Foreign Direct Investments in Africa: Are Chinese Investors Different?

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Motivation



 China emerged as a major global player in the last decades (1999 Go Global Strategy) and gained further momentum in the last few years ("One Belt, One Road" strategy).

Motivation (ctd.)



A thousand golden stars China goes to Africa

In big ways and small, China is making its presence felt across the continent





Africa and China More than minerals

Chinese trade with Africa keeps growing; fears of neocolonialism are overdone



Motivation (ctd.)



 Chinese investment strategy included Africa: greenfield FDI increased by around 5 times in the last 15 years.

Research question

- What are the drivers of Chinese investments into Africa?
- Are Chinese investors driven by different location factors?

Theoretical Framework

- Main location factors in developing countries: natural resource availability, market size and growth, openness to trade and investment, economic stability, cost and quality of labour and institutional quality (Morisset, 2000; Jaumotte, 2004; Asiedu, 2006; Asiedu and Lien, 2011; Naudé and Krugell, 2007).
- More controversial the role of Bilateral Investment Treaties (BIT) and other International Investment Agreements (IIA) (see for example Hallward-Driemeier, 2003; Neumayer and Spess, 2005; Falvey and Foster-McGregor, 2018).

Theoretical Framework (ctd.)

When it comes to Africa, very scarce empirical evidence, especially on:

- The role of Bilateral Investment Treaties (BIT) and other investment agreements (Sichei and Kinyondo, 2012; Lejour and Salfi, 2015)
- Different investment patterns depending on:
 - Investment sectors and activities (manufacturing, extraction, services etc.) (Colen et al., 2016)
 - Origin of investors and other firm- and investment- level characteristics (Organization, 2012)

Empirical evidence

- Evidence on drivers behind Chinese investments is mixed.
- Some studies identify Chinese investors as highly attracted by natural resources and riskier institutional contexts (Buckley et al., 2007; Kolstad and Wiig, 2011; Ramasamy et al., 2012; Ross et al., 2015).
- Other studies show that Chinese and Western investors are driven by similar motivations when investing in Africa (Kolstad and Wiig, 2011; Drogendijk and Blomkvist, 2013; Sindzingre, 2016) and that natural resource endowments are just one among the determinants of Chinese FDI (Claassen et al., 2012; Shen, 2013; Brautigam, 2014; Chen et al., 2015).
- Empirical evidence is very scant, even more when considering investments in different sectors or industries (Chen et al., 2015).

Our contribution

- In this paper, we use the most recent data to analyse the location choices of Chinese firms in Africa, identifying the main drivers behind investment in different industry activities.
- To our knowledge, first paper to use firm-level data to empirically investigate the determinants of Chinese greenfield FDI in Africa in different industrial activities including co-location factors in the analysis.
- Also among the few to investigate the Chinese propensity to rely on BIT when investing in Africa.

Empirical strategy

Following the literature on the location choice of FDI, we model the probability to locate in a given country by discrete choice models

- Intuition: the location i chosen by an investor n from origin country o yields the highest utility compared to the other possible locations j, subject to uncertainty deriving from unobservables (Train, 2009)
- Key advantage: we can study the location choice for each individual investment project;
- Specifically, we employ **conditional logit** (CL) models

$$P_{nit} = P(\textit{Choice}_{nit} = 1 | x, y) = \frac{e^{\alpha' x_{it} + \beta' y_{oit}}}{\sum_{j} e^{\alpha' x_{jt} + \beta' y_{ojt}}}$$

Variables

- Our binary dependent variable Choice equals 1 if investment n (of N) locates in country i (of I) and zero otherwise.
- The set of regressors includes:
 - country-specific determinants controlling for standard factors affecting the utility of potential locations (natural resources, market size and growth, availability and quality of labour, agglomeration economies, institutional quality)
 - bilateral variables to account for geographic, institutional and cultural distance
 - two dummies for international investment agreements (BIT and TIP)

Variables

- Variables of interest:
 - Main effects of colocation (same firm) and specific agglomeration economies from the same country of origin
 - All Interaction terms between China and main regressors
- We add a dummy for South Africa (22% of investments in our sample)
- All time-variant regressors lagged one year to mitigate simultaneity problems
- The wide set of location-specific and dyadic regressors should reduce the risk of omitted variable bias.

Data

Our dataset include:

- Data on 8,659 greenfield investments into 35 African countries over the 2003-2017 period from any source countries.
- 329 Chinese and 8,330 non-Chinese investments.
- Given the structure of our dependent variable, our max number of observations is $N \times I=$ 303,065.
- Missing data issues limit our actual estimation sample to 296,693.
- Data sources:
 - Financial Times Ltd (FDimarkets database) for data on greenfield FDI
 - World Bank WDI and WGI for standard location regressors
 - Information on BIT and TIP taken from UNCTAD Investment Policy Hub
 - Bilateral variables retrieved from the CEPII CHELEM database.
- Limitations:
 - Data quality and completeness;
 - Limited numerosity of Chinese investments → (= → (= → (= →) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→) (→)

Descriptives

Inspection of the distribution of the main variables of interest highlights strong concentration of FDI (and a quite heterogeneous composition):

- By country of origin
- By industry activity
- By destination country

Main investor origin countries in Africa (2003-2017)



Chinese share of total investments



FDI activities targeting African countries



Distribution of FDI by destination country



Non-Chinese investors



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Baseline Results

	Model 1	Model 2	Model 3	Mc	Model 4	
				Main	Interaction	China only
# bilateral $FDI_{i,o,t}$		0.046***	0.039***	0.039***	-0.010	0.030
		(0.002)	(0.002)	(0.002)	(0.023)	(0.023)
$Co-location_{i,n,t}$			1.309***	1.324***	-0.604***	0.720***
			(0.039)	(0.039)	(0.234)	(0.231)
BIT	0.055*	0 130***	0 11/***	0 117***	0 140	0.032
DIT _{1,t}	(0.032)	(0.034)	(0.034)	(0.035)	(0.231)	(0.228)
TIP	0 548***	0.511***	0.461***	0 458***	(*)	(**==*)
1.1.1,1	(0.053)	(0.056)	(0.056)	(0.056)		
EDI stock: 2002	0 104***	0.076***	0.080***	0.081***	-0.054	0.028
1 D1 300004,2002	(0.012)	(0.012)	(0.013)	(0.013)	(0.099)	(0.028)
FDI stock 2002 ²	-0.004***	-0.003***	-0.003***	-0.003***	0.001	-0.002
· _ · · · · · · · · · · · · · · · · · ·	(0.000)	(0.000)	(0.000)	(0.000)	(0.004)	(0.004)
Ores exports: 2002	-0.003	-0.006	-0.006	-0.007*	0.026	0.020
1 1 1 1 1 1 1 2 0 0 2	(0.004)	(0.004)	(0.004)	(0.004)	(0.023)	(0.022)
Ores exports 2 2002	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
1,2002	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fuel exports, 2002	-0.035***	-0.032***	-0.030***	-0.031***	0.023	-0.008
1 1,2002	(0.002)	(0.002)	(0.002)	(0.002)	(0.016)	(0.016)
Fuel exports _{$i,2002$}	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}	0.233***	0.219***	0.198***	0.203***	-0.148	0.055
<i>, , , , , , , , , ,</i>	(0.029)	(0.030)	(0.030)	(0.030)	(0.171)	(0.169)

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Baseline Results (ctd.)

	Model 1	Model 2	Model 3	Model 4		China only
				Main	Interaction	
GDP growth _{i,t}	0.033***	0.036***	0.039***	0.038***	0.031	0.069***
	(0.004)	(0.005)	(0.005)	(0.005)	(0.026)	(0.026)
Log population _{i,t}	0.836***	0.778***	0.716***	0.710***	0.313*	1.023***
	(0.030)	(0.031)	(0.031)	(0.031)	(0.186)	(0.184)
Urban Pop. Share $_{i,t}$	0.040***	0.039***	0.037***	0.039***	-0.036	0.003
	(0.006)	(0.006)	(0.006)	(0.006)	(0.038)	(0.038)
Urban Pop. Share $_{i,t}^2$	-0.000***	-0.000***	-0.000***	-0.000***	0.001	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Inflation _{i,t}	-0.006**	-0.005*	-0.006**	-0.006*	0.000	-0.005
	(0.003)	(0.003)	(0.003)	(0.003)	(0.013)	(0.013)
Human capital _{i,t}	1.000***	1.039***	0.974***	0.970***	0.167	1.137***
	(0.048)	(0.049)	(0.049)	(0.050)	(0.247)	(0.241)
Trade openness _{i,t}	0.001	-0.000	-0.000	0.000	-0.006	-0.006
	(0.001)	(0.001)	(0.001)	(0.001)	(0.007)	(0.007)
Log Distance $_{o,i}$	-0.807***	-0.745***	-0.685***	-0.682***	-0.308	-0.990
	(0.023)	(0.023)	(0.024)	(0.024)	(1.373)	(1.373)
South Africa _i	2.259***	1.650***	1.654***	1.658***	0.398	2.056
	(0.262)	(0.267)	(0.268)	(0.273)	(1.694)	(1.672)
Common Language $_{o,i}$	0.545***	0.385***	0.351***	0.356***		
	(0.036)	(0.037)	(0.038)	(0.038)		
Colony _{o,i}	0.845***	0.662***	0.637***	0.631***		
	(0.056)	(0.059)	(0.059)	(0.059)		
Ν	296,693	287,140	287,140	287,140		10,998

Standard errors in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01

Findings - Baseline model

- Most regressors have the expected signs and are highly significant
- BIT and TIP promote FDI
- Access to information about the location matters: the number of previous bilateral FDI and the colocation of the same firm in the country positively affect location
- Chinese investors, on the whole, rely significantly *less* on co-location than other investors (though the effect is positive on the whole) and are more on country size
- BIT and institutional quality are insignificant for China, but the difference with other investors is imprecisely estimated

Heterogeneity by activity

	Manufacturing		Ser	rvices	Primary	
	Main	Interaction	Main	Interaction	Main	Interaction
# bilateral $FDI_{i,o,t}$	0.041***	0.001	0.038***	0.000	0.032***	-0.080
	(0.006)	(0.035)	(0.003)	(0.050)	(0.008)	(0.134)
$Co-location_{i,n,t}$	1.829***	-0.611	0.992***	-1.725***	2.239***	1.353*
	(0.087)	(0.382)	(0.055)	(0.466)	(0.112)	(0.773)
$BIT_{i,t}$	0.031	0.040	0.178***	-0.242	0.193*	-0.615
	(0.079)	(0.364)	(0.048)	(0.509)	(0.108)	(0.703)
TIP _{i,t}	0.270**		0.532***		0.614***	
-,-	(0.121)		(0.079)		(0.171)	
FDI stock 2002 _{i,2002}	0.088***	0.029	0.071***	0.053	0.140***	-0.205
	(0.031)	(0.167)	(0.017)	(0.227)	(0.037)	(0.307)
FDI stock 2002 ² _{i.2002}	-0.003**	-0.003	-0.003***	-0.005	-0.004***	0.007
-,	(0.001)	(0.006)	(0.001)	(0.008)	(0.001)	(0.011)
Ores exports $_{i,2002}$	-0.013	0.075**	-0.007	-0.028	0.023**	0.032
	(0.009)	(0.037)	(0.006)	(0.060)	(0.011)	(0.070)
Ores exports $^{2}_{i,2002}$	0.000	-0.001	-0.000	0.001	-0.000**	-0.000
.,	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.001)
Fuel exports $_{i,2002}$	-0.028***	-0.008	-0.033***	0.031	-0.015**	0.028
	(0.006)	(0.028)	(0.003)	(0.033)	(0.006)	(0.043)
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}	0.194***	-0.229	0.218***	-0.356	0.256***	0.131
	(0.069)	(0.268)	(0.042)	(0.351)	(0.090)	(0.597)

	Manufacturing		Sei	rvices	Primary		
	Main	Interaction	Main	Interaction	Main	Interaction	
GDP growth _{i,t}	0.055***	-0.018	0.031***	0.097*	0.029*	-0.017	
	(0.011)	(0.041)	(0.007)	(0.054)	(0.016)	(0.083)	
Log population _{i,t}	0.870***	0.525	0.769***	-0.283	0.289***	0.556	
	(0.079)	(0.330)	(0.043)	(0.347)	(0.084)	(0.532)	
Urban Pop. Share _{i,t}	0.024*	-0.017	0.046***	0.017	0.042**	-0.013	
	(0.013)	(0.065)	(0.008)	(0.082)	(0.016)	(0.108)	
Urban Pop. Share $_{i,t}^2$	-0.000	0.000	-0.001***	0.000	-0.000***	0.000	
	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	
Inflation _{i,t}	0.003	0.000	-0.007*	-0.024	-0.009	0.005	
	(0.006)	(0.018)	(0.004)	(0.032)	(0.009)	(0.051)	
Human capital <i>i</i> , <i>t</i>	0.469***	0.324	1.137***	0.615	0.825***	1.689**	
	(0.121)	(0.399)	(0.067)	(0.564)	(0.158)	(0.823)	
Trade openness _{i,t}	0.005*	-0.008	0.001	-0.021	-0.009***	-0.003	
	(0.003)	(0.012)	(0.002)	(0.016)	(0.003)	(0.021)	
Log Distance _{i.o}	-0.844***	-0.113	-0.674***	-2.975	-0.566***	0.931	
• .,.	(0.060)	(2.273)	(0.030)	(3.155)	(0.080)	(4.032)	
Common Language _{0.i}	0.109		0.401***		0.406***		
	(0.082)		(0.052)		(0.111)		
Colony _{a i}	0.690***		0.653***		-0.055		
	(0.132)		(0.081)		(0.179)		
South Africa,	1.123*	2.522	2.160***	5.934	1.583**	-4.416	
· · · b	(0.633)	(3.151)	(0.375)	(4.017)	(0.791)	(5.059)	
		. ,		. /		. /	
N	61,146		150	0,974	31,972		

Heterogeneity by activity (ctd.)

Findings - Functional heterogeneity

- Location determinants as a whole appear heterogeneous across functions
- Previous investments from the same country and investor co-location robustly promote location choice
- However, Chinese investors react to co-location differently depending on the function:
 - Significantly less than other investors in Services FDI
 - Significantly more than other investors in FDI targeting Primary sectors
- The function-specific interaction terms of BIT with China suggest that it relies less on BIT (and to some extent on institutional quality), but the difference is not significant
- Moreover, Chinese investors...
 - ...in Manufacturing rely more on natural resources
 - ...in Services rely more on GDP growth
 - ...in Primary activities rely (robustly!) more on human capital

Concluding remarks: are Chinese investors different?

- By and large, similar location factors attract Chinese as well as other investors
- Yet, lower reliance of Chinese investors on co-location
- Agglomeration economies arising from co-location matter especially for investments in the primary sector, the one most subject to expropriation risk, where co-location may actually substitute for formalised investor protection agreements.
- In other sectors, co-location matters significantly less, suggesting that the important role of State-owned enterprises provides investor support in a systemic way, making BIT and specific-firm co-location less salient in affecting location choice.
- Future research: further explore the implications from Chinese State ownership on FDI

Thanks for your attention!

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