033	0.042 ***	0.031	0.027 ***	−0.000
	(0.010)	(0.039)	(0.005)	(0.041)	(0.010)	(0.049)
Log distance$_{o,i}$	−0.241 ***	−6.731 ***	0.025	−1.649	−0.229 ***	−0.591
	(0.068)	(1.972)	(0.039)	(1.876)	(0.080)	(2.579)
Common language$_{o,i}$	0.008		0.268 ***		0.317 ***	
	(0.078)		(0.047)		(0.088)	
Colony$_{o,i}$	0.458 ***		0.384 ***		−0.012	
	(0.126)		(0.073)		(0.138)	
Log exports$_{i,o,t-1}$	0.052 ***	0.095	0.047 ***	−0.037	0.008	0.190
	(0.019)	(0.100)	(0.011)	(0.128)	(0.019)	(0.159)
Log imports$_{i,o,t-1}$	0.298 ***	−0.285 *	0.269 ***	−0.208	0.178 ***	0.030
	(0.031)	(0.163)	(0.017)	(0.204)	(0.032)	(0.232)
Log immigrants$_{i,o,t-1}$	0.024 **	−0.110 ***	0.041 ***	−0.071	0.072 ***	−0.106
	(0.011)	(0.039)	(0.006)	(0.050)	(0.013)	(0.068)
Log emigrants$_{i,o,t-1}$	0.054 ***	0.214	0.082 ***	0.061	0.041 ***	0.122
	(0.013)	(0.151)	(0.008)	(0.163)	(0.014)	(0.217)
South Africa$_i$	0.409	−3.295	−0.393 *	4.422 **	−0.780 *	−2.552
	(0.413)	(2.059)	(0.230)	(1.907)	(0.455)	(3.115)
Egypt$_i$	−2.609 ***	1.376	−3.184 ***	−2.059	−2.083 ***	−0.020
	(0.577)	(2.184)	(0.306)	(2.335)	(0.548)	(2.714)
N	79,240		221,179		58,402	
Wald test for interactions	$\chi^2(22) = 66.22$		$\chi^2(22) = 45.65$		$\chi^2(22) = 26.01$	
P-value	0.0000		0.0022		0.2510	

Conditional logit estimates. Standard errors in parentheses. $*p < 0.1$; $**p < 0.05$; $***p < 0.01$.

agglomeration and cluster in particular countries. In this sense, the African case would mark a difference compared with the more advanced context of Germany, where the role of agglomeration economies in manufacturing FDI is well documented (Zschoche, 2016).

We now turn to our coefficients of interest, i.e., the differential effects of Chinese location determinants within functions. The heterogeneity in motives absorbs much of the Chinese distinctiveness. This is blatant for resource-related investments, where no Chinese distinctiveness is left, indicating that resource-seeking CMNEs essentially behave like non-Chinese ones. In contrast, a factual particularity of the Chinese internationalization model emerges for services: CMNEs engaging in these FDIs locate significantly less frequently where they have already located ($\beta = -0.460$, p< 0.01) and appear distinctively indifferent to the investment protection provided by IIAs (and $\beta = -0.597$, p< 0.1). Furthermore, Chinese services FDIs disproportionately

target the large South African market and countries endowed with fuel, suggesting that market-seeking and resource-seeking motives coexist for services FDI. This is in line with the observation that private Chinese firms in the services industry follow resource-seeking investments by SOEs (Ramasamy et al., 2012), and contradicts H6a and H6b.

Turning to manufacturing, which represents the bulk of Chinese FDI, another Chinese particularity emerges for what concerns industry agglomeration. Contrary to the general avoidance of agglomeration among manufacturing investors from other countries, CMNEs pursue economies stemming from knowledge spillovers, turning the coefficient from negative to positive ($\beta = 0.025$, p< 0.01). This is firmly in line with the arguments made in support of H3 and indicates that CMNEs pursue unconventional asset-seeking motives when investing in manufacturing, where there is arguably more to gain from knowledge spillovers (Brouthers & Brouthers, 2003). Coherently, the effect of

Table 6
Heterogeneity by origin country.

	All		Advanced		Emerging	
	Main	Interaction	Main	Interaction	Main	Interaction
Internal agglo$_{n,i,t-1}$	0.541 ***	−0.420 ***	0.533 ***	−0.413 ***	0.465 ***	−0.344 ***
	(0.021)	(0.095)	(0.026)	(0.096)	(0.043)	(0.102)
Country-of-origin agglo$_{i,o,t-1}$	0.002 ***	−0.019 ***	0.000	−0.017 **	0.008 ***	−0.025 ***
	(0.000)	(0.007)	(0.000)	(0.007)	(0.002)	(0.007)
Industry agglo$_{n,i,t-1}$	0.001 ***	0.002	0.001 ***	0.002	0.004 ***	−0.000
	(0.000)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)
IIA$_{i,o,t-1}$	0.153 ***	−0.331 *	−0.094	−0.085	0.291 ***	−0.470 **
	(0.052)	(0.192)	(0.073)	(0.199)	(0.089)	(0.205)
FDI stock$_{i,2002}$	0.072 ***	−0.051	0.093 ***	−0.072	−0.030 *	0.052
	(0.007)	(0.050)	(0.011)	(0.050)	(0.016)	(0.052)
FDI stock$^2_{i,2002}$	−0.002 ***	0.001	−0.002 ***	0.001	0.001 **	−0.002
	(0.000)	(0.002)	(0.000)	(0.002)	(0.001)	(0.002)
Ores exports$_{i,2002}$	0.013 ***	0.016	0.018 ***	0.011	−0.000	0.029
	(0.003)	(0.022)	(0.004)	(0.022)	(0.006)	(0.022)
Ores exports$^2_{i,2002}$	−0.0002 ***	−0.0000	−0.0003 ***	0.0000	0.0000	−0.0003
	(0.0000)	(0.0003)	(0.0001)	(0.0003)	(0.0001)	(0.0003)
Fuel exports$_{i,2002}$	0.013 ***	0.010	0.010 **	0.013	0.022 ***	0.001
	(0.003)	(0.017)	(0.004)	(0.017)	(0.006)	(0.018)
Fuel exports$^2_{i,2002}$	−0.0002 ***	0.0000	−0.0002 ***	−0.0000	−0.0003 ***	0.0001
	(0.0000)	(0.0002)	(0.0000)	(0.0002)	(0.0001)	(0.0002)
Political stability$_{i,t-1}$	0.283 ***	0.0510	0.303 ***	0.0309	0.349 ***	−0.0153
	(0.026)	(0.150)	(0.036)	(0.152)	(0.051)	(0.156)
GDP growth$_{i,t-1}$	0.036 ***	0.025	0.035 ***	0.027	0.026 ***	0.036
	(0.004)	(0.023)	(0.006)	(0.023)	(0.008)	(0.024)
Log population$_{i,t-1}$	0.609 ***	0.306 *	0.562 ***	0.353 **	0.807 ***	0.108
	(0.028)	(0.164)	(0.036)	(0.165)	(0.058)	(0.171)
Human capital $_{i,t-1}$	0.255 ***	0.708 **	0.311 ***	0.652 **	−0.217 **	1.180 ***
	(0.053)	(0.297)	(0.069)	(0.300)	(0.111)	(0.312)
Infrastructure$_{i,t-1}$	0.038 ***	−0.010	0.031 ***	−0.004	0.058 ***	−0.031
	(0.004)	(0.024)	(0.005)	(0.024)	(0.008)	(0.025)
Log distance$_{o,i}$	−0.074 **	−2.701 **	0.062	−2.84 ***	−0.140 **	−2.634 **
	(0.031)	(1.086)	(0.044)	(1.087)	(0.069)	(1.088)
Common language$_{o,i}$	0.232 ***		0.138 ***		0.716 ***	
	(0.036)		(0.048)		(0.077)	
Colony$_{o,i}$	0.340 ***		0.314 ***		0.762 ***	
	(0.057)		(0.067)		(0.153)	
Log exports$_{i,o,t-1}$	0.039 ***	0.014	0.069 ***	−0.015	0.038 **	0.015
	(0.008)	(0.066)	(0.012)	(0.066)	(0.016)	(0.067)
Log imports$_{I,o,t-1}$	0.257 ***	−0.184 *	0.353 ***	−0.281 ***	0.211 ***	−0.139
	(0.014)	(0.104)	(0.020)	(0.105)	(0.028)	(0.107)
Log immigrants$_{i,o,t-1}$	0.042 ***	−0.095 ***	0.050 ***	−0.104 ***	0.031 ***	−0.084 ***
	(0.005)	(0.026)	(0.006)	(0.026)	(0.010)	(0.027)
Log emigrants$_{i,o,t-1}$	0.066 ***	0.128	0.046 ***	0.148	0.036 ***	0.158 *
	(0.006)	(0.095)	(0.009)	(0.095)	(0.010)	(0.095)
South Africa$_i$	−0.455 **	2.087 *	−0.504 **	2.136 *	−1.461 ***	3.094 ***
	(0.179)	(1.138)	(0.231)	(1.148)	(0.379)	(1.187)
Egypt$_i$	−2.898 ***	0.539	−2.746 ***	0.387	−3.607 ***	1.248
	(0.238)	(1.314)	(0.312)	(1.329)	(0.467)	(1.374)
N	365,958		267,511		92,269	
Wald test for interactions	$\chi^2(22) = 89.68$		$\chi^2(22) = 102.21$		$\chi^2(22) = 74.21$	
P-value	0.0000		0.0000		0.0000	

Conditional logit estimates. Standard errors in parentheses. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

human capital on manufacturing FDI is distinctively positive for China in this type of investment. Parallel to this, CMNEs in manufacturing also display significantly lower reliance on country-of-origin agglomeration ($\beta = −0.083$, p< 0.05), which is consistent with the arguments about their lower vulnerability to risk and information costs, and with H2. Finally, specific market-seeking motives in manufacturing also emerge from the analysis of the control variables, in terms of the pursuit of trade substitution (captured by the negative effect of log imports) and of new markets (negative effect of start-of-period FDI stocks).

Overall, our results so far suggest that when investing in Africa, the location determinants that may be considered critical for atomistic investors—in particular, internal and country-of-origin agglomeration, IIAs, and FDI stocks—become less salient for CMNEs. Our results do not support the pursuit of political instability among Chinese investments. However, they indicate a particular sensitivity to market-seeking motives, partly driven by composition effects and partly by a distinctive focus on market factors within functions. We do not find evidence of

a distinctive resource-seeking behavior of CMNEs, except for services firms, which tend to locate in resource-abundant countries.

Emerging vs. advanced-origin countries

China is often taken as a prominent example of an emerging economy and may introduce a different investment model compared with Western MNEs (Buckley et al., 2018). In Africa, the role of other emerging economies like India and Russia is growing against a diminishing one of Western investors (The Economist, 2019; UNCTAD, 2014), but the extent to which China is representative of other emerging countries remains unaddressed (Table A.1).

Table 6 shows how our baseline results change when comparing CMNEs to advanced- and emerging-market MNEs respectively. Model 2 in Table 4 is reported here as Model 1 for comparison. As before, we distinguish the respective role of Chinese investments by adding interaction terms. On the whole, internal agglomeration plays an important role for MNEs from both advanced and emerging economies.

In light of this, the lower reliance of CMNEs on this variable emerges as a unique feature. Other risk-mitigating factors (industry agglomeration, country-of-origin agglomeration, and IIAs) appear comparatively more important for emerging economies, as the magnitude of their main effects is consistently larger. From this perspective, China's limited reliance on country-of-origin agglomeration and IIAs is similar to advanced economies but even more marked. Instead, the pursuit of learning economies via industry agglomeration aligns with emerging-market investors more likely to be latecomers in their industries, in line with the arguments behind H3.

Emerging countries turn out to be more reactive to market size, whereas advanced economies appear more sensitive to the growth potential of host countries. From this point of view, China aligns with emerging countries in its distinctive attention to population size. Finally, and in line with the results in Table 5, it is interesting to note that China behaves more similarly to advanced economies when it comes to human capital, weighting it even more than advanced-market investors. This finding is somewhat unexpected and may deserve attention in future research.

Overall, CMNEs display a peculiar behavior mixing features of advanced-economy investors with characteristics of emerging countries and a distinctive lack of concern for prior firm experience and country-of-origin agglomeration.

4.3. Robustness checks

In this section, we confirm the stability of our results using a broad set of robustness checks. All tables are displayed in Online Appendix C.

SOEs vs. non-SOEs

Among CMNEs, state-owned enterprises (SOEs) may be less vulnerable to risk than private firms (e.g., Duanmu, 2012, 2014; Quer et al., 2018; Ramasamy et al., 2012). Nonetheless, the results are robust if we exclude private Chinese firms from the sample and interact our regressors with a dummy that is only equal to one if the Chinese investor is an SOE (Table C.1). Despite the smaller sample size, the core results regarding internal and country-of-origin agglomeration remain virtually identical. Furthermore, more substantial effects of market factors and resources emerge, confirming that SOEs are better able to navigate opaque political environments to gain access to markets and resources (Duanmu, 2012). Again, SOEs do not react differently to political stability. Overall, the results regarding risk-mitigating factors suggest that state ownership is not the only way the Chinese government exerts control over investment outflows.

Firm size

The response to risk may be heterogeneous across firms of different sizes.[8] To address this issue, we split the sample of investing firms according to the average size of their global investments (Table C.2).[9] We find that the results regarding internal agglomeration are driven by smaller firms, i.e., those presumably less able to mobilize high-level relationships to promote their investments and reduce risk and that have more to gain from government support. Smaller CMNEs also react more to industry agglomeration, indicating their greater sensitivity to learning economies and confirming H3 for this subsample. Instead, the smaller effect of country-of-origin agglomeration applies to CMNEs of all sizes. Otherwise, the location determinants of Chinese and non-Chinese MNEs are similar, suggesting that size correlates with a greater ability to cope with risk, regardless of the country of origin.

State ownership beyond China

Government support and state ownership are not exclusive to China or EMNEs. For instance, the French government maintains sizeable decision-making power in FDI via minority ownership in many ventures (Financial Times, 2016). As such, the location factors driving French firms may differ from those of more liberal countries like the US. To explore the role of state ownership beyond the particular case of China, we replace the dummy for Chinese origin with a measure of state ownership drawn from the Fraser Institute (Table C.3). This approach effectively generalizes Quer et al.'s (2018) argument that internal agglomeration matters less for countries with more state ownership. We find that state ownership operates as a risk-reduction factor across origin countries but does not fully explain the distinctive features of Chinese FDI. In fact, including interactions with both the cross-country measure of state ownership and *China*, the differential effect of internal agglomeration reduces in absolute value but remains negative and significant.

Differences among emerging countries

Some of our arguments about China may apply to other emerging players in Africa, and particularly India and Russia, although Chinese government support appears more closely linked to tied aid, loans, and diplomatic relationships than that from the Russian government (Biggeri & Sanfilippo, 2009; Kaplinsky & Morris, 2009; Mazé & Chailan, 2021) and more proactive than the Indian one (Chakrabarti & Ghosh, 2014). In Table C.4, we include two additional interactions with dummies for Russian and Indian investments along with our China dummy. Results confirm that the role of risk-mitigating factors is minimal for Chinese investments. The ties built by development cooperation and SOEs nonetheless appear to exert a protective effect for India, decreasing the role of country-of-origin agglomeration. Instead, no risk-mitigating effects are detectable for Russian investors, who appear comparatively more sensitive to natural resource availability.

Regional differences within Africa

North Africa and Sub-Saharan Africa are substantially different macro-regions and may attract different investments (Ghafar & Jacobs, 2019). To explore this heterogeneity, we split the sample between investments that ended up targeting North and Sub-Saharan Africa (Table C.5). The results confirm the main finding of the lower reliance of Chinese investments on internal agglomeration but also point to different strategic objectives in the two regions. In Sub-Saharan Africa, CMNEs pursue market size and trade substitution and avoid large FDI stocks, suggesting that market-seeking motives prevail. In North Africa, a region plagued by political instability, risk-mitigating factors are central for most investors but much less for China. According to Ghafar and Jacobs (2019), Chinese FDIs in the region largely serve geopolitical objectives. These include exploiting countries as export platforms to access Western markets, extending the sphere of influence to emerging African military powers, and controlling strategic infrastructure such as the Suez Canal and gas hubs.

Robustness to additional control variables

Additional variables may affect the location decisions of investors, but their availability is severely constrained to a limited number of years or countries, sometimes excluding large FDI attractors with substantial natural resource endowments. We study the robustness of our results to augmenting our specification with these variables, considering in particular host country wages, the bilateral number of aid projects, aid amounts, and import and export tariffs (Table C.6). Despite the shrunken sample sizes, the results are remarkably robust

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[8] We thank an anonymous referee for raising this relevant point.

[9] We define small-medium firms as those with an average investment below or equal to the median value of 25.35 million USD and medium–large firms as those that exceed the median. For each firm, the average investment size is the ratio of the total amount invested globally to the total number of FDI projects. The distribution of state-owned firms is similar across size categories.

for what concerns internal agglomeration[10] and provide additional insights. Higher labor costs generally discourage investment, but they do not play a different role for CMNEs. Aid and FDI are complementary for investors as a whole but, as expected, play a more strategic role for Chinese ones (Biggeri & Sanfilippo, 2009). Regarding tariffs, Chinese investments appear more sensitive to and are strongly discouraged by import tariffs than those from other investors, suggesting that tariff jumping is not a prevailing motive for Chinese FDI.

5. Concluding remarks

Using investment-level data, we study whether the location determinants of FDI in African countries differ between Chinese and non-Chinese investments. We focus on determinants that reflect investor reactions to investment risk: prior firm experience in the country, country-of-origin agglomeration, industry agglomeration, and international investment agreements. To our knowledge, this is the first systematic comparison of these location factors between Chinese and non-Chinese investors. Our focus on risk-mitigating factors helps shed light on some critical factors hindering FDI to Africa.

Our results robustly indicate that CMNEs do not require the same protection guarantees as other investors. CMNEs rely significantly less on the risk-mitigating effects of internal and country-of-origin agglomeration and investment agreements. The lower reliance of Chinese MNEs on intra-firm colocation is in line with the findings of previous literature on CMNE internationalization patterns (Lu et al., 2014; Luo & Tung, 2007; Quer et al., 2018). An instance of this is the case of TCL Technology, a leading company in Chinese electronics (Luo & Tung, 2007). Instead of gradually diversifying into less familiar markets as MNEs from traditional investing countries tend to do in the early phases of their internationalization process, the company took its first steps outside of China investing in a variety of countries in Europe and Asia. In Africa, the top greenfield investors from China, including Huawei and ZTE Corporation, present lower rates of intra-firm colocation compared to the main investors from the UK and France (*fDi Markets*).

We argue that this is due to the "systemic" engagement of the Chinese government when operating in Africa (Li et al., 2022), providing practical support to Chinese investors and developing strategic partnership agreements with African governments. The Chinese government proactively engages in competitive tenders for major infrastructural projects and provides conditionality-bound loans that bind host countries to long-term cooperation with China. It also prepares the ground for investment opportunities in multiple sectors through the extensive use of bundling practices, as exemplified by the cases of Sinopec, Citic, and Chinalco in Gabon, Algeria, and Guinea (Mazé & Chailan, 2021). These transactions are often negotiated directly by the Chinese government with high-level host-country institutions, regardless of the private or state-owned nature of the contracting firm.

Indeed, our comparative focus has highlighted that the systemic engagement of the Chinese government in Africa concerns not only state-owned enterprises but CMNEs as a whole. The Chinese government can shape the behavior and practices of firms investing abroad through several forms of control that make it very difficult to distinguish private and state-affiliated firms. As a result, especially when the firm is a major market player, concerns about state control may persist even in the absence of direct ownership, as in the case that led the US to ban the electronics giant Huawei (Cuervo-Cazurra, 2018). Similarly,

government support is not limited to SOEs. For instance, the Chinese government intervened directly in support of the Tianli Group, the private MNE in charge of setting up a special economic zone in Mauritius, following an explicit appeal from the Mauritian Prime Minister worried about delays in the development of the SEZ (Bräutigam & Tang, 2014).

A dense network of soft power and diplomatic ties embeds Chinese FDI, where state control, government strategies, geopolitical interest, and private initiatives are inextricably interconnected. Non-economic factors play an important role, with Chinese influence in Africa also occurring through penetration into the host countries' cultural spheres, as exemplified by the choice of Nairobi as the first broadcasting hub of Chinese Central Television outside China, as well as the many Confucius Institutes opened across Africa in recent decades. This embeddedness turns out to effectively reduce the liability of foreignness for CMNEs and represents a comparatively more salient ownership advantage for smaller firms, which have more to gain from access to business-relevant information and protection against risks related to political instability and expropriation. Whether such pervasive government support will remain a cost- and risk-reducing asset in the long run or become a source of rigidity in investment strategies is an intriguing question that we invite future research to address.

Our analysis also shows that Chinese MNEs in Africa disregard economic risk and locate manufacturing investments where there is FDI agglomeration in the same activity. This is consistent with the interpretation that latecomer emerging investors aggressively pursue information spillovers to catch up with industry-specific knowledge (Child & Rodrigues, 2005). We show that the internationalization model of CMNEs combines features of advanced- and emerging-country location strategies, while being distinctively less risk-averse.

Several common perceptions about Chinese FDI are based on studies focusing only on China. Our comparative and function-specific approach allows us to verify whether they represent a distinctive feature of Chinese FDI in Africa or not, and this bears implications for Africa's development prospects.

First, are Chinese FDIs aimed at riskier destinations? Similar to Kolstad and Wiig (2012) and Chen et al. (2016), we do not find evidence of this. On the contrary, we find that they benefit from political stability, just like those of other investors. Combined with the above results, this implies that while government support mitigates individual firm risk, CMNEs also lose from instability and are not systematically pursuing countries with poor governance to sneak into their institutional voids. This may be viewed as an encouraging sign for African countries with better institutions.

Second, are Chinese FDIs distinctively resource-seeking? On aggregate, our results do not highlight a distinctive role for natural resources. Within the subsample of resource-seeking FDIs, we find that CMNEs behave just like other investors. Hence, we do not support this perception and would instead conclude that CMNEs are rather similar to advanced-country investors when it comes to exploiting resources (Chen et al., 2016). Accordingly, we may expect similarly minor impacts of their FDI in the host economies (Farole & Winkler, 2012). A distinctive resource-seeking orientation emerges for the subsample of services FDIs, probably due to state-owned CMNEs subcontracting to private firms (Ramasamy et al., 2012), which could reduce the potential of these FDIs to activate linkages.

Third, are CMNEs distinctively market-seeking? This is strongly confirmed in our study, especially for Sub-Saharan Africa. Composition effects and distinctive attention to market factors within functions drive this result. Manufacturing and services FDIs, which make up a large share of Chinese FDI, are sensitive to market-specific information and behavioral uncertainties, making the risk-mitigating effects of government support very salient. These ownership advantages may grow even more central as China enters a new development phase, and the share of services FDI in its portfolio will likely increase (Nord & Chen, 2017). These investments tend to develop stronger links with domestic firms (Farole & Winkler, 2012; Sánchez-Martín, De Piniés, & Antoine,

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[10] The results for the other variables of interest lose precision but largely maintain their signs. The insights from IIAs are less robust, indicating a particular sensitivity of this variable to changes in the estimation sample of countries. Hence, data availability issues affecting the African continent bear implications for inference and may limit the comparability of results across studies that employ different variables.

2015), but the scant empirical evidence points to comparatively smaller employment effects for CMNEs (Coniglio, Prota, & Seric, 2015).

Overall, besides representing a remarkable ownership advantage, government support may reduce the incentive to integrate into the host economies and reduce the potential for FDI spillover effects (Mazé & Chailan, 2021).

In contrast, CMNEs seem to use manufacturing FDI as an opportunity to learn and catch up with industry-specific knowledge, and they appear to strongly value destination countries' human capital. This result emerges as a distinctive feature of CMNEs that may challenge the widespread perception that Africa's competitive advantage mainly concerns resources and market size. The familiarity of CMNEs with developing countries may not only enable them to more easily navigate weak institutional environments but also to spot the presence of unexploited competencies and activate them for business purposes. The Huajian Industrial Holding Company—the largest private Chinese manufacturing investor in Ethiopia, producing over 20 million pairs of shoes a year—acted as a pioneer with its first investment in the Ethiopian Eastern Industrial Park, starting the first wave of relocated Chinese plants on the African continent and exerting a "demonstration effect" on the many shoe manufacturing firms that followed (Lin & Xu, 2019). Lin and Xu (2019) report that at the time of the investment, the company recruited Ethiopian workers to be trained in China to tackle a lack of adequate skills and created 3,500 jobs in two years. A priori, this may bear some potential to break poverty traps or end up exclusively serving CMNEs' own interests. The outcome will depend on host countries' interactions with the CMNEs, their absorptive capacity, and the extent to which legitimacy gaps and competitor rivalry will allow CMNEs to maintain their growing role in African countries (Farole & Winkler, 2012; Li et al., 2022). Either way, the ability of CMNEs to activate host-country human capital for FDI is a promising research avenue that our study has highlighted regarding "what is still emerging about emerging countries".

Despite our efforts to design a comprehensive and robust study, some limitations affect our analysis. First, in absence of ad-hoc information about the motives, our approximation of FDI motives with sectoral categories is necessarily imperfect. Relatedly, we are unable to distinguish between horizontal and vertical FDI in order to better appreciate market- vs. efficiency-seeking motives, an issue further exacerbated by the lack of comprehensive and reliable data on wages in African destinations. Secondly, Chinese investment commitments in Africa are not fully captured by FDI inflows as they also relate to aid (Biggeri & Sanfilippo, 2009; Kaplinsky & Morris, 2009). Although we made an attempt to include this dimension using data on bilateral aid, this information is only available for a limited number of countries and years. Third, we are aware that our firm-level measures of coping with risk and uncertainty, given by agglomerations and IIAs, are far from representing the totality of strategies put in place by foreign investors to overcome the liability of foreignness—this would require a broader set of firm- and investment-level variables. Finally, a number of firm characteristics that may interact in interesting ways with risk and government support, such as age, industry, governance and profitability, are not considered in our analysis due to data limitations and insufficient statistical power on split samples, which the structural break due to the Covid-19 pandemic has further hindered.

Future research should be directed at overcoming these limitations and further exploring heterogeneity in the investor features, motives, and entry modes characterizing FDI in African countries and their interactions with risk. In particular, our results call for new studies to walk the maze of Chinese government engagement, disentangling the role of financial and other types of support, different ownership levels, and soft power. This is not only in order to better assess "what is still emerging about emerging countries" but also to anticipate what is going to emerge in the coming years. The last couple of years, not covered by our analysis, have been characterized by disruptive events that have shaken the stability of economies worldwide. Therefore, it is of primary interest to assess whether Chinese outward FDIs in Africa have reacted distinctively to the economic slowdown, the ensuing recovery, and the increase in risk caused by Covid-19 pandemic.

CRediT authorship contribution statement

Luigi Benfratello: Writing – review & editing, Writing – original draft, Validation, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **Anna D'Ambrosio:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Methodology, Formal analysis, Data curation, Conceptualization. **Alida Sangrigoli:** Writing – review & editing, Writing – original draft, Visualization, Validation, Methodology, Formal analysis, Data curation, Conceptualization.

Data availability

The authors do not have permission to share data.

Appendix A. Supplementary data

Supplementary material related to this article can be found online at https://doi.org/10.1016/j.jbusres.2022.113383.

References

Akhtaruzzaman, M., Berg, N., & Lien, D. (2017). Confucius Institutes and FDI flows from China to Africa. *China Economic Review, 44*, 241–252.

Alcácer, J., & Chung, W. (2007). Location Strategies and Knowledge Spillovers. *Management Science, 53*(5), 760–776.

Alcácer, J., & Delgado, M. (2016). Spatial Organization of Firms and Location Choices Through the Value Chain. *Management Science, 62*(11), 3213–3234. http://dx.doi.org/10.1287/mnsc.2015.2308.

Alon, I., Anderson, J., Munim, Z. H., & Ho, A. (2018). A review of the internationalization of Chinese enterprises. *Asia Pacific Journal of Management, 35*(3), 573–605.

Amighini, A. A., Rabellotti, R., & Sanfilippo, M. (2013). Do Chinese State-Owned and Private Enterprises Differ in Their Internationalization Strategies? *China Economic Review, 27*(C), 312–325.

Andreff, W. (2016). Outward Foreign Direct Investment from BRIC Countries: Comparing Strategies of Brazilian, Russian, Indian and Chinese Multinational Companies. *The European Journal of Comparative Economics, 12*(2), 79–131.

Asiedu, E. (2002). On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different? *World Development, 30*(1), 107–119, URL: https://EconPapers.repec.org/RePEc:eee:wdevel:v:30:y:2002:i:1:p:107-119.

Asiedu, E. (2006). Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size, Government Policy, Institutions and Political Instability. *The World Economy, 29*(1), 63–77. http://dx.doi.org/10.1111/j.1467-9701.2006.00758.x.

Bankole, A. S., & Adewuyi, A. O. (2013). Have BITs Driven FDI Between ECOWAS Countries and EU? *Journal of International Trade Law and Policy, 12*(2), 130–153.

Barbieri, E., Di Tommaso, M. R., Tassinari, M., & Marozzi, M. (2019). Selective Industrial Policies in China: Investigating the Choice of Pillar Industries. *International Journal of Emerging Markets, 16*(2), 264–282.

Benfratello, L., D'Ambrosio, A., & Sangrigoli, A. (2022). International Investment Agreements and FDI Inflows in Africa. *Politica Economica/Journal of Political Economy*, forthcoming.

Beri, P. B., & Nubong, G. F. (2021). Impact of Bilateral Investment Treaties on Foreign Direct Investment in Africa. *African Development Review, 33*(3), 439–451. http://dx.doi.org/10.1111/1467-8268.12583.

Biggeri, M., & Sanfilippo, M. (2009). Understanding China's Move into Africa: An Empirical Analysis. *Journal of Chinese Economic and Business Studies, 7*(1), 31–54.

Bräutigam, D. (2003). Close Encounters: Chinese Business Networks As Industrial Catalysts in Sub-Saharan Africa. *African Affairs, 102*(408), 447–467.

Bräutigam, D., Diao, X., McMillan, M., & Silver, J. (2014). *Chinese investment in Africa: How much do we know?: IFPRI working paper 17*, International Food Policy Research Institute.

Bräutigam, D., & Tang, X. (2014). "Going Global in Groups": Structural Transformation and China's Special Economic Zones Overseas. *World Development, 63*, 78–91.

Brouthers, K. D. (2002). Institutional, Cultural and Transaction Cost Influences on Entry Mode Choice and Performance. *Journal of International Business Studies, 33*(2), 203–221.

Brouthers, K. D., & Brouthers, L. E. (2003). Why Service and Manufacturing Entry Mode Choices Differ: The Influence of Transaction Cost Factors, Risk and Trust. *Journal of Management Studies, 40*(5), 1179–1204. http://dx.doi.org/10.1111/1467-6486.00376.

Buckley, P., & Casson, M. (1976). *The Future of the Multinational Enterprise*. Homes & Meier, London.

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, URL: http://www.jstor.org/stable/4540439.

Buckley, P. J., Clegg, L. J., Voss, H., Cross, A. R., Liu, X., & Zheng, P. (2018). A Retrospective and Agenda for Future Research on Chinese Outward Foreign Direct Investment. *Journal of International Business Studies*, *49*(1), 4–23.

Burgis, T. (2014). China in Africa: How Sam PA became the Middleman. *Financial Times*, 8 August 2014.

Carr, E. (2020). The US Versus Chinese Investment In Africa. *Forbes*, 4 September 2020.

Chakrabarti, S., & Ghosh, I. (2014). FDI in Africa: A Comparison of the Indian and Chinese Experience. *Procedia-Social and Behavioral Sciences*, *157*, 340–352.

Chen, W., Dollar, D., & Tang, H. (2016). Why Is China Investing in Africa? Evidence from the Firm Level. *The World Bank Economic Review*, *32*(3), 610–632. http://dx.doi.org/10.1093/wber/lhw049.

Cheru, F., & Obi, C. (2011). De-coding China-Africa Relations: Partnership for Development or (Neo) Colonialism by Invitation? *The World Financial Review*, *Sep–Oct*, 72–75.

Cheung, Y.-W., De Haan, J., Qian, X., & Yu, S. (2012). China's Outward Direct Investment in Africa. *Review of International Economics*, *20*(2), 201–220.

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.

Cleeve, E. A., Debrah, Y., & Yiheyis, Z. (2015). Human Capital and FDI Inflow: An Assessment of the African Case. *World Development*, *74*, 1–14. http://dx.doi.org/10.1016/j.worlddev.2015.04.003.

Coniglio, N. D., Prota, F., & Seric, A. (2015). Foreign Direct Investment, Employment and Wages in Sub-Saharan Africa. *Journal of International Development*, *27*(7), 1243–1266.

Crescenzi, R., & Limodio, N. (2021). *The impact of Chinese FDI in Africa: Evidence from Ethiopia*: *Geography and environment discussion paper series*, Institute of Global Affairs, Department of Geography and Environment, LSE.

Cuervo-Cazurra, A. (2006). Who Cares About Corruption? *Journal of International Business Studies*, *37*(6), 807–822.

Cuervo-Cazurra, A. (2018). Thanks But No Thanks: State-owned Multinationals from Emerging Markets and Host-country Policies. *Journal of International Business Policy*, *1*(3–4), 128–156.

Davies, K. (2013). *China Investment Policy: An Update*: *OECD Working Papers on International Investment, 2013/01*, OECD Publishing, Paris, http://dx.doi.org/10.1787/5k469l1hmvbt-en.

Defever, F. (2012). The Spatial Organization of Multinational Firms. *The Canadian Journal of Economics / Revue Canadienne D'Economique*, *45*(2), 672–697, URL: http://www.jstor.org/stable/41485666.

Duanmu, J.-L. (2012). Firm Heterogeneity and Location Choice of Chinese Multinational Enterprises (MNEs). *Journal of World Business*, *47*(1), 64–72.

Duanmu, J.-L. (2014). A Race to Lower Standards? Labor Standards and Location Choice of Outward FDI From the BRIC Countries. *International Business Review*, *23*(3), 620–634.

Dunning, J. H. (1977). Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach. In B. Ohlin, P.-O. Hesselborn, & P. M. Wijkman (Eds.), *The international allocation of economic activity* (pp. 395–418). Springer.

Dunning, J. H. (1998). Location and the Multinational Enterprise: A Neglected Factor? *Journal of International Business Studies*, *29*(1), 45–66.

Farole, T., & Winkler, D. E. (2012). *Foreign Firm Characteristics, Absorptive Capacity and The Institutional Framework: The Role of Mediating Factors for FDI Spillovers in Low-and Middle-Income Countries*: *World Bank Policy Research Working paper, 6265*.

Financial Times (2016). France: The Politics of State Ownership. November 13.

Fiodendji, K., & Evlo, K. (2015). Do Institutions Quality Affect FDI Inflows in Sub-Saharan African Countries? *Journal of Applied Finance & Banking*, *5*(1), 1–8, URL: https://ideas.repec.org/a/spt/apfiba/v5y2015i1f5_1_8.html.

Fujita, M., & Thisse, J.-F. (1996). Economics of Agglomeration. *Journal of the Japanese and International Economies*, *10*(4), 339–378.

Gaur, A. S., Ma, X., & Ding, Z. (2018). Home Country Supportiveness/Unfavorableness and Outward Foreign Direct Investment from China. *Journal of International Business Studies*, *49*(3), 324–345.

Ghafar, A. A., & Jacobs, A. (2019). *Beijing Calling: Assessing China's Growing Footprint in North Africa*. Brookings Doha Center.

Haveman, H. A. (1993). Follow the Leader: Mimetic Isomorphism and Entry Into New Markets. *Administrative Science Quarterly*, *38*(4)), 593–627.

Head, C. K., Ries, J. C., & Swenson, D. L. (1999). Attracting Foreign Manufacturing: Investment Promotion and Agglomeration. *Regional Science and Urban Economics*, *29*(2), 197–218, URL: https://ideas.repec.org/a/eee/regeco/v29y1999i2p197-218.html.

Helpman, E., Melitz, M. J., & Yeaple, S. R. (2004). Export Versus FDI with Heterogeneous Firms. *American Economic Review*, *94*(1), 300–316. http://dx.doi.org/10.1257/000282804322970814.

Hertenstein, P., Sutherland, D., & Anderson, J. (2017). Internationalization Within Networks: Exploring the Relationship Between Inward and Outward FDI in China's Auto Components Industry. *Asia Pacific Journal of Management*, *34*(1), 69–96.

Holtbrügge, D., & Kreppel, H. (2012). Determinants of Outward Foreign Direct Investment From BRIC Countries: An Explorative Study. *International Journal of Emerging Markets*, *7*(1), 4–30.

Hung, S.-C., & Tseng, Y.-C. (2017). Extending the LLL framework through an institution-based view: Acer as a dragon multinational. *Asia Pacific Journal of Management*, *34*(4), 799–821.

Hymer, S. (1976). *The International Operations of National Firms: A Study of Direct Foreign Investment*. Cambridge, MA: MIT Press.

Jiang, G. F., Holburn, G. L., & Beamish, P. W. (2014). The Impact of Vicarious Experience on Foreign Location Strategy. *Journal of International Management*, *20*(3), 345–358.

Johanson, J., & Vahlne, J.-E. (2009). The Uppsala Internationalization Process Model Revisited: From Liability of Foreignness to Liability of Outsidership. *Journal of International Business Studies*, *40*(9), 1411–1431.

Kaplinsky, R., & Morris, M. (2009). Chinese FDI in Sub-Saharan Africa: Engaging with Large Dragons. *The European Journal of Development Research*, *21*(4), 551–569.

Kerner, A. (2009). Why Should I Believe You? The Costs and Consequences of Bilateral Investment Treaties. *International Studies Quarterly*, *53*(1), 73–102, URL: http://www.jstor.org/stable/29734275.

Kinda, T. (2010). Investment Climate and FDI in Developing Countries: Firm-Level Evidence. *World Development*, *38*(4), 498–513. http://dx.doi.org/10.1016/j.worlddev.2009.12.001.

Kok, R., & Acikgoz Ersoy, B. (2009). Analyses of FDI Determinants in Developing Countries. *International Journal of Social Economics*, *36*(1/2), 105–123.

Kolstad, I., & Wiig, A. (2011). Better the Devil You Know? Chinese Foreign Direct Investment in Africa. *Journal of African Business*, *12*(1), 31–50.

Kolstad, I., & Wiig, A. (2012). What Determines Chinese Outward FDI? *Journal of World Business*, *47*(1), 26–34.

Krugman, P. (1991). Increasing Returns and Economic Geography. *Journal of Political Economy*, *99*(3), 483–499. http://dx.doi.org/10.1086/261763.

Landry, D. G. (2019). *Comparing the Determinants of Western and Chinese Commercial Ties with Africa*: *Working Paper*, China Africa Research Initiative.

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 Series 5416*, Washington, DC,: The World Bank, URL: https://ideas.repec.org/p/wbk/wbrwps/5416.html.

Lejour, A., & Salfi, M. (2015). *The Regional Impact of Bilateral Investment Treaties on Foreign Direct Investment*: *CPB Discussion Paper 298*, CPB Netherlands Bureau for Economic Policy Analysis, URL: https://ideas.repec.org/p/cpb/discus/298.html.

Li, Q., & Liang, G. (2012). Political relations and Chinese outbound direct investment: Evidence from firm- and dyadic-level tests. *Research center for Chinese politics and business working paper 19*.

Li, J., Van Assche, A., Li, L., & Qian, G. (2022). Foreign Direct Investment Along the Belt and Road: A Political Economy Perspective. *Journal of International Business Studies*, *53*(5), 902–919.

Lin, J. Y., & Xu, J. (2019). China's Light Manufacturing and Africa's Industrialization. In *China-Africa and an economic transformation*. Oxford University Press, http://dx.doi.org/10.1093/oso/9780198830504.003.0013.

Lu, J., Liu, X., Wright, M., & Filatotchev, I. (2014). International Experience and FDI Location Choices of Chinese Firms: The Moderating Effects of Home Country Government Support and Host Country Institutions. *Journal of International Business Studies*, *45*(4), 428–449.

Lunding, A., Lanzeni, M. L., Trinh, T., Giesel, B., & Walter, N. (2006). *Global Champions in Waiting*: *Perspectives on Chinas overseas direct investment*, Frankfurt am Main, Deutsche Bank Research.

Luo, Y., & Tung, R. L. (2007). International Expansion of Emerging Market Enterprises: A Springboard Perspective. *Journal of International Business Studies*, *38*(4), 481–498.

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.

Lv, P., & Spigarelli, F. (2016). The Determinants of Location Choice: Chinese Foreign Direct Investments in the European Renewable Energy Sector. *International Journal of Emerging Markets*, *11*(3), 333–356.

Marshall, A. (1920). *Principles of economics*. London: Macmillan.

Mathews, J. A. (2006). Dragon Multinationals: New Players in 21st Century Globalization. *Asia Pacific Journal of Management*, *23*(1), 5–27.

Mazé, D., & Chailan, C. (2021). A South-South Perspective on Emerging Economy Companies and Institutional Coevolution: An Empirical Study of Chinese Multinationals in Africa. *International Business Review*, *30*(4), Article 101704.

Nachum, L. (2003). Liability of Foreignness in Global Competition? Financial Service Affiliates in the City of London. *Strategic Management Journal*, *24*(12), 1187–1208, URL: http://www.jstor.org/stable/20060611.

Nielsen, B. B., Asmussen, C. G., & Weatherall, C. D. (2017). The Location Choice of Foreign Direct Investments: Empirical Evidence and Methodological Challenges. *Journal of World Business*, *52*(1), 62–82.

Nord, R., & Chen, W. (2017). A Rebalancing act for China and Africa: The effects of China's Rebalancing on Sub-Saharan Africa's Trade and Growth. *African Departmental Paper Series*, International Monetary Fund.

Nunnenkamp, P., & Spatz, J. (2002). Determinants of FDI in Developing Countries: Has Globalization Changed the Rules of the Game? *Transnational Corporations*, *11*(2), 1–34, URL: http://hdl.handle.net/10419/2976.

Quer, D., Claver, E., & Rienda, L. (2018). The Influence of Political Risk, Inertia and Imitative Behavior on the Location Choice of Chinese Multinational Enterprises: Does State Ownership Matter? *International Journal of Emerging Markets*, *13*(3), 518–535.

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.

Rodriguez-Pose, A., & Cols, G. (2017). The Determinants of Foreign Direct Investment in Sub-Saharan Africa: What Role for Governance? *Regional Science Policy & Practice, 9*(2), 63–81. http://dx.doi.org/10.1111/rsp3.12093.

Ross, A. G., et al. (2015). An Empirical Analysis of Chinese Outward Foreign Direct Investment in Africa. *Journal of Chinese Economic and Foreign Trade Studies, 8*(1), 4–19.

Rugman, A. M. (1981). *Inside the Multinationals: the Economics of the Multinational Enterprise*. New York: Columbia University Press.

Sánchez-Martín, M. E., De Piniés, J., & Antoine, K. (2015). Measuring the determinants of backward linkages From FDI in developing economies: Is it a matter of size?. *World Bank policy research working paper 7185*.

Shan, S., Lin, Z., Li, Y., & Zeng, Y. (2018). Attracting Chinese FDI in Africa: The Role of Natural Resources, Market Size And Institutional Quality. *Critical Perspectives on International Business, 14*(2/3), 139–153.

Shen, X. (2015). Private Chinese Investment in Africa: Myths and Realities. *Development Policy Review, 33*(1), 83–106. http://dx.doi.org/10.1111/dpr.12093.

Spies, J. (2010). Network and Border Effects: Where Do Foreign Multinationals Locate in Germany? *Regional Science and Urban Economics, 40*(1), 20–32. http://dx.doi.org/10.1016/j.regsciurbeco.2009.08.003.

Sutherland, D., Anderson, J., Bailey, N., & Alon, I. (2020). Policy, Institutional Fragility, and Chinese Outward Foreign Direct Investment: An Empirical Examination of the Belt and Road Initiative. *Journal of International Business Policy, 3*(3), 249–272.

Tan, D., & Meyer, K. E. (2011). Country-of-Origin and Industry FDI Agglomeration of Foreign Investors in An Emerging Economy. *Journal of International Business Studies, 42*(4), 504–520, URL: http://www.jstor.org/stable/29789438.

Taylor, R. (2002). Globalization Strategies of Chinese Companies: Current Developments and Future Prospects. *Asian Business & Management, 1*(2), 209–225.

The Economist (2019). Africa is Attracting Ever More Interest from Powers Elsewhere. 3 July.

Train, K. E. (2009). *Discrete Choice Methods with Simulation* (2nd ed.). Cambridge University Press.

UNCTAD (2014). Bilateral FDI statistics. https://unctad.org/topic/investment/investment-statistics-and-trends, Geneva: United Nations Conference on Trade and Development.

Wang, C., Hong, J., Kafouros, M., & Wright, M. (2012). Exploring the Role of Government Involvement in Outward FDI from Emerging Economies. *Journal of International Business Studies, 43*(7), 655–676.

Wooldridge, J. M. (2015). Control Function Methods in Applied Econometrics. *Journal of Human Resources, 50*(2), 420–445.

Yuan, L., & Pangarkar, N. (2010). Inertia Versus Mimicry in Location Choices by Chinese Multinationals. *International Marketing Review, 27*(3), 295–315.

Zhan, J. X. (1995). Transnationalization and Outward Investment: The Case of Chinese Firms. *Transnational Corporations, 4*, 67–100.

Zhang, J., Wei, W. X., & Liu, Z. (2013). Strategic Entry And Determinants of Chinese Private Enterprises Into Africa. *Journal of African Business, 14*(2), 96–105.

Zschoche, M. (2016). The Effects of Foreign Direct Investment Colocation: Differences Between Manufacturing and Service Firms. *Managerial and Decision Economics, 37*(7), 447–460.

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