Abstract: In the course of China’s current ‘going global’ strategy, Chinese multinational enterprises are increasingly investing in Africa. Against this background, this paper empirically investigates the determinants of Chinese outward direct investment in Africa. The results suggest natural resource-seeking and market-seeking motives to be the main drivers of these investments. In order to unfold a sustainable positive effect on the African host countries’ economic development, proactive African involvement in the investment projects will be required.

Key words: China, Africa, foreign direct investment, resource seeking, market seeking
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Acronyms

ADI.................................................................Africa Development Indicators
BBL.....................................................................Barrel
EIA........................................................................U.S. Energy Information Administration
FDI........................................................................Foreign Direct Investment
FOCAC..............................................................Forum on China-Africa Cooperation
GDF......................................................................Global Development Finance
GDP.......................................................................Gross domestic product
MFA.....................................................................Ministry of Foreign Affairs of the People's Republic of China
MNE......................................................................Multinational enterprise
MOFCOM............................................................Ministry of Commerce of the People's Republic of China
NBS......................................................................National Bureau of Statistics of China
ODI......................................................................Outward Direct Investment
OLS.......................................................................Ordinary Least Squares
SEZ.....................................................................Special economic zone
SOE......................................................................State-owned enterprise
SYC......................................................................China Statistical Yearbook
UN.........................................................................United Nations
UNCTAD............................................................United Nations Conference on Trade and Development
WDI......................................................................World Development Indicators
WDR......................................................................World Development Report
WTO......................................................................World Trade Organization
1. Introduction

“We had a memorable yesterday [...] We enjoy a splendid today. The flower of Sino-African friendship is blooming with the care and nurturing of the Chinese and African peoples. We will greet a flourishing tomorrow [...] China, the biggest developing country in the world, is ready to join hands with Africa, the biggest developing continent in the world, to [...] march into the 21st century full of confidence.”

Jiang Zemin

After three decades of stunning economic growth, the People’s Republic of China is also playing and increasingly important role in the global economy. Analogously, Beijing’s policy decisions and economic strategies have attracted growing international interest. In this connection, ‘zouchuqu’ – China’s ‘going global’ strategy – is one of the most attention-getting global economic processes. The strategy was introduced at the beginning of this century with the goal of “encouraging enterprises with comparative advantages to make investments abroad, to establish processing operations, to exploit foreign resources with local partners, to contract for international engineering projects, and to increase the export of labor” (Zhu 2001). The strategy is supported through a series of incentives, such as “easy access to bank loans, simplified border procedures, and preferential policies for taxation, imports and exports” (UNCTAD 2007: 54). Inter alia, main focus has been put on resource exploration projects and projects which can promote the exports of domestic Chinese technologies, products, equipment and labor (UNCTAD 2007: 55). As part of the ‘going global’ strategy, China also reaches out for the African continent. This increasing involvement is the subject of lively and controversial discussions. Many ascribe great importance to the emerging Sino-African relationship: “China’s irruption onto the African scene has been the most dramatic and important factor in the external relations of the continent – perhaps in the development of Africa as whole – since the end of the Cold War” (Clapham 2008: 361). China’s ‘irruption’ into Africa has come in form of a complex bundle of government-to-government agreements, trade, aid, and FDI. However, in accordance with China’s ‘zouchuqu’ strategy, the core of which is external investment through predominantly state-owned MNEs, FDI

1 Extracts from a speech to the Organization of African Unity in Addis Ababa, 13 May 1996.
as a tool plays an increasingly important role (cf. UNCTAD 2007: 53). In the context of the Sino-African relationship, and against the background of the African continent’s great diversity – geographically, economically, politically, etc. – the question about the determinants of China’s outward direct investment (ODI) in Africa arises. It is the aim of this paper to empirically investigate these determinants and discuss corresponding implications with respect to Africa’s economic development. The Sino-African relationship, including the FDI-aspect, is a briskly discussed topic in academia. However, most of the literature is of qualitative and descriptive nature. This study attempts to econometrically analyze the determinants of China’s ODI in Africa. However, against the background of the topic’s complexity and multidimensionality (Africa’s diversity; intertwining economic and political motives), eventual econometric results have to be understood as tendencies.

In order to decently assess the issue at hand, some basic historical knowledge of the connection between the People’s Republic of China and the African continent is imperative. When the People’s Republic of China was founded in 1949, most of today’s developing countries were still under the yoke of colonialism (Muekalia 2004) – a fate which is not unknown to China: “The Chinese have endured their own grievous history of national humiliation at the hands of foreign powers and understand the pain of colonialism” (He 2007). This is a central element of China’s historical self-perception. It plays an important role in regard to much of the above-mentioned controversy about China’s involvement in Africa, in the context of which more than a few critics see ‘neo-colonial patterns’. China indignantly rejects such accusations, referring to its own historical colonial experiences. In the course of this paper, these aspects will inevitably be touched on, even though they are not the center of attention of this study.

In the years after the establishment of the People’s Republic of China, the world was more or less divided into the capitalist and the socialist camp. China was part of the latter, together with the Soviet Union. However, emerging frictions between the two countries soon turned the former allies into competitors. As the colonized countries increasingly emancipated themselves from their former rulers, both China and the Soviet Union struggled for influence in these regions. The Soviet Union chose a trade and aid approach in order to achieve its strategic goals. China, a developing country itself, was lacking the economic resources to follow the same approach. But China had something different to offer, which also found an echo on the African continent: Mao’s revolutionary ideology. At the Bandung Conference in 1955, the foundation of an
enhanced cultural and economic Asian-African cooperation was laid. The conference also promoted the opposition against (neo-)colonialism and imperialism by any nation (Muekalia 2004). In the aftermath of the conference, in the 1960s, China intensified its connections to the African continent: “Following the Bandung Conference, China began to cultivate ties and offered economic, technical and military support to African countries and liberation movements in an effort to encourage wars of national liberation and revolution as part of an international united front against both superpowers” (Muekalia 2004). But at the latest with Mao’s death, Deng Xiaoping’s rise, and his new course of Chinese economic development, the ties between China and Africa were loosening again. Alden (2007: 9) comments: “Though the official rhetoric of continuity speaks otherwise […] China’s engagement with Africa has been episodic, shifting from periods of intense activity in the 1960s and early 1970s to outright neglect for much of the 1980s”.

It was not before the early 1990s until China – now a ‘socialist market economy’ – sought to re-strengthen its relations with the African countries. In the year 2000, this ‘new partnership’ was even cemented in an institutional framework called the Forum on China-Africa Cooperation (FOCAC). The forum’s first Ministerial Conference was held in Beijing in October 2000. The high-profile participation from both China and the African countries mirrored the seriousness of the undertaking, the official goal of which is “to further strengthen the friendly cooperation between China and Africa under the new circumstances, to jointly meet the challenge of economic globalization and to promote common development” (FOCAC). In this context, in 2006, China formally released ‘China’s African Policy’. The policy sketches out China’s objectives and principles in regard to the Sino-African cooperation as follows: „Enhancing solidarity and cooperation with African countries has always been an important component of China’s independent foreign policy of peace. China will unswervingly carry forward the tradition of China-Africa friendship, and, proceeding from the fundamental interests of both the Chinese and African peoples, establish and develop a new type of strategic partnership with Africa, featuring political equality and mutual trust, economic win-win cooperation and cultural exchange” (MFA 2006). In connection with the above-mentioned controversy, the wording of the policy is worth giving an extra view. As in the introductory citation, Beijing always firmly emphasizes the equality aspect of the Sino-African relations: China – still a developing country, as well – is a partner and an old friend with a shared past.
The economic part<sup>2</sup> of China’s African Policy says under sub-section ‘Investment’: “The Chinese Government encourages and supports Chinese enterprises’ investment and business in Africa, and will continue to provide preferential loans and buyer credits to this end. The Chinese Government is ready to explore new channels and new ways for promoting investment cooperation with African countries, and will continue to formulate and improve relevant policies, provide guidance and service and offer convenience” (MFA 2006). Related to this, the policy additionally covers Chinese commitment in terms of infrastructural assistance: “The Chinese Government will step up China-Africa cooperation in transportation, communication, water conservancy, electricity and other infrastructures. It will vigorously encourage Chinese enterprises to participate in the building of infrastructure in African countries, scale up their contracts, and gradually establish multilateral and bilateral mechanisms on contractual projects” (MFA 2006).

A delicate aspect of China’s African Policy is its component of ‘non-interference’. Based on the Five Principles of Peaceful Coexistence, Beijing pursues a foreign policy of strict non-interference in other countries’ internal affairs. This principle is an explicit component of China’s African Policy, which means that Chinese - in contrast to Western - cooperation and assistance, including investment, comes without conditionalities. This approach proves quite popular in Africa. Sahr Johnny, Sierra Leone’s ambassador to Beijing, for example, states: “We like Chinese investment because we have one meeting, we discuss what they want to do, and then they just do it. There are no benchmarks and preconditions, no environmental impact assessment” (cit. in Obiorah 2007: 39). Critics, however, accuse China of supporting corrupt, repressive, and exploitative regimes for self-interest through its ‘non-interference’ policy. Confronted with such criticism, Beijing counters that the policy mirrors China’s respects for the African countries’ sovereignty and its peoples’ maturity and responsibility – unlike the patronizing, ‘neo-colonial’ Western approach of conditional cooperation. The Chinese interpret their approach as concrete action instead of just lamenting: “Unlike the many ‘clubs’ around the world that allegedly provide assistance for development in Africa, FOCAC does not attempt to exhibit its work like a showcase for acts of benevolence. Rather it is a low key, concrete, stable and yet very important platform to build relations between China and African countries” (He 2007).

<sup>2</sup> The policy is comprised of ‘The political field’, ‘The economic field’, ‘Education, science, culture, health and social aspects’, and ‘Peace and security’.
Undeterred by such discussions, the Sino-African ‘strategic partnership’ continues to ‘flourish’. Recently, China started to establish special economic zones (SEZs) in several African countries, which will serve as important channels for FDI (Bräutigam et al. 2010). Thereby, the Chinese mimic, respectively adapt the SEZ strategy, which had proven successful to stimulate Chinese development, on the African continent.

However, it has to be mentioned that Chinese ODI to Africa is still marginal in terms of China’s total, worldwide ODI (~3% in 2009 (MOFCOM 2010))\(^3\). Nevertheless Chinese ODI to Africa is growing – by 46 percent per year over the last decade (Renard 2011).

In order to investigate the determinants of these increasing investment flows, this paper will proceed as follows:

The second section provides the theoretical background for FDI theory – in general and in the Sino-African context. In section three, the method, data, and variables will be discussed. Section four provides the results and a discussion of their implications. Section five concludes the analysis.

2. Theory

The UNCTAD defines FDI as follows: “Foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting a lasting interest and control of a resident entity in one economy (foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor (FDI enterprise or affiliate enterprise or foreign affiliate). Foreign direct investment implies that the investor exerts a significant degree of influence on the management of the enterprise resident in the other economy. Such investment involves both the initial transaction between the two entities and all subsequent transactions between them and among foreign affiliates, both incorporated and unincorporated” (UNCTAD 1998: 350). FDI is generally associated with several positive effects, such as economic growth and development, job creation, and technology transfer (Jenkins & Thomas 2002).

\(^3\) China’s ODI is still mainly oriented towards Asia and Latin America
In a first part of this chapter (2.1), the general FDI theory will be reviewed. In the second part (2.2), the Sino-African case will be embedded within these theories, thereby also examining certain Chinese peculiarities. The hypotheses of this analysis will be interposed in that second part.

2.1 General FDI Theory

The general FDI theory – which was built mainly on the experience of Western industrialized country investors - suggests three primary FDI motives: resource-seeking, market-seeking, and efficiency-seeking\(^4\) (Buckley et al. 2007, cf. Dunning & Lundan 2008). These motives reflect three corresponding determinants, which will be pointed out in the following three sub-sections. In addition, this paper supposes a fourth determining factor: potential economic and institutional risks.

2.1.1 Resource-seeking FDI

Buckley et al. (2007) state that “resource-seeking FDI from emerging economies occurs to acquire or secure the supply of raw materials and energy sources in short supply at home”. Natural resource endowment would therefore be the corresponding FDI determinant. The availability of natural resources has historically been the most important determinant of FDI (UNCTAD 1998: 106). Up until the end of World War II, around 60 percent of the world stock of FDI was in natural resources (Dunning & Lundan 2008: 69). It is only since around the 1960s, that the relative importance of natural resources as an FDI determinant has declined (UNCTAD 1998: 106).

Against this background, the following question arises: Why FDI instead of trade? Based on historical experience, the UNCTAD answers this question as follows: “Investment took place when resource-abundant countries either lacked the large amounts of capital typically required for resource extraction or did not have the technical skills needed to extract or sell raw materials to the rest of the world. In addition, infrastructure facilities for getting the raw materials out of the host country and to its final destination had to be in place or needed to be created” (UNCTAD 1998: 106).

\(^4\) Over the years, the FDI-discourse has produced different modifications and sub-categories (e.g. strategic asset- or capability-seeking FDI). However, in the context of the analysis at hand, the general core determinants provide an adequate framework.
2.1.2 Market-seeking FDI

The main reason for market-seeking FDI is to promote and exploit new markets, respectively to sustain or protect them (Dunning & Lundan 2008: 70). The gaining of access to lucrative markets is central in this connection. According to Buckley et al. (2007), market-seeking FDI from emerging economies is undertaken to access distribution networks and to facilitate the exports of home country producers. Additionally, Dunning & Lundan (2008: 71) emphasize that physical presence itself plays an increasingly important role in global marketing strategies. In this context, the corresponding FDI determinant is market size “in absolute terms as well as in relation to the size and income of its population, and market growth” (UNCTAD 1998: 107).

2.1.3 Efficiency-seeking FDI

According to Buckley et al. (2007) “efficiency-seeking FDI will occur when outward investors seek lower-cost locations for operations, in particular in the search for lower-cost labour”. Accordingly, low cost labor would be the corresponding FDI determinant.

2.1.4 Risk Factors

While natural resources, promising markets, and cheap labor are determinants with an FDI-attracting effect, there are others which generally have a discouraging effect – such as economic and institutional risks.

Inflation is a commonly used measure of macroeconomic stability. In this context, Buckley et al. (2007) comment on inflation as an FDI determinant as follows: “Volatile and unpredictable inflation rates in a host country discourage market-seeking FDI by creating uncertainty and by making long-term corporate planning problematic, especially in respect of price-setting and profit expectations. High rates of inflation may also lead to domestic currency devaluation, which in turn reduces the real value of earnings in local currency for market-seeking inward-investing firms”.

Institutional quality is another determinant which should be taken into consideration, as Blonigen (2005) points out: “The quality of institutions is likely an important determinant of FDI activity, particularly for less-developed countries for a variety of reasons. First, poor legal protection of assets increases the chance of expropriation of a firm’s assets making investment less likely. Poor quality of institutions necessary for well-functioning markets (and/or corruption) increases the cost of doing business and, thus, should also diminish FDI activity. And finally, to the extent that
poor institutions lead to poor infrastructure (i.e., public goods), expected profitability falls as does FDI into a market”.

2.2 FDI Theory in the Sino-African Context and Hypotheses

Even though the FDI theory delineated above is based on Western experiences, one can presume that its economic rationale and its assumptions concerning motivations and determinants are applicable for non-Western multinational enterprises (MNEs) as well. Notwithstanding, Chinese MNEs and their operations show certain peculiarities compared to Western ones.

The most important peculiarity is that the Chinese MNEs, which make up the lion’s share of Chinese ODI, are predominantly state-owned or de facto state-controlled. Although most of those MNEs are listed on a stock exchange, the state preserves majority power and top executives are appointed by the party secretary (Morck et al. 2008). In 2006, Chinese SOEs contributed to some 82 percent of the country’s total non-financial ODI stock (Yeung & Liu 2008). Of course, state-ownership has certain implications: Through their close government support, SOEs have soft budget constraints and access to capital below market rates. The state’s ‘deep pockets’ not only give Chinese SOEs an advantage when it comes to bidding, it also makes them less risk-averse (Buckley et al. 2007). In this connection, and in contrast to privately owned MNEs, mere profit maximization is not imperatively their main objective. Instead, their investments may as well reflect political objectives (Kolstad & Wiig 2009).

An additional peculiarity has its roots in China’s foreign policy. Due to China’s non-interference policy, Chinese MNEs have access to countries that Western MNEs are barred from doing business in (Alden 2007: 42).

Against this background, the following sub-sections will revisit the four determining factors pointed out under 2.1.1 - 2.1.4 in order to examine them in the Sino-African context and eventually formulate corresponding hypotheses.

2.2.1 Resource-seeking FDI in the Sino-African Context

There is an overwhelming array of both academic and journalistic literature about China’s ‘hunt’ for resources in Africa. Africa’s natural resource endowment is considered to be one of the most important determinants of Chinese investment: “The overarching driver has been the Chinese government’s strategic pursuit of resources and attempts to ensure raw material supplies for
growing energy needs within China, in part reflecting the country’s position as a centre of global manufacturing. Most significant Chinese activity and investment in Africa is related to this demand, rooted in domestic economic and political changes in China and the changing profile of resource needs accompanying its economic development and role in the global economy” (Alden et al. 2008). Rotberg (2008: 1, 4) points out China’s “immense mercantilist ambitions” on the African continent, in the course of which China “ravenously seeks raw materials”, such as fuels, timber, minerals, metals, and arable land. China is in desperate need of these materials in order “to feed its massive industrial surge and – ultimately – America’s substantial consumer demand” (Rotberg 2008: 1). Against this background, Alden (2007: 41) declares resource security to be “at the heart of China’s approach to the African continent”.

In terms of resource extraction in Africa, China’s main focus has been on energy resources, namely oil and gas, in order to literally ‘fuel its economy’ (cf. Alden 2007). Many (predominantly Western) observers are troubled about ‘the dragon’s hunt for oil’ which presently is a hot topic and obviously an emotional one, too. But in comparison with e.g. the United States or the European Union, China’s oil demand is relativized. In 2007, China accounted for 9.3% of the world’s oil consumption, still lagging behind the United States at 24% (Alden & Alves 2009). If one treats the European Union as an economic entity, China ranks third in terms of oil consumption: China (~1.3 billion citizens) consumes 8.2 million bbl/day (2009 est.), ranking behind the European Union (~500 million citizens) at 13.68 million bbl/day (2007 est.), and the United States (~300 million citizens) at 18.69 million bbl/day (2009 est.) (CIA World Factbook).

Probably, the dramatic undertone of reports about China’s growing oil demand is engendered by the underlying background story of China’s economic explosion, which indeed is spectacular and impressive: Between 1978 and 2005, China’s economy has grown more than 9 percent per year (Lee & Shalmon 2008: 110). In this connection, energy is key: “Energy is critical to service this growth. Despite building almost 200’000 megawatts of new electric generating plants over the last five years, increasing its coal consumption by 21 percent over the same period, and initiating one of the world’s most aggressive campaigns to increase energy productivity, China continues to be plagued by localized energy shortages. A dramatic increase in motor vehicle sales and modal shifts in the movement of freight from railroads to trucks have increased oil demand beyond China’s limited domestic supply, forcing China to rely on an ever-growing volume of imported oil” (Lee & Shalmon 2008: 110). In the course of this transition, China – a former oil exporter –
became an oil importer in 1993 (Alden 2007: 11f.). This was a milestone and according to Alden (2007: 12) a critical juncture: “Chinese officials recognized that, in order to maintain the roaring pace of its economy, the country would need to have secure sources of energy as well as other critical resources”. Figure 1 graphically illustrates those developments described above:

![Fig. 1: China’s growing gap between oil consumption and domestic production 1980-2010 (in 1000 bbl/d) (Data Source: EIA)](image)

Meanwhile, further Chinese modernization and urbanization will increase the importance of fuels – and Africa’s strategic importance. ODI to Africa is and will be an important Chinese tool in the pursuit of energy security.

In the resource context, next to energy security, food security will be another big issue for China. China is the world’s most populous nation. It also has a huge landmass – the third biggest behind Russia and Canada. China’s landmass is 2 percent bigger than the United States’, but the great difference is that only a small proportion of the Chinese land is actually arable. Thus, despite its huge landmass, China is in fact a land-scarce economy, in terms of arable land and in relation to its huge population (Naughton 2007: 17, 28).

Feeding its people has historically been a core challenge for China and the country made traumatic experiences in this regard. However, since the 1980s and 1990s, modernization processes and corresponding technological transformations have increased the agricultural supply (Naughton 2007: 251). Yet, there are new challenges on the horizon: “As incomes rise in China, demands for improved diet are dramatically reshaping markets for food. Traditionally almost
totally dependent on grain, China’s consumers are increasingly demanding a diverse diet, which puts greater and different demands on the agricultural system. How successful will China be in increasing and diversifying food production in the future?” (Naughton 2007: 251). In this connection, the Financial Times (2008, May 8) reported: “China is losing its ability to be self-sufficient in food as its rising wealth triggers a shift away from diet staples such as rice towards meat, which requires large amounts of imported feed. China has about 40 per cent of the world’s farmers but just 9 per cent of the world’s arable land. Some Chinese scholars argue that domestic agricultural companies must expand overseas if China is to guarantee its food security and reduce its exposure to global market fluctuations”. Against this background, Chinese companies are encouraged and supported to undertake corresponding offshore land acquisition investments, particularly in Africa and South America (Financial Times 2008, May 8).

Another natural resource which is reported to increasingly attract Chinese investments is timber. China is one of the fastest growing importers of raw timber, due to its enormous economic growth and its low ‘forest per capita’-ratio. In order to cope with these surging domestic timber demands, China increasingly turns towards Africa. The Sino-African complex of timber trade and corresponding Chinese investments is supposed to have an enormous growth potential. In 2003, 2.5 million cubic meters of timber were exported from the African continent to China. But this number is growing. China’s biggest timber sources in Africa are Gabon, Congo (Republic), Equatorial Guinea, Mozambique, Cameroon, and Tanzania. The export of raw timber from Mozambique and Tanzania to China increased by over 1’000 percent over the last couple of years (Böhringer et al. 2007).

Additionally, Farooki (2010) points out that “in general, economic growth accompanied by increasing industrial expansion, rising urban populations and increased infrastructure investments will increase the demand for hard commodities” – namely metals and ores. In this connection as well, China has undertaken large investments on the African continent, especially the south-eastern part.

FDI theory suggests that resource-seeking FDI occurs in order to acquire or secure the supply of resources which are in short supply at home (Buckley et al. 2007) and when the resource-rich host countries lack the capital, the technical skills, and the infrastructure needed in order to extract and export their resources (UNCTAD 1998: 106) (see 2.1.1). The Sino-African situation
is congruent with this. Therefore, and derived from the background of China’s enormous resource hunger, the first hypothesis is:

**Hypothesis 1 (natural resource-seeking): There is a positive relationship between the African host countries’ endowments of natural resources and Chinese ODI.**

2.2.2 Market-seeking FDI in the Sino-African Context

Based on the results of several previous global-level studies, Yeung and Liu (2008) conclude that promising markets are a main driver of Chinese ODI. Alden et al. (2008) make this claim for the specific African case, as well: “A further [investment] factor is Africa’s status as an arena for Chinese companies to develop a market with strong commercial potential for Chinese business. The Chinese government, businesses, and entrepreneurs have regarded (or, for many businesses, been financially encouraged to regard) Africa as a continent of economic potential populated by consumers”. This is compatible with what general FDI theory postulates about market-seeking FDI (see 2.1.2). Derived from this background, the second hypothesis is:

**Hypothesis 2 (market-seeking): There is a positive relationship between the African host countries’ market sizes and Chinese ODI.**

2.2.3 Efficiency-seeking FDI in the Sino-African Context

According to general theory, at the core of efficiency-seeking FDI (see 2.1.3) is the search for lower-cost labor. As mentioned above, China is land-scarce. But on the other side, it is very labor-abundant (Naughton 2007: 28). In fact, due to its “almost inexhaustible supply of cheap labour from the countryside” (Chan 2003) very cheap labor has traditionally been China’s comparative advantage. While the country as a whole still profits from its demographic dividend, the individual workers of the vast Chinese workforce are willing - or rather forced - to work for extremely low wages. Even though (coastal) Chinese wages have been on the rise recently, Chinese labor costs are similar to those in many African countries, while productivity is substantially higher (Bräutigam 2008: 65). Therefore, the efficiency-seeking FDI motive, respectively the search for lower-cost labor does not apply to the Sino-African case. Thus, it will not be considered further in this analysis.
2.2.4 Risk Factors in the Sino-African Context

Generally, economic and institutional risk factors are supposed to have a rather discouraging effect on FDI (see 2.1.4). However, previous studies indicate that Chinese MNEs – state-owned and profiting from Beijing’s non-interference policy – are rather venturesome regarding their investments: “Explicitly rejecting ‘Afro-pessimism’, to date, they appear to have not been overly encumbered by investment constraints or concern about political instability that have affected other investors” (Alden et al. 2008). The strong economic and political backing of the government enables Chinese MNEs to undertake investments more or less regardless of risk levels (Yeung & Liu 2008). As a consequence, Chinese investment operations on the African continent are more daring than those of other players. According to Buckley et al. (2007), Chinese MNEs are extraordinarily tolerant of economic and institutional risks. Derived from this background, the third hypothesis is:

*Hypothesis 3 (risk tolerance): Chinese ODI is not deterred by the African host countries’ economic and institutional risk factors.*

3. Method

The occasionally insufficient availability of both Chinese and African data is an issue. In many cases data series are limited to only a very small number of years\(^5\) and/or are discontinuous. Therefore, the application of panel estimation techniques would not be a reasonable option in order to test the hypotheses. Instead, Ordinary Least Square (OLS) estimations are performed, using period averages\(^6\). In order to create the dependent variable - Chinese ODI to the African host countries – the corresponding average values of the period from 2007 to 2009 are used. They are then regressed against the average values of the explanatory variables of the period from 2005 to 2007. The lag between the dependent and the independent variables is implemented deliberately, as investment decisions are presumably made on the basis of the prevalent conditions in the recent years before the actual investment. The hypotheses are tested in a continental African main model along with three regional sub-models.

\(^5\) In the case of the Chinese ODI series this can partly be explained by the fact that China only just recently started to actually invest in certain countries.

\(^6\) This methodical approach is adopted from Kolstad & Wiig (2009), who were facing similar problems.
3.1 Data

The required data were obtained from different sources and databases. Data about Chinese ODI to the different African host countries were acquired from the ‘2009 Statistical Bulletin of China’s Outward Foreign Direct Investment’ published by China’s Ministry of Commerce (MOFCOM). Data for the independent variables were inter alia obtained from different World Bank databases, namely the ‘World Development Indicators 2011’ (WDI), ‘Global Development Finance 2011’ (GDF), the ‘Africa Development Indicators 2010’ (ADI), and the ‘World Development Report 2011’ (WDR). Additionally, data were acquired from the ‘Statistical Yearbook of China’ (SYC) (various years) by the National Bureau of Statistics of China (NBS), and the International Energy Statistics published by the U.S. Energy Information Administration (EIA).

While working with statistical data one must always be aware of one thing: Statistics are man-made and therefore subject to different kinds of errors. The tag ‘official’ does not change this fact. Possible errors may have manifold sources such as e.g. measurement errors, unclear concept definitions, different measurement techniques, or even intentional data falsification. Against this background, the quality of China’s official statistics is often regarded as questionable. On one side it is very difficult to compile accurate statistics in such a huge developing and transition economy; on the other side China’s statistics are regarded as highly politicized (Holz 2004). Most probably, different countries’ statistical data quality actually varies considerably. Nevertheless, above-mentioned concerns apply to the handling of any statistical data, no matter which state or institution may be their originator.

The African data were obtained from the different World Bank datasets mentioned above. In the context of data quality the World Bank calls attention to the fact that their data are collected from national statistical agencies, central banks, and customs services. These primary data collectors use different methods and conventions, which “may give rise to significant discrepancies over time both within countries and across them. Delays in reporting data and the use of old surveys as the base for current estimates may further compromise the quality of data reported” (The World Bank 2011b: 393). The World Bank further admits that the data sometimes “may be subject to considerable margins of error” and that “the usual care must be taken in interpreting the ratios, particularly for the most recent years, because figures may be preliminary and subject to revision” (The World Bank 2011a: 327).
In the end, there is no alternative to those ‘official’ statistical data. Yet the awareness of possible shortcomings in data quality is imperative.

3.2 Variables and Model Specification

Data for the dependent variable – Chinese ODI to the African host countries (Ø2007-2009, reported in million US$) – were obtained from the ‘2009 Statistical Bulletin of China’s Outward Foreign Direct Investment’. The bulletin provides data for 467 African host countries. From an econometric perspective this is a very small number of observations, especially given the high degree of complexity of the topic at hand. Hence, one should be aware that the reliability of the regression results should not be overestimated. According to Jann (2006), such small models and corresponding significances are generally extremely sensitive and also at very great risk of being distorted by possible extreme values. Accordingly, all the variables of the underlying dataset were examined for such potentially distortive outliers. Only one problematic extreme value was found – but a very weighty one. In 2008, Chinese ODI to South Africa amounted to 4.81 billion US$. Table 1 shows how drastic an investment this is in relation to other years and in relation to investments to the African continent in total.

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>391.68$</td>
<td>519.86$</td>
<td>1574.31$</td>
<td>5490.55$</td>
<td>1438.87$</td>
</tr>
<tr>
<td>South Africa</td>
<td>47.47$</td>
<td>40.74$</td>
<td>454.41$</td>
<td>4807.86$</td>
<td>41.59$</td>
</tr>
<tr>
<td>% (South Africa/Africa)</td>
<td>12.12%</td>
<td>7.84%</td>
<td>28.86%</td>
<td>87.57%</td>
<td>2.89%</td>
</tr>
</tbody>
</table>


Chinese outward foreign direct investments to South Africa in 2008 accounted for 87.57% of all Chinese investments to the African continent. This record sum of 4.81 billion US$ is more than three times bigger than the largest sum that had been invested on the whole continent before (and after) (2007: $1.57billion, 2009: $1.43billion). Figure 2 illustrates these circumstances nicely:

---

7 Algeria, Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Chad, Congo (Democratic Republic), Congo (Republic), Côte D’Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe
How did this enormous peak occur? In 2007, the state-owned Industrial and Commercial Bank of China announced to buy a 20 percent stake in South Africa’s Standard Bank. The deal had a then estimated volume of around 5.5 billion US$ (Financial Times 2007, October 25). Standard Bank commented the deal as a vote of confidence in South Africa and Africa and the future relationship between China and the African continent (Financial Times 2007, October 25). This deal explains the sudden surge in Chinese ODI to South Africa.

As mentioned above, the regression is performed by using the average Chinese ODI-values from 2007-2009. In South Africa’s case this value would be $1'767.95 million. This is by far the highest Chinese ODI-value of that period, followed by Nigeria at $241.59 million (see tab. 2). The mean of all African observations (N=46) is $63.71 million. As preliminary regressions showed, the South African observation is an outlier with distortive effects on the whole model. Jann (2006) presents a set of considerations concerning the handling of distortive outliers. However, he emphasizes that decision-making regarding this issue can eventually be highly subjective. The crudest way to deal with the problem would be to just simply omit the respective observation (and of course report it!). In the context of this analysis, simply omitting South Africa is not a desirable option, as it is an extremely important player on the African continent.

Instead, an alternative approach of mitigating the observation’s distortive effect is chosen: In place of using the average from 2007 to 2009 ($1’767.95 million), the average of the years 2007 and 2009 ($248 million) is used. Thereby, only the extraordinary year of 2008 is omitted, instead of South Africa as a whole observation. 248 million US$ is still the highest average Chinese

\[ \frac{454.41 \text{ million} + 4807.86 \text{ million} + 41.59 \text{ million}}{3} \]

\[ \frac{454.41 \text{ million} + 41.59 \text{ million}}{2} \]
ODI-value in comparison with all the other African countries (see tab. 2). Therefore, the distortive effect of the South African observation is somewhat moderated, while at the same time justice is still done to the weighty role of South Africa on the African continent. Nevertheless, when interpreting the results, it should be kept in mind that the actual ‘South Africa effect’ would be even stronger.

<table>
<thead>
<tr>
<th>Country</th>
<th>Chinese ODI</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>1767.95$^{10} / 248$^{11}</td>
</tr>
<tr>
<td>Nigeria</td>
<td>241.59$</td>
</tr>
<tr>
<td>Zambia</td>
<td>148.37$</td>
</tr>
<tr>
<td>Algeria</td>
<td>138.98$</td>
</tr>
<tr>
<td>Congo (Dem. Rep.)</td>
<td>102.81$</td>
</tr>
</tbody>
</table>


In the following, considerations concerning the explanatory variables (Ø2005-2007) shall be reviewed. As mentioned above, except for the South African ODI-case discussed before, no further problematic outliers had to be treated.

In order to test the ‘resource-seeking hypothesis’, several corresponding measures will be analyzed. Most of the few other studies, which econometrically approach the topic of Chinese outward investment (e.g. Buckley et al. 2007, Kolstad & Wiig 2009), use different kinds of natural resource export shares as proxies. This analysis, however, works with absolute numbers of resource endowments. This approach is chosen as absolute endowment numbers are considered as more revealing concerning the most important question for a natural resource-seeking investor: How much is actually in the ground?

As literature suggests, fuels - namely oil and gas - are the most sought-after resources. The EIA provides country data for total oil supply (in 1000 bbl/d) and dry natural gas production (in billion cubic feet). Though, the initial plan of using oil and gas as two separate variables had to be aborted, due to multicollinearity problems. The reason behind these problems is that oil and gas have very similar formation processes and therefore often occur together. In order to cope with these multicollinearity issues, the two variables are added up to one ‘oil/gas variable’.

\[^{10}2008~\text{included}\]
\[^{11}2008~\text{omitted}\]
Endowment of arable land (in 1000 km\(^2\)) is a further ‘resource-seeking variable’. Data are provided in the WDI/GDF dataset\(^{12}\), where arable land is defined as “land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow”.

Endowment of forest area (in 1000 km\(^2\)) is analyzed as well. Corresponding data are obtained from the World Bank’s ADI.

Unfortunately, no absolute data for endowment of metals and ores could be obtained. Therefore, metal and ore exports as share of merchandise exports (% of merchandise exports) are used as a proxy. This measure does not reveal absolute quantities, but rather answers the question ‘Is this country a ‘metals and ores export case’?’. Corresponding data were obtained from the WDI/GDF dataset. The dataset only provides data for 35 of the 46 treated countries, though.

In order to test the ‘market-seeking hypothesis’ GDP (in billion current US$) is utilized as a proxy for absolute host market size. This is in line with most other comparable studies: “GDP is found to be robustly associated with FDI in a number of studies, and is commonly argued to reflect market size in host economies and hence markets-seeking motives of investors” (Kolstad & Wiig 2009). Additionally, GDP per capita and GDP growth were taken into consideration as further market size, respectively market potential proxies. However, these measures never attained significance in preliminary experimental regressions and thus were not used in the final model specification.

While natural resources and markets in Africa are supposed to be the main drivers of Chinese ODI to the continent, it is not expected that this relationship is completely unaffected by other factors. Controls are included in order to test for the economic and institutional risk sensitivity of those investments.

Accordingly, the host countries’ inflation rates (consumer prices, annual %) are part of the model. Corresponding data are obtained from the WDI/GDF dataset.

Further, the ‘Rule of Law’-index will be included. It measures “the extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, the police, and the courts, as well as the likelihood of crime and violence” (The World Bank 2010b). According data are provided in the WDR 2011. Data are originally coded from -2.5 to

\(^{12}\) WDI and GDF are separately released World Bank publications, but their underlying data are published in one compiling dataset.
2.5, with higher values corresponding with better governance outcomes, but have been recoded from 0 to 5 for this analysis.

Buckley et al. (2007) additionally suggest export and import volumes as control variables. They point out that ODI could also have a support function for both exports and imports. Such ODI would aim at the facilitation of Chinese exporters’ business operations in the African host markets, by providing e.g. information or transportation via local subsidiaries. This would touch on the market-seeking motive. Analogously, ODI could aim at the support of imports from the African host countries to China, e.g. by providing necessary infrastructure in Africa. This would probably touch the resource-seeking motive (Buckley et al. 2007). The SYCs provide absolute export and import data (in 10’000 US$). But surprisingly, these variables never attained significance and impaired the model in preliminary experimental regression. They are therefore not included in the final specification.

Nevertheless, as part of the discussion, trade patterns will be addressed in chapter 4. Data from the SYCs is not suitable for this task, though, as they only provide information about mere total export and import volumes, but not about what is actually traded. Therefore, corresponding literature will be consulted.

As mentioned above, the hypotheses are tested in a continental African main model (including all countries) along with three regional sub-models. Against the background of the African continent’s great diversity, the sub-models serve to test for supposedly different regional patterns of ODI determinants. The sub-models are the North African model, the West African model, and the Southern/Central/East African model. They derive from the geographic division of Africa, not the UN subregions. Southern, Central, and East Africa are pooled, in order to obtain a fairly reasonable sample size, especially given the potentially distortive South African case. The metals and ores variable does not provide data for every country. As a consequence, it is not included in the North and West African sub-models, as it would adversely reduce their sample sizes.

---

13 Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Sudan, Tunisia
14 Benin, Cape Verde, Cote D’Ivoir, Gambia, Ghana, Guinea, Liberia, Nigeria, Senegal, Sierra Leone, Togo
15 Angola, Botswana, Burundi, Cameroon, Congo (Democratic Republic), Congo (Republic), Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Kenya, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, South Africa, Tanzania, Uganda, Zambia, Zimbabwe
At this point, it has to be emphasized again that given the small sample sizes one should be very careful not to overestimate the reliability of the regression results (cf. Jann 2006).

The regression results are reported in table 3 (chapter 4), descriptive statistics for the utilized variables can be found in the Appendix.

4. Results and Implications

4.1 Regression Results

Table 3 reveals the regression results:

<table>
<thead>
<tr>
<th></th>
<th>Continental model</th>
<th>North African model</th>
<th>West African model</th>
<th>Southern/Central/East African model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coefficient</strong></td>
<td><strong>Coefficient</strong></td>
<td><strong>Coefficient</strong></td>
<td><strong>Coefficient</strong></td>
<td><strong>Coefficient</strong></td>
</tr>
<tr>
<td>(standard error)</td>
<td>(standard error)</td>
<td>(standard error)</td>
<td>(standard error)</td>
<td>(standard error)</td>
</tr>
<tr>
<td>Oil/gas</td>
<td>0.012**</td>
<td>0.023**</td>
<td>0.029**</td>
<td>-0.206</td>
</tr>
<tr>
<td>(0.006)</td>
<td>(0.006)</td>
<td>(0.008)</td>
<td>(0.147)</td>
<td></td>
</tr>
<tr>
<td>Arable land</td>
<td>0.250**</td>
<td>0.382*</td>
<td>0.416**</td>
<td>-0.331</td>
</tr>
<tr>
<td>(0.097)</td>
<td>(0.125)</td>
<td>(0.092)</td>
<td>(0.292)</td>
<td></td>
</tr>
<tr>
<td>Forest</td>
<td>0.045</td>
<td>-0.055</td>
<td>-0.032</td>
<td>0.182*</td>
</tr>
<tr>
<td>(0.038)</td>
<td>(0.043)</td>
<td>(0.039)</td>
<td>(0.092)</td>
<td></td>
</tr>
<tr>
<td>Metals and ores</td>
<td>0.695***</td>
<td>-0.082</td>
<td>-0.047</td>
<td>0.340</td>
</tr>
<tr>
<td>(0.215)</td>
<td>(0.251)</td>
<td>(0.271)</td>
<td>(0.449)</td>
<td></td>
</tr>
<tr>
<td>GDP</td>
<td>0.676***</td>
<td>-0.082</td>
<td>-0.047</td>
<td>1.266***</td>
</tr>
<tr>
<td>(0.127)</td>
<td>(0.251)</td>
<td>(0.271)</td>
<td>(0.313)</td>
<td></td>
</tr>
<tr>
<td>Inflation</td>
<td>0.001</td>
<td>1.539</td>
<td>0.917***</td>
<td>-0.003</td>
</tr>
<tr>
<td>(0.004)</td>
<td>(2.120)</td>
<td>(0.148)</td>
<td>(0.004)</td>
<td></td>
</tr>
<tr>
<td>Rule of Law</td>
<td>9.817</td>
<td>-7.603</td>
<td>3.169</td>
<td>-4.334</td>
</tr>
<tr>
<td>(9.864)</td>
<td>(13.664)</td>
<td>(1.555)</td>
<td>(15.530)</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-37.373</td>
<td>3.514</td>
<td>-13.079**</td>
<td>7.470</td>
</tr>
<tr>
<td>(23.673)</td>
<td>(30.062)</td>
<td>(3.983)</td>
<td>(39.131)</td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.847</td>
<td>0.966</td>
<td>0.999</td>
<td>0.890</td>
</tr>
<tr>
<td>N</td>
<td>35</td>
<td>10</td>
<td>11</td>
<td>18</td>
</tr>
</tbody>
</table>

***=p<0.01; **=p<0.05; *=p<0.10

Tab. 3: OLS regression results (dependent variable: Chinese ODI 02007-2009)
In line with expectations, the results of the main model (continental model) indicate a positive relationship between natural resource endowments of the African host countries and Chinese ODI. Three out of the four corresponding measures – oil/gas, arable land, and metals and ores – show to be significantly and positively associated with Chinese ODI. As mentioned earlier in this paper (see 3.2), no absolute data for endowments of metals and ores could be obtained for the corresponding variable. Instead, metal and ore exports as share of merchandise exports are utilized as a proxy. Hence, for the metals and ores variable, the positive association is not between absolute endowments of metals and ores and Chinese ODI, but between metal and ore exports as share of merchandise exports and Chinese ODI. This does not tell us anything about the association between how much is actually in the ground and Chinese ODI and therefore provides less valuable information than the other ‘resource-seeking variables’, which are measured in absolute terms. However, with the positive effects of oil/gas and arable land, which are significant at a five percent level, the results of the continental African main model provide support in favor of Hypothesis 1 (natural resource-seeking).

Based on the results of the continental African main model, absolute host market size, measured in the form of GDP, has a highly significant (at a one percent level) positive influence on Chinese ODI to Africa. This provides support in favor of Hypothesis 2 (market-seeking). However, while it is not surprising that the Sino-African case seems to be consistent with traditional market-seeking theory, it still might feature some distinctions. In this connection, Alden et al. (2008) state: “Africa is a market but also a testing ground for Chinese companies in China’s ‘going out’ policy to gain experience as well as establish and expand business ventures in the continent and into the global arena”.

Neither host country inflation, nor Rule of Law – representing economic, respectively institutional risk factors – turn out to be significantly associated with Chinese ODI in the main model. This ‘indifference’ towards risk factors can be interpreted as an indication of the above-mentioned risk tolerance of Chinese MNEs. Thus, these results do not provide evidence that Chinese ODI is deterred by the African host countries’ economic and institutional risks, which is compatible with Hypothesis 3 (risk tolerance). In this connection, some studies (e.g. Morck et al. 2008, Yeung & Liu 2008) even indicate that, compared to enterprises from highly developed countries, Chinese MNEs have a comparative advantage in operating in relatively opaque business environments, as they are already used to it from China.
The results of the North African and the West African sub-models corroborate the common assumption of the resource-seeking motive as a main driver of Chinese ODI in Africa. In both sub-models, oil/gas and arable land are significantly and positively associated with Chinese ODI, while forest does not seem to be a significant determinant in Northern and Western Africa. These results come as no real surprise, even though one would maybe not intuitively expect a significant positive association between \textit{arable land} and Chinese ODI in the North African model. But, out of the 46 African countries under examination, four North African countries – Sudan, Niger, Morocco, and Algeria – are in the Top 10 in terms of arable land endowment. Sudan, with 193,340 km\textsuperscript{2} of arable land ranks second only behind Nigeria with 365,000 km\textsuperscript{2}. For comparison, just to point out the massiveness of these figures: Germany as a whole, not just arable land, has a landmass of 357,000 km\textsuperscript{2}. Algeria, Sudan, and Niger are amongst the Top 10 African recipients of Chinese ODI, too. While especially Algeria and Sudan have originally been prominent for their oil/gas endowments – both are in the respective African Top 10 – there is more and more qualitative evidence that the strategic importance of those countries’ arable land endowments indeed is on the rise, as well. Recently, there have been frequent reports about the ‘land grab’ of Chinese – as well as Western, Arab, Indian, and South Korean – investors in Africa. In this connection, Algeria and Sudan are hot spots. Frequently, and this causes a lot of controversy and criticism, Chinese MNEs bring along their own agricultural workforce. There are estimates that more than a million ethnic Chinese farm workers are on the African continent already (The Independent 2009, May 3; Zeit Online 2010, October 3). Why would these African countries allow this? First of all, of course, it is a relatively easy way of simply bringing new capital into the country. But in Algeria, for example, as its head of the National Chamber of Agriculture, Mohamed Cherif Ould Hocine (cited in Reuters Africa 2010, April 8), points out, inviting bids from foreign investors to lease farmland is also part of efforts to ease the country’s food imports expenditures. Further, he explains that Algeria “wants to rationally use its tools with the aim of increasing agricultural production”.

In neither the North African, nor the West African sub-model absolute host market size (GDP) is found to be a significant determinant of Chinese ODI. Hence, Chinese MNEs do not seem to pursue a market-seeking strategy in Northern and Western Africa.

In regard to Hypothesis 3, results of both the North African and the West African sub-model suggest Chinese ODI to be quite risk tolerant. Quite surprisingly, in the West African model, the
coefficient on inflation is highly significant and positive. However, it is rather unlikely that Chinese ODI is actually attracted by West African inflation. Buckley et al. (2007), who get similar results in their global-level study, alternatively interpret this outcome as follows: “It may also support the view that the investment decisions of Chinese firms are unusually tolerant of less stable countries with respect to local economic conditions”.

In the Southern/Central/East African model, amongst the natural resource variables, only forest is significantly (at a ten percent level) and positively associated with Chinese ODI. That forest seems to be a determining factor in this particular sub-model is reasonable, given the fact that Gabon, Congo (Republic), Equatorial Guinea, Mozambique, Cameroon, and Tanzania – which are all part of this sub-model - are China’s main timber sources (Böhringer et al. 2007). Meanwhile, it is somewhat surprising that the metals and ores coefficient did not turn out to be significant in this region. Maybe the reason behind this outcome is that export shares were utilized for the metals and ores variable, instead of absolute quantities.

Within the Southern/Central/East African model market-seeking seems to be the main driver of Chinese ODI. The corresponding coefficient – absolute host market size (GDP) – has a highly significant (at a one percent level) and positive effect on Chinese ODI. In this connection, it is appropriate to reflect again about South Africa, the number one African recipient of Chinese ODI. Why does South Africa play such a prominent role? Jenkins and Thomas (2002) see the reason in the country’s “superior infrastructure, physical and financial, and the fact that South Africa is by far the largest economy [on the African continent]”. In the period from 2005 to 2007 South Africa’s average GDP amounted to 264.79 billion US$, while the continental mean (N=46) was 24.67 billion US$. Further, South Africa is ascribed great potential and “is seen by many investors to be pivotal for regional production and trade” (Jenkins & Thomas 2002). In other words: South Africa features the structures required to become a ‘pan-African hub’.

The coefficients of the ‘risk variables’ do not turn out to be significant in the Southern/Central/East African model, either. Once again, this provides support in favor of the ‘risk tolerance hypothesis’.

In summary, the regression results corroborate the assumption of natural resource-seeking (Continental model, North African model, West African model, and to a lesser degree (forest) the
Southern/Central/East African model) and market-seeking (Continental model, Southern/Central/East African model) motives behind Chinese ODI in Africa. Based on the results of the four models, Chinese MNEs seem to pursue these motives unaffected by economic and institutional risk factors.

In the following, the implications of primarily natural resource-seeking and market-seeking Chinese FDI will be examined, with respect to Africa’s economic development.

4.2 The ‘FDI-Trade Nexus’

Evidence suggests that China is a resource- and market-seeking investor; and Sino-African trade is demonstrably growing (see fig. 3).

![Fig. 3: Chinese Imports/Exports from/to Africa 2000-2009 (in billion US$) (Data source: SYC (various years))](image_url)

In order to assess the implications of this nexus of investment and trade, the ‘black box’ of mere total trade volumes has to be cracked. The following figure shows the actual trade structure between China and Africa, from a Chinese perspective (see fig. 4):
Simplistically summarized, figure 4 shows the following: Africa is endowed with natural resources and is in need of industrial goods, while China is in need of natural resources and has industrial goods to offer. Within the context of the controversial Sino-African discussions, this pattern is judged on a spectrum which spans from ‘win-win situation’ and ‘mutual benefit’ to ‘neo-colonialism’. Indeed, there are assets and drawbacks:

China’s engagement in Africa is a chance for the continent’s countries to get further involved in the global economy. Due to China’s massive economic growth and corresponding ‘resource hunger’, many resource rich African countries could increase their export revenues significantly. However, this situation is not without risks. Africa’s traditional focus on natural resource exports is reinforced by the growing Chinese demand. This, consequently, makes some of the African countries increasingly dependent on Chinese demand for natural resources, or even one natural resource. Additionally, mere concentration on natural resource exports can lead to ‘Dutch Disease’-effects which weaken the other sectors. Further, and with regard to the market-seeking motive, figure 4 exposes what kind of products markets are actually sought for – mainly basic manufactures, often produced by Chinese SOEs, which are struggling with domestic overcapacities and private competition. The positive interpretation of this ‘flood’ of Chinese manufacture exports to Africa is that it grants the individual African consumer access to cheap basic consumer goods with satisfactory quality. On the other side, these cheap Chinese products hamper the development of existing or emerging African light industries (Berke 2007).
On the short run, the ‘complementary pattern’ above might indeed be beneficent for both China and Africa. But in order to achieve a sustainable African economic development, the mere sale of natural resources must be seen as a ‘launching base’. On the long run, the African countries should attempt to climb the value chain. In order to bring the Sino-African nexus of FDI and trade into a corresponding line, the African host countries will need elaborate terms of investment and supportive policies.

4.3 African Flying Geese?

China’s African Policy states that “China and Africa will learn from and draw upon each other's experience in governance and development” (MFA 2006). In this connection, Bräutigam (2008: 65f.) evaluates the possibility of an African adaption of the ‘Flying Geese’ model. To move into gear, the Asian ‘Flying Geese’ dynamism “required local investment by the ‘lead goose’ and joint ventures that spread knowledge to capable local entrepreneurs” (Bräutigam 2008: 65). In the Sino-African case, investment is there, as well, but the links with domestic African enterprises are mostly missing. To a certain degree, this might be the case because suitable African counterparts are simply inexistent at the present stage of development. Further, the Chinese investment deals are primarily bargained with the African governments, instead of with the enterprises (Bräutigam 2008: 65). This is not a problem per se. But while China proactively supported joint venture development between Chinese SOEs and foreign investors in the Chinese SEZs, African governments often just “allocate land to [Chinese] developers and do little else” (Bräutigam et al. 2010). While China pursued a policy of systematically planned phase models – where the investor took the lead in a first phase, before Chinese interests took over – Chinese enterprises in Africa get concessions of 50 to 99 years. So far, local African employment in the Chinese investment projects, supply chain links, and technology transfer still remain limited. Without strategic plans about how and when to phase in local control and accompanying local content requirements, the promising Chinese investment projects are at risk to become mere Chinese enclaves without a connection to the rest of the domestic economy (Bräutigam et al. 2010).

The Asian ‘Flying Geese’ dynamism was driven by sharply rising labor costs which imposed an incentive to seek cheaper offshore production sites (Bräutigam 2008: 65). As discussed earlier in this paper (see 2.2.3), this mechanism does not (yet) apply to the Sino-African case.
A strong state, able to shape a beneficial FDI policy framework, was a further very important component of the Asian ‘Flying Geese’ model. In this connection, Ravallion (2008) states that “judged by almost any standards, but certainly when assessed against China’s tradition of strong state institutions, Africa is clearly lagging”. In the governance context, most African states are definitely in urgent need of reforms.

Without meeting these prerequisites of the ‘Flying Geese’ model, it will prove difficult for the ‘African geese’ to take off in a similar manner as the Asian ones. However, as Quibria (2002) points out, “one should keep in mind that policies and institutions cannot just be ‘cherry-picked’ from one empirical context to another. Policies and institutions evolve and flourish in the context of societies, which have their own dynamics”. China, too, made use of its very own adaption of ‘the’ Asian ‘Flying Geese’ model. However, Africa has rich, multifarious, and desperately sought-after endowments – be it oil/gas, arable land, timber, metals and ores, or large markets - and therefore has substantial bargaining power. In order to sustainably exploit the potential of Chinese ODI in Africa, the African governments would do well to use this power to create corresponding framework conditions for foreign investment projects. Certain elements should imperatively be included in such a framework:

First of all, clear and consequently pursued African joint venture strategies should be formulated. On this basis, the African host governments should actively get involved in the projects, for example through specifically assigned people who work with Chinese development teams, or through high-level participation on boards. Derived from the strategy, corresponding regulations and standards, which meet local development goals, should be communicated and articulated clearly. Such standards should involve local content requirements, local job creation, knowledge and technology transfer through training programmes, and additional supportive (infrastructural) ‘tie-in’ projects. Basically, this is how the Chinese proceeded in their SEZs. A further central element is a clear arrangement for the process of phasing-in local control. But the final aim must not only be independent operation, but also the promotion of links with domestic industries and ultimately the generation of value-added economic activities (Bräutigam et al. 2010, Alden 2005).

Certainly, standards and regulations as the above-mentioned have to be enforced, as well. As mentioned, the African countries are actually equipped with the leverage to do so. As the regression results suggest, determinants of Chinese ODI to Africa differ regionally. African leaders need to assess the core motives behind Chinese investments in their countries and strictly
tie access to the target - be it e.g. timber or a market – to conditionalities (joint ventures, tie-in projects, etc.). For example, access to arable land could only be granted on condition that investors also provide irrigation infrastructure, machinery, seeds, fertilizers and a certain quota of local workers will be hired and trained.

On a more political level, African votes in international organizations, such as the UN or the WTO, are an additional ‘bargaining chip’ of the African governments. As an aspiring superpower and also in connection with the ‘Taiwan question’, China becomes increasingly dependent on African votes (Alden et al. 2008).

The African countries would do well to prudently, strategically, and consequently make use of their ‘bargaining tools’, in order to sustainably profit from Chinese investments.

5. Conclusions

The regression results presented in this paper provide empirical evidence in favor of the assumption that Chinese ODI in Africa is mainly driven by natural resource-seeking and market-seeking motives.

The continental African main model provides support in favor of all three hypotheses: With regard to Hypothesis 1 (natural resource-seeking), the results suggest a significant positive relationship between the African host countries’ endowments of natural resources and Chinese ODI. Three out of four corresponding variables - oil/gas, arable land, and metals and ores - show to be significantly and positively associated with Chinese ODI. In addition, and with regard to Hypothesis 2 (market-seeking), the results of the continental main model suggest a significant positive relationship between the African host countries’ market sizes, measured in the form of GDP, and Chinese ODI. In line with Hypothesis 3 (risk tolerance), Chinese ODI does not seem to be deterred by the African host countries’ economic and institutional risk factors. This applies to the results of the continental African main model, as well as to those of the three regional sub-models. The results of the North African and the West African sub-models suggest that oil/gas and arable land are the main determinants of Chinese ODI in the corresponding regions. Absolute host market size (GDP) does not turn out to be a significant determinant of Chinese ODI in the North African and West African models. In contrast, within the Southern/Central/East African model host market size has a highly significant positive effect on Chinese ODI, while amongst the natural resource variables only forest turns out to be significant.
Linked to China’s natural resource-seeking and market-seeking investment motives in Africa, a trade pattern, which is characterized by Chinese manufactured exports to and natural resource imports from Africa, occurs. On the short run, this pattern can be interpreted as a win-win situation, but from an African perspective, it must be understood as a ‘launching base’. In order to sustainably profit from the Sino-African cooperation and to break free from dependences, the African countries must climb the value chain and aim at economic activities beyond the simple selling out of natural resources. This is a very challenging task. But embedded in smart strategies, the Chinese investments in Africa have great potential to help fulfilling this task. Such strategies imperatively include active African involvement in the Chinese investment projects and the enforcement of policies which shape these projects in a way that they actually have a fructifying effect on the host countries’ economic development.
References


Appendix

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<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
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Tab. A: Descriptive statistics