

Modern Trends in Chinese Foreign Direct Investment in Africa: An OLI Approach

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This study evaluates the subtle differences that the various types of foreign direct investment (FDI) of China in Africa offers, as revealed by the data, using the 'Ownership, Location and Internalisation Advantages' OLI approach. Chinese FDI is analysed using source country comparisons, sectoral comparisons and an investigation of Chinese FDI practices. Data visualisation techniques and analyses infer similarities and differences between Chinese and other investors in Africa. These alternative methods are driven by the nature of the available data and its resulting statistical possibilities. The significance of this study is that it disambiguates the available data and compares along theory. Many stylised facts are assumed concerning Chinese FDI; this study, however, quantifies and tests these assumptions. The results show that China follows investment patterns of other investors, although heavily skewed towards oil, coal and gas, and other resource sectors. China otherwise tends to invest in medium growth, diversified economies, predominantly Nigeria and Egypt; except in Ethiopia where investment in communications dominates; Cameroon where chemicals dominate; Angola where investments in real estate outperform investment in the coal, oil and gas; and in South Africa and Tanzania that have a more even spread between sectors compared to the rest of the continent.

Key Words: foreign direct investment, FDI, Africa, China, OLI, eclectic paradigm

JEL Classification: F20, F21, F23

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Introduction

The global economic expansion of China is growing in importance and is receiving more than its due share of attention, especially concerning trade and foreign direct investment (FDI) between China and other developing states. The global slowdown and structural change of the Chinese

economy have highlighted Africa's dependence on FDI as the steep decline in FDI is affecting Africa (UNCTAD 2013, 40). The landscape in FDI to Africa has changed significantly during the preceding decade, as India and China are becoming significant investors in the continent (see <http://www.fdimarkets.com>). Chinese FDI has, however, incurred severe criticism from the Organisation for Cooperation and Development members, as they interpret Chinese involvement as a re-colonisation of Africa with the pure aim of exploitation (Claassen, Loots, and Bezuidenhout 2012, 11583).

China's possible impact on Africa is one of the most contemporary debated topics, with Sino-African relations increasing in significance since 2000. The main hypothesis of the article is to evaluate whether Chinese FDI in Africa is only resource based or contains other aspects of the eclectic paradigm of Dunning (1980). This is done through source country comparisons, sectoral comparisons and an investigation of Chinese FDI practices. The methodology is based on data visualisation techniques and analyses are used to infer similarities and differences between Chinese investors and the theoretical 'Ownership, Location and Internalisation Advantages' – OLI criteria. This alternative method is driven by the nature of the available data and its resulting statistical possibilities.

Under the leadership of Chinese president, Xi Jinping, Chinese policy towards Africa has, however, changed towards a more cooperative and co-developmental focus (Buckley 2013). At a major policy speech in Dar es Salaam, Tanzania, in 2013, he confirmed that Chinese cooperation with Africa will be 'people to people' focused, where China will ensure that Africans benefit from the relationship.

The Economist (2013a), a long-time critic of Chinese FDI in Africa, also recently published an article on the changing nature of Chinese FDI in Africa and its possible positive benefits. In two separate articles, they highlighted the slowdown of the Chinese economy and the resulting slowdown in resource-seeking FDI in Africa. Furthermore, a shift in Chinese attitudes focuses on Africa as a place to do business rather than a place to merely acquire resources.

The Economist (2013b) also highlights changing African attitudes toward Chinese FDI and towards China. Africa is becoming more assertive and focused on harnessing benefits from FDI, while Africans are viewing China more and more as a competitor, or even a collaborator, rather than a supplier of aid.

This study aims to investigate Chinese FDI in Africa at a country and

sectoral level in order to gain a firmer understanding of the nature of Chinese FDI in Africa and to deduce conclusions on the possible effects thereof. The approach will be according to the eclectic FDI theory. Chinese FDI flows into Africa between 2003 and 2012 are examined with a view to verify the changing trends suggested. The significance of this study lies in the fact that it actually disambiguates the available data and compares it with theory. Many stylised facts are assumed concerning Chinese FDI; this study quantifies and tests these assumptions and evaluates the benefits sought by China from its FDI in Africa. The subtle differences that the various types of foreign direct investment (FDI) of China in Africa offer, which are revealed by the data, are also investigated.

FDI in Africa

The United Nations Conference on Trade and Development (UNCTAD) provides a thorough overview of basic FDI figures in Africa. FDI inflows to Africa were US\$50 billion in 2012, although Africa still receives less than 5% of the global FDI. While FDI increased in North, East and Central Africa, West and Southern Africa saw declines (UNCTAD 2013, 40). All currency in this article is noted in US dollar.

The rates of return on investment in Africa have on average dropped substantially since 2008, to pre-2005 levels, while re-invested earnings from 2008 to 2012 have increased substantially (UNCTAD 2013, 33–4). This can be seen as the result of global economic movements and economic declines in the home country, especially the traditional partners of Europe and North America.

South Africa is listed among the top 20 prospects for FDI according to international standards of investment promotion (UNCTAD 2013, 23). It should be noted that many African countries are not on the list. The absence of African countries from the list is not surprising as the level of development in most African countries does not enable high levels of investment promotion facilitation in tandem with the negative image that the African countries hold globally.

Figures of 2011 and 2012 also predict a shift towards African consumers, and local manufacturing in Africa is moving towards FDI and away from the traditional investment in resource sectors (UNCTAD 2013, 40–2). This article will show that Chinese firms are orientating themselves strategically as development partners of African markets for future growth.

FDI inflows into Africa during the first decade of the third millennium (2003–2012) are illustrated in figure 1. After a significant growth phase

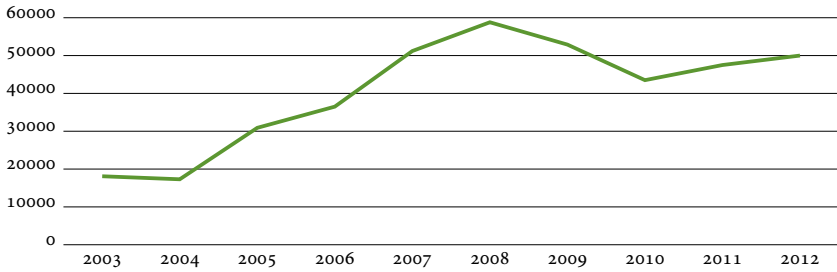


FIGURE 1 FDI Inflows into Africa 2003 to 2012 (million USD, based on data from <http://unctad.org>)

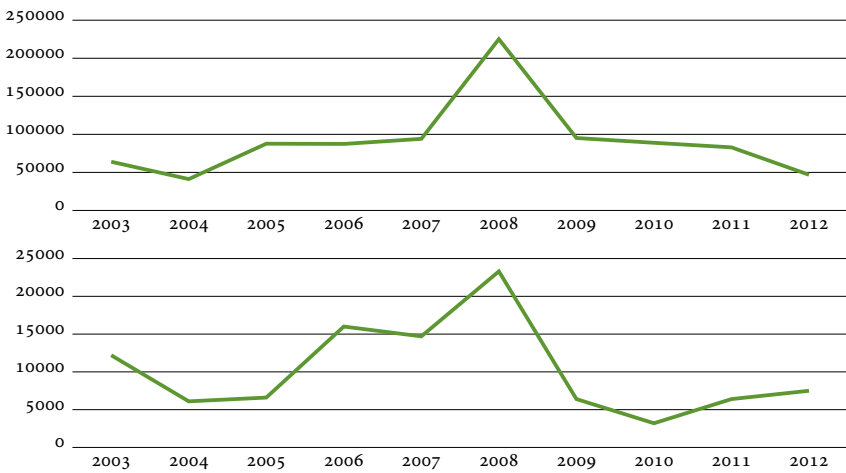


FIGURE 2 FDI into Africa 2003–2012: Greenfields (top) versus M&A (bottom) (million USD, based on data from <http://www.fdimarkets.com> and <https://zephyr2.bvdep.com>)

from 2004 to 2008, there was a steep decline until 2010, after which a slight recovery has occurred. The slight increase from 2011 to 2012 only occurs due to merger and acquisition (M&A) activities, as Greenfields FDI dropped to just above 2004 levels; where Greenfields FDI refer to new business ventures (UNCTAD 2013, 40).

The trends in terms of mergers and acquisitions (M&A), as well as Greenfields FDI are reflected in figure 2. The decline in Greenfields in 2012 as opposed to the increase of M&A activity from 2010 is highlighted in the comparison.

Mergers and acquisitions form a relatively small percentage of FDI in Africa of only 8% and are concentrated around the more developed economies of Africa, such as South Africa and Egypt (Bezuidenhout,

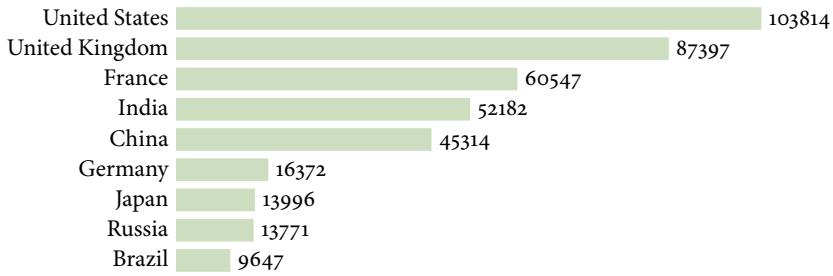


FIGURE 3 Major Source Countries for Greenfields FDI into Africa (million USD; based on data from <http://www.fdimarkets.com>)

Cloete, and Claassen 2014, 3). This study will therefore focus on Greenfield FDI, as Chinese FDI through M&As was limited to only 11 deals during the period, according to Bureau van Dijk (see <https://zephyr2.bvdep.com>).

A breakdown and comparison of the major investors in Africa between 2003 and 2012, indicating Greenfields FDI, are provided in figure 3. The United Arab Emirates, the largest investor in Africa, is omitted from this graph because they focus mostly on the real estate and oil sectors of the Middle East and North African (MENA) countries (see <http://www.fdimarkets.com>). The United States of America (USA) is by far the largest investor in Africa, followed by the historical colonial powers of the United Kingdom and France. FDIs from India and China have risen to the level where they are jointly the size of the USA, while that of countries such as Brazil and Russia have grown to equal Japan and Germany. UNCTAD (2013, 40) also highlights the growth of FDI by developing African economies.

Considering the relative size of Greenfields FDI to recipient countries in Africa, the MENA countries form a distinctive group as opposed to the varied pattern across Sub-Saharan Africa (SSA). In SSA, four groupings can be discerned, namely Nigeria, South Africa and Angola as the largest recipients of FDI, Ghana and Mozambique as the second tier, the East African cluster of Uganda, Kenya and Tanzania and lastly, the rest of the SSA countries.

The breakdown of Greenfields FDI in Africa by sector from 2003 to 2012 compared to the inflows from 2008 to 2012 is provided in table 1. Notably, most sectors remain at their relative size to the others. There is also a severe skewedness toward FDI in the real estate, metals and coal, oil and natural gas sectors that is highlighted by the large percentage share

TABLE 1 Recipient Sectors for Greenfields FDI into Africa (US\$ million)

Sector	FDI by sector (2003–2012)		FDI inflow (2008–2012)	
	(1)	(2)	(1)	(2)
Coal, oil and natural gas	366,027.91	41.3	210,116.25	40.3
Real estate	168,459.36	19.0	96,668.79	18.6
Metals	117,955.53	13.3	60,603.05	11.6
Communications	44,219.19	5.0	30,821.03	5.9
Chemicals	29,437.56	3.3	17,599.27	3.4
Hotels & tourism	28,367.20	3.2	13,931.40	2.7
Alternative/renewable energy	23,680.55	2.7	19,233.41	3.7
Food & tobacco	17,842.04	2.0	13,070.48	2.5
Building & construction materials	17,377.18	2.0	12,092.63	2.3
Automotive OEM	13,682.80	1.5	9,015.69	1.7
Transportation	12,039.36	1.4	6,066.86	1.2
Financial services	10,651.01	1.2	7,103.14	1.4
Warehousing & storage	6,574.50	0.7	2,746.60	0.5
Business services	6,283.82	0.7	4,094.17	0.8
Leisure & entertainment	6,183.80	0.7	5,629.10	1.1
Software & IT services	5,485.00	0.6	3,956.40	0.8
Minerals	4,333.14	0.5	2,297.10	0.4
Beverages	4,235.87	0.5	3,119.39	0.6
Paper, printing & packaging	3,852.72	0.4	2,854.62	0.5
Total	886688.54	100.0	521,019.38	100.0

NOTES Based on data from <http://www.fdimarkets.com>.

of the sectors. This gives rise to the speculation about resource exploitation by multinationals (MNEs) in Africa at the expense of local development.

Chinese FDI in Africa

After joining the WTO in 2001, China officially allowed private foreign investment in FDI projects with its ‘open door’ policy (Claassen, Loots, and Bezuidenhout 2012, 11583). The Ministry of Commerce (see <http://english.mofcom.gov.cn>) in China is the custodian of Chinese FDI data. Their most recent official figures indicate that US\$2.52 billion of Chinese FDI flowed to Africa during 2012, with a total Chinese FDI stock

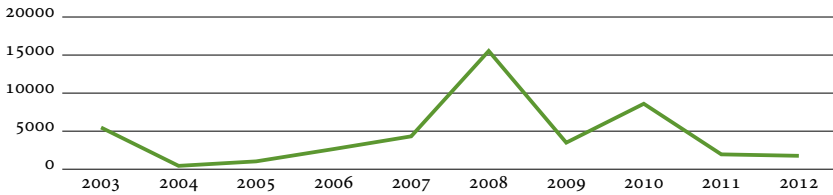


FIGURE 4 Chinese Greenfields FDI in Africa (million USD, based on data from <http://www.fdimarkets.com>)

in Africa of US\$21.23 billion. It estimates that approximately 2 000 Chinese firms are active in 50 African countries.

These figures contradict the figures of the fDi Markets database and that of Bureau van Dijk as they only show Chinese firms being active in 27 African countries through FDI (see <http://www.heritage.org>). This discrepancy is explained by the Chinese Ministry of Commerce (see <http://english.mofcom.gov.cn>) using all foreign investment as standard, while fDi Markets use the international standard as set by the Organisation for Cooperation and Development benchmark definition of FDI, which requires a minimum 10% stake or direct management voice (Organisation for Cooperation and Development 2008). Resultantly, to adhere to international standards, the fDi Markets database is utilised as a source in this study as it also allows for comparison between countries and recorded deals are independently verifiable.

As shown in figure 3, China has risen to become a prominent investor in Africa. According to figure 4, Chinese FDI in Africa generally follows the overall trend as was shown in figure 2. The similarity in the pattern between the total FDI inflows and Chinese FDI is reflected by the smoother increase between 2004 and 2007, a spike in 2008 and a smaller spike in 2010. According to FDI Markets (<http://www.fdimarkets.com>), 2012 saw US\$1 764 million total Greenfields FDI in Africa and a total Chinese Greenfields FDI of US\$45 313 million. Greenfields FDI makes up more than 95% of Chinese FDI in Africa (see <http://www.fdimarkets.com> and <https://zephyr2.bvdep.com>).

A snapshot of the destination countries for Chinese Greenfields FDI in Africa is provided in figure 6. Nigeria, Angola and Algeria are the major recipients of Chinese FDI. It is noteworthy that FDI in Angola primarily went into the real estate sector and not the coal, oil and natural gas sector, as one would expect, as is the case with Algeria and Nigeria.

Furthermore, the research results indicate that South Africa and Kenya

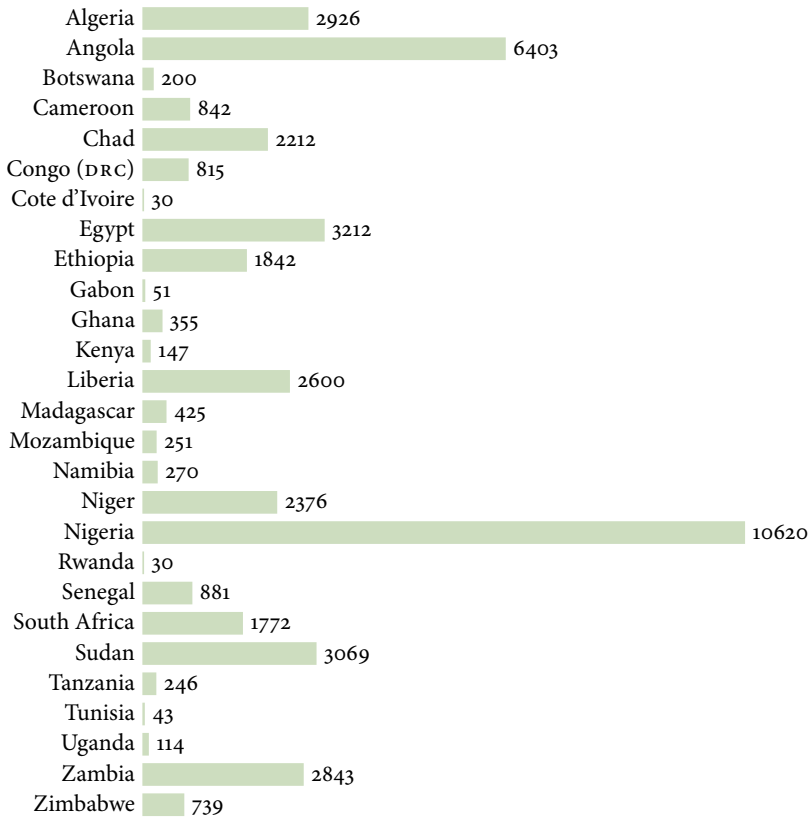


FIGURE 5 Chinese Greenfields FDI in Africa, Destination Countries (million USD, based on data from <http://www.fdimarkets.com>)

are the only countries that receive a high percentage of diverse sectoral investments (noting to 'Greenfields FDI'). Also noteworthy is the dominance of the communications sector in Ethiopia, as well as chemicals in Tanzania and Cameroon. Overall, there is a strong dominance of the resource sectors and real estate.

Literature Review

In order to investigate Chinese FDI in Africa critically, this study links with the 'Ownership, Location and Internalisation Advantages Model,' known as the OLI model of Dunning (1980, 9), which focuses on ownership, location and internalisation advantages (OLI). This model was invented by Dunning in the 1980s and has been widely used as foundation theory in FDI studies ever since. The eclectic paradigm or OLI frame-

work was first developed by Dunning (1980) in his study 'Towards an Eclectic Theory of International Production: Some Empirical Tests.' Using the eclectic paradigm and its subsequent determinants, FDI can be categorised and the behaviour of multinational enterprises (MNEs) can be evaluated (Blonigen 2005, 383). MNE activities can be investigated along the OLI categories and a definitive argument can be made about their investment focus, as well as the theoretical impact the FDI will have on the recipient economies.

The first level of the OLI model categorises FDI according to the advantages gained by multinational enterprise (MNE) investing in a foreign market. These include ownership, location and internalisation advantages (Dunning and Lundan 2008). *Ownership advantages* reflect on the comparative advantage of the firm. If it has a greater comparative advantage, it will invest. *Location advantages* focus on the gains of comparative advantages through acquiring resources and market position. *Internalisation advantages* are the advantages gained using own production and internal specialisation (Dunning and Lundan 2008).

From an MNE perspective, Dunning (1981) groups these advantages according to 'OLI' as follows: (1) Firms that have ownership of firm-specific assets, which will determine whether it will be advantageous for them to invest; (2) firms that have a location advantage and will only invest if it is more cost efficient for the firm to exploit firm-specific assets abroad rather than only in the home country; and (3) firms that will also have an internalisation advantage and it must be more advantageous for the firm to use its assets internally rather than contracting with other firms in the host country.

UNCTAD (2000) and subsequent work by Dunning and Lundan (2008) further interpret MNE FDI motives as the result of the four categories based on the original OLI model. 'Market-seeking FDI' occurs when an MNE wants to expand the consumer market for its product (goods and/or services) to new consumers. 'Resource-seeking FDI' focuses on the acquisition of resources or access to resources. These include natural resources and production inputs, such as production materials and labour (Slaughter 2002). 'Strategic-asset-seeking FDI' is the result of the MNEs' mandate to create shareholder wealth by acquiring tangible or intangible assets to enhance its strategic comparative advantage. These include technologies and intellectual property, as well as regional headquarters (Krueger and Strauss 2014). 'Efficiency-seeking FDI' seeks to enhance firm productivity through cost minimisation or economies of scale in

TABLE 2 Typology of FDI and Incentives

Resource-seeking	Market-seeking	Strat. asset-seeking	Efficiency-seeking
<i>Location of:</i> natural resources, raw materials low-skilled labour, agglomeration benefits	<i>Market potential:</i> market dimensions, income per capita, customer-specific preferences, kind of goods and services to be provided	<i>Acquiring strategic assets:</i> brands and market positioning, expertise, technology, distribution networks, human capital	<i>Lower costs:</i> mostly export oriented, availability of skills at low costs, close to markets, low relocation costs
Low response to both tax and non-tax incentives	Low response to both tax and non-tax incentives	Low response to both tax and non-tax incentives	High response to tax and non-tax incentives
FDI drivers based on other factors than incentives	All firms need to be treated equally	FDI driven by location	Affects firms' competitive edge

NOTES Based on James (2013).

global production networks (GPNS). It can also be described as the rationalising of the firm's production structure or organisational structure (Sachwald 2005).

A typology of FDI, differentiating between tax and non-tax incentives to MNEs by James (2013), is provided in table 2. This allows for a more in-depth assessment of the four FDI categories, namely resource-seeking, market-seeking, strategic asset-seeking and efficiency-seeking. His analysis is based on responses by MNEs to these incentives by increased FDI. Although this study does not focus on incentives, the typology provides a significant overview of the four FDI categories.

UNCTAD (2010) and Krueger and Strauss (2014) provide a further synthesis of the determinants of FDI according to the OLI theory. Added are categories that influence FDI as a whole, but handle the different categories in different manners. These variables relate to policy frameworks and business facilitation. Table 3 provides an overview of the policy framework and the business facilitation variables. The area of business facilitation is highly relevant for efficiency-seeking FDI, as is seen in table 2.

They also provide a more concrete way of studying the FDI categories in terms of economic variables. An overview of the economic variables, which form the determinants of FDI, is provided in table 4.

When it comes to the effects of FDI in each of the four categories, there is a great difference in results and opinions. The OLI paradigm focuses

TABLE 3 FDI: Policy and Facilitation Variables

Policy framework for FDI	Business facilitation
Economic, political and social stability; Rules regarding entry and operations; Standards of treatment of foreign operations; Policies on functioning and structure of markets (esp. competition, M&A; and corporate governance); Privatisation policy; Trade policy (tariffs and NTBs) and coherence of FDI and trade policies; Tax policy; Good governance; Protection of property rights (including intellectual property); Industrial and regional policies; development of competitive clusters; Stable exchange rates.	Investment promotion (incl. image building, actions to reduce information asymmetries); Investment incentives (e.g. fiscal, financial and regulatory); Technical services, including: hassle costs (e.g. related to corruption and administrative efficiency), social amenities (e.g. bilingual schools and quality of life), after-investment services, and services to centralise procedures and information.

NOTES Adapted from Vale Columbia Center on Sustainable International Investment (2013).

mainly on value added and more productive chains, knowledge and skills spillovers, changing consumer behaviour, enhanced good governance, infrastructure development and economic growth (Dunning and Lundan 2008, 319).

Although most authors focus on the benefits of FDI for developing countries, the positive effects are directly linked to policies and institutions to facilitate the linkages and spillovers (Kosack and Tobin 2006, 205). Receiving FDI is not a guarantee for actual economic benefit; careful planning and responsible governance are required to materialise these gains.

In the following section, the available data as determinants, as well as the limitation on analysis placed by the data, will be discussed.

Data and Limitations

Data for Chinese FDI in Africa are not regularly accessible. The Financial Times’s fDi Markets database for Greenfields FDI is used in this study as a source of sector-specific Chinese FDI in African countries. The data covered by the Financial Times database is compiled from FDI deals between 2003 and 2012 for all African countries.

The main limitations of using the fDi Markets database are that some deals are not recorded due to a specific lack of information and subsequently cannot be compared to FDI figures published by UNCTAD, the World Bank and the International Monetary Fund (IMF). However, the data published by them are recipient country totals that do not break

TABLE 4 The Determinants of FDI

Resource-seeking	Market-seeking	Strat. asset-seeking	Efficiency-seeking
Access to raw materials; Access to natural resources; Access to low-skilled labour	Market size ; Per capita income; Market growth; Access to regional and global markets; Country-specific consumer preferences; Structure of markets	Access to skilled labour; Access to new competitive advantages; Technological and other created assets; Availability of and access to strategic infrastructure	Cost of resources and assets listed under resource- or asset-seeking; Other input costs, i.e. transportation and communication costs; Costs of other intermediate products; Membership of a regional integration agreement; Low-cost unskilled or skilled labour; Different comparative advantages of countries; Better deployment of global resources

NOTES Adapted from Vale Columbia Center on Sustainable International Investment (2013).

down to sector level or source country information. Lastly, it should be noted that not all countries received Chinese FDI, not all received FDI annually and not all received FDI into every sector. The vast majority of deals are in the coal, oil and natural gas and metals sectors.

These limitations limit the application of econometric techniques, as the short sample period and irregular investment intervals per country and sector (which generates missing values) will render the time series sample size too small for satisfactory analysis. A base investigation was therefore conducted, based on a graphical analysis to establish a basis for future analysis, as more data becomes available that will satisfy the statistical requirements.

Data on Chinese investment in 27 African countries for the decade 2003 to 2012 were used. It is worth noting that, after 2008, only Rwanda, Gabon and Tanzania, of these, did not receive any Chinese FDI.

A comparison of the destination countries and sectors of Greenfields Chinese FDI in Africa is made in figure 6. Only South Africa and Egypt received highly diverse investments, and the coal, oil and natural gas as well as the communications sectors are the only sectors

FDI in Africa by Destination Country and Industry Sector where Source Country is China

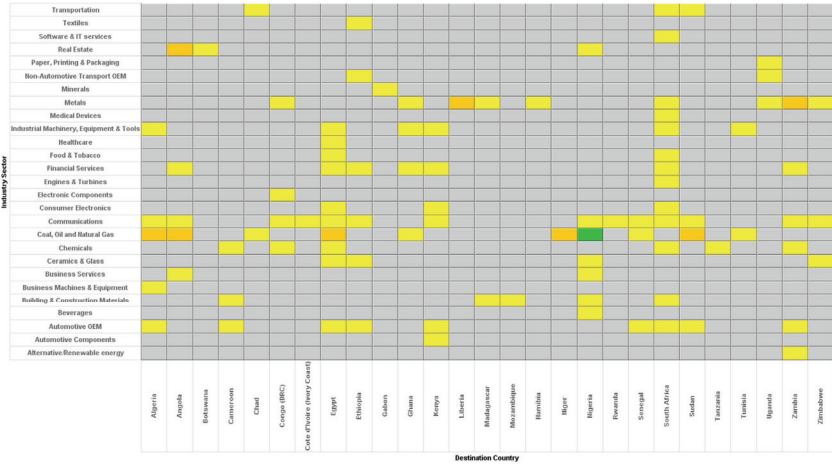


FIGURE 6 Overview of Chinese Greenfields FDI in Africa 2003 to 2012 by Host Country and Sector (based on data from <http://www.fdimarkets.com>)

that have a wide dispersion in terms of destination countries. For determinant comparisons, the World Bank Development Indicators (see <http://data.worldbank.org>) were used, as well as the United Nations Development Program (UNDP) Human Development Index (HDI) (see <http://hdr.undp.org>). It should be noted that World Bank data are not equally available for the destination countries and as a result the latest available values were always used. In cases where averages are used, averages over the sample period 2003 to 2012 were taken.

The Research Methodology and Empirical Results

This study investigates Chinese Greenfields FDI in terms of country and sectoral comparisons and Chinese FDI practices. Data visualisation techniques and analyses are used to infer similarities and differences between Chinese and other investors in Africa. This method was chosen for the special information statistical possibilities it may yield and because of data restrictions. The detail on the graphs of this analysis might not be very clear in this format of the journal, but the aim is to infer and indicate general trends.

In order to disambiguate Chinese FDI in Africa, each of the four OLI categories were investigated in terms of the major determinants listed in the literature. The exception to this is resource-seeking FDI. Total FDI and the total FDI minus resource sectors are used. FDI minus resource

sectors focuses on the FDI that is not resource based to evaluate it against the OLI criteria. If it shows OLI behaviour it shows that Chinese FDI is not only resource seeking, but also follows OLI behaviour. Only the strongest relationship in each category was reported, although the general trend is the same for all sets in that the same relationship can be seen between the two.

The following section discusses the research findings in terms of resource-seeking, market-seeking, efficiency-seeking and strategic asset-seeking FDI.

RESOURCE SEEKING

In this category, the total FDI inflows from 2003 to 2012 were compared to the total FDI inflows from 2003 to 2012 minus the major resource sectors of coal, oil and natural gas, metals, minerals and tobacco and food. Logically, if FDI in countries is non-resource seeking, they should rank much higher in the rankings than with the resources included. Similarly, if the FDI focus was solely resource driven, they should have had a steep decline in the rankings.

The results of total Greenfields FDI compared to the total FDI minus the resource sectors are listed in table 5. Liberia, Niger, Namibia, Sudan, Senegal and Gabon all show steep declines leading to the conclusion that the focus in these countries is mainly resource seeking. Ghana is on the borderline, but is still considered mainly resource driven.

In contrast, Ethiopia, South Africa, Cameroon, Mozambique, Cote d'Ivoire, Rwanda, Zimbabwe, Tanzania, Botswana and Kenya all show steep increases in the ranking, implying that the focus in these countries is mainly non-resource driven. Observations made are therefore confirmed, especially in the case of Ethiopia, Cameroon, South Africa, Tanzania and Kenya.

The rest of the countries all remain approximately at the same level in the rankings. Noteworthy are Nigeria, Angola, Algeria (the oil countries) and the Democratic Republic of Congo (DRC), all known to be highly priced in resource-seeking FDI regions. This implies that these countries receive a relatively broader spectrum of FDI as indicated in figure 6.

The comparison between total FDI and agricultural land yields a positive relationship, as illustrated in figure 7. This confirms the findings of Claassen, Loots, and Bezuidenhout (2012) and suggests that Chinese firms are pursuing investments in future Chinese food security. The results are summarised in table 6 and discussed below. In summary, it can

TABLE 5 Chinese Greenfields FDI in Africa: Country Ranking with and without Resource Sectors

(1)	(2)	(3)	(4)	(5)
Nigeria	Angola	Congo (DRC) (+3)	Ethiopia (+9)	Liberia (-20)
Angola	Ethiopia	Tunisia (+2)	South Africa (+7)	Niger (-20)
Egypt	Nigeria	Angola (+1)	Cameroon (+7)	Namibia (-10)
Sudan	South Africa	Algeria (+1)	Mozambique (+7)	Sudan (-9)
Algeria	Cameroon	Zambia (+1)	Cote d'Ivoire (+7)	Senegal (-6)
Zambia	Egypt	Uganda (+1)	Rwanda (+7)	Gabon (-5)
Liberia	Algeria	Madagascar (=)	Zimbabwe (+6)	Ghana (-4)
Niger	Zambia	Chad (-1)	Tanzania (+6)	
Chad	Zimbabwe	Nigeria (-2)	Botswana (+6)	
Ethiopia	Chad	Egypt (-3)	Kenya (+5)	
South Africa	Congo (DRC)			
Senegal	Mozambique			
Cameroon	Sudan			
Congo (DRC)	Tanzania			
Zimbabwe	Botswana			
Madagascar	Madagascar			
Ghana	Kenya			
Namibia	Senegal			
Mozambique	Cote d'Ivoire			
Tanzania	Rwanda			
Botswana	Ghana			
Kenya	Uganda			
Uganda	Tunisia			
Gabon				
Tunisia				
Cote d'Ivoire				
Rwanda				

NOTES Column headings are as follows: (1) total FDI, (2) FDI without resource sectors, (3) small differences, (4) large positive difference, (5) large negative difference. Based on data from <http://www.fdimarkets.com>.

be concluded that, although there is a strong focus on resource-seeking FDI by Chinese firms, there is also a strong tendency towards a more diverse reasoning in their investments. The findings on the Greenfields FDIS minus resources in terms of three benefit seeking categories analysed against certain criteria are discussed in table 6.

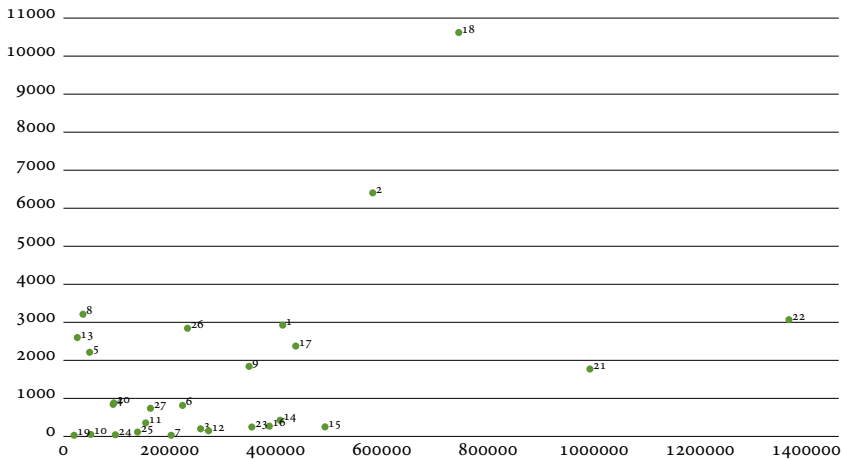


FIGURE 7 Comparison of Total FDI (ordinate, million USD) and Agricultural Land (abscissa, km²) (based on data from <http://www.fdimarkets.com> and <http://data.worldbank.org>)

NOTES (1) Algeria, (2) Angola, (3) Botswana, (4) Cameroon, (5) Chad, (6) Congo (DRC), (7) Cote d'Ivoire, (8) Egypt, (9) Ethiopia, (10) Gabon, (11) Ghana, (12) Kenya, (13) Liberia, (14) Madagascar, (15) Mozambique, (16) Namibia, (17) Niger, (18) Nigeria, (19) Rwanda, (20) Senegal, (21) South Africa, (22) Sudan, (23) Tanzania, (24) Tunisia, (25) Uganda, (26) Zambia, (27) Zimbabwe.

MARKET SEEKING

Market-seeking FDI is assessed by comparing FDI inflows with market size, per capita income, market growth and trade connectedness. Both total FDI and total FDI minus the resource sectors were evaluated. Total FDI minus resource sectors was reported, unless the FDI total is significantly more positive. The results are summarised in Table 6. When market size, as a factor of market seeking, is considered as the difference between total FDI and resources plus total population of the recipient countries, there seems to be a strong positive relationship between these variables, except in the case of Angola. There is also a strong positive relationship between total FDI minus the resource sectors, and per capita production and income (GDP) of the recipient countries. Here the only exceptions are in the case of a few outliers, such as Angola and Equatorial Guinea. The results of a comparison between total FDI minus the resource sectors and the average GDP growth for the recipient countries indicated that there is a positive relationship between Chinese FDI and

TABLE 6 OLI comparison of Chinese Greenfields FDI Minus Resource Sectors in Africa

Criteria	(1)	(2)	(3)
Total population	Strong positive		
GDP per capita	Positive	Positive	Positive
Average GDP growth	Positive	Positive	
Logistics performance index	Positive	Positive	Positive
Ease of doing business	Strong Positive	Strong positive	
Labour force		Strong positive	
Liner shipping connect. index		No sig. relation	No sig. relation
Mobile cellular subscription	Positive	Positive	Positive
Human development index	Positive	Positive	Positive

NOTES Column headings are as follows: (1) market seeking, (2) efficiency seeking, (3) strategic asset seeking. Based on data from <http://www.fdimarkets.com>.

economies with high economic growth. Connectedness and trade were tested using the Logistics Performance Index (LPI) and an indicator of the ease of cost-effective shipping. A comparison between total FDI minus the resource sectors and the Logistics Performance Index (LPI) for the recipient countries revealed that although the overall LPI Index does not have any significant relationship, the ease of arranging cost-effective shipping does show a positive relationship. This indicates a mixture of efficiency-seeking and market-seeking FDI.

The major recipients of Chinese FDI is provided in table 5. The result does indicate a preference for ‘gateway’ countries, as Nigeria, Ghana, Ethiopia, Kenya, Egypt and South Africa that are all respectively viewed as the dominant countries in the respective regions of Africa.

Combining market size, market income, market growth, logistics and regional gateways provides a picture of a strong market orientation in Chinese FDI, which is not resource focused. This supports UNCTAD’s assertion of a change in FDI behaviour towards the African consumer and shows that Chinese firms are strategically placing themselves in the African market for future business and growth. The following section reports on the empirical findings about efficiency seeking.

EFFICIENCY SEEKING

To test for efficiency-seeking FDI, the focus shifts to the costs involved in business and labour. Country-by-country data are nearly impossible

to obtain for most countries and the focus was therefore on comparing total FDI and total FDI minus resource sectors with the World Bank Doing Business Index and the available labour force. The research results on efficiency seeking are also summarised in Table 6.

The individual relationships mirror most of the market-seeking relationships. For most of these relationships, the total FDI also shows a slightly better positive relationship than when the resource sectors are omitted. This suggests that even resource-seeking FDI has an efficiency-seeking component. Chinese firms will therefore rather invest in more efficient business environments than in more inefficient ones.

With the exception of Angola, there is a strong positive relationship between the size of the labour force and Chinese FDI. Total FDI minus resource sectors also provides stronger positive results than total FDI. This implies that the quality of the labour force is a strong consideration for Chinese firms.

The Liner Shipping Connectivity Index (LSCI) was also compared with total FDI minus the resource sector's yields. This comparison is done in order to further the results of the Logistics Performance Index (LPI) in the market-seeking FDI section. The relationship in this case is a much stronger positive relationship. This indicates that seeking efficiency is the main consideration in terms of trade connectedness.

In both total FDI and total FDI minus resource sectors, Chinese firms show a consistent behaviour of seeking efficient cost-saving FDI. The following section reports on the findings concerning strategic asset seeking.

STRATEGIC ASSET SEEKING

Strategic asset-seeking FDI is a more difficult category to test for on a macro-level, especially without firm-specific information. Mobile cellular connections given in Table 6 were used as a proxy to test for technology investment and connectedness, while the quality of life and skilled labour requirements were evaluated using the UNDP's HDI. The HDI also provided more information and background as a proxy for the availability of technology and the absorptive capacity of it by the country. The results of the LPI and LSCI also confirm that port infrastructure has a significant role to play.

When mobile cellular subscription was compared with the total FDI minus the resource sectors, the results show a strong positive trend in the relationship. The implication is that there is a strong correlation between Chinese FDI and the availability of technology in recipient countries, as

indicated in Table 6. Under strategic asset-seeking FDI, the HDI was also tested to confirm whether the preference is towards more skilled or unskilled labour, and the results show a preference for better skilled labour markets.

When the Human Development Index (HDI) is compared to the total FDI minus the resource sector, the results revealed that, except for Angola, there is a general strong positive relationship between the variables. Chinese firms therefore prefer investing in countries with a higher quality of life, skilled labour and the availability of technology.

When it comes to Chinese FDI in Africa, excluding resources, there is a specific strong positive relationship with the determinants of strategic asset-seeking FDI. The following section summarises the research results of this study.

Summary of Results

This study differs from previous studies on the topic in that it investigated Chinese investment (FDI) in African countries quantitatively, considering the available data. It disambiguates the available data and made a unique contribution to the existing knowledge base, as it confirmed some stylised fact on Chinese FDI in Africa, while contradicting others, generating interesting and informative results

This study revealed that China is mostly following investment patterns of other investors, although heavily skewed towards oil, coal and gas, as well as other resource sectors. China otherwise tends to invest in medium growth, diversified economies, predominantly in Nigeria and Egypt. A specific exception is Ethiopia, where investment in communications dominates; Cameroon, where chemicals dominate; Angola, where Chinese investment in the coal oil and gas sector was outperformed by the real estate investments; and South Africa and Tanzania that have a more even spread between sectors than the rest of the continent.

Although there is a strong tendency towards resource-seeking FDI by Chinese firms, it can be concluded that there is also a strong tendency for more diverse reasoning in the investments, while a focus on food security is also confirmed.

Combining market size, market income, market growth, logistics and regional gateways indicates a strong market-seeking orientation in Chinese FDI that is not resource focused. This supports UNCTAD's assertion that a change in FDI behaviour towards the African consumer is in progress and that Chinese firms are positioning themselves strategi-

cally in African markets for future business and growth. In both total FDI and total FDI minus resource sectors, Chinese firms show a consistent behavioural tendency of seeking efficient cost-saving FDI. Ease of doing business, total labour force and the Liner Shipping Connectivity Index (LSCI) all show significant positive relationships with Chinese FDI. This confirms a local manufacturing element in all sectors, which is not only extraction based.

When Chinese FDI in Africa, excluding resources, is considered, there is a strong positive relationship with the determinants of strategic asset-seeking FDI. Chinese firms invest more in countries with a higher quality of living, skilled labour and available technology.

Conclusion

This study analysed Chinese FDI in Africa based on the OLI framework of 'Ownership, Location and Internalisation Advantages.' Differentiating Chinese FDI into the categories determined by FDI literature enables an understanding of the nature and reasoning behind the investment decisions of Chinese firms. This is especially important in light of continuing criticism in Western media regarding the motivation for Chinese investments in Africa as a new form of colonialism and exploitation.

Chinese FDI also shows strong elements of market-seeking, efficiency-seeking and strategic asset-seeking behaviour. It was shown that Chinese FDI in Africa follows global trends and, from a theoretical perspective, has a much broader scope than the sceptics focus on. Although a strong resource-seeking focus exists among Chinese FDI, very few countries experience only resource-seeking FDI. Elements of food security and long-term food production can also be verified.

Africa is set to reap the benefits of the developmental loans and infrastructure development along with the growth elements of FDI and its spillover effects. The focus on market-seeking, efficiency-seeking and strategic asset-seeking FDI will also transfer technologies and will lead to skill and productivity increases as well as a growing consumer base. If African countries manage this process well, to allow for competition and crowding in of local firms, Chinese FDI will make a great contribution towards the transformation of the economic landscape of Africa.

Chinese investment in Africa can therefore be seen as a long-term-oriented economic presence. Chinese investment is also linked to inexpensive developmental loans and infrastructure development projects. The implication is that China is creating a future market for its products

and its brands with a very long-term horizon. China has become a major player in FDI in Africa. They will remain a dominant force and may eventually even become the most dominant force.

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