

Characteristics and Host Country Drivers of Chinese FDI in Europe

A Company-level Analysis

Gammeltoft, Peter; Fasshauer, Kirsten

Document Version

Accepted author manuscript

Published in:

International Journal of Technology Management

DOI:

[10.1504/IJTM.2017.10004277](https://doi.org/10.1504/IJTM.2017.10004277)

Publication date:

2017

License

Unspecified

Citation for published version (APA):

Gammeltoft, P., & Fasshauer, K. (2017). Characteristics and Host Country Drivers of Chinese FDI in Europe: A Company-level Analysis. *International Journal of Technology Management*, 74(1-4), 140-166.
<https://doi.org/10.1504/IJTM.2017.10004277>

[Link to publication in CBS Research Portal](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

If you believe that this document breaches copyright please contact us (research.lib@cbs.dk) providing details, and we will remove access to the work immediately and investigate your claim.

Download date: 18. Jun. 2025



Characteristics and Host Country Drivers of Chinese FDI in Europe: A Company-level Analysis

Peter Gammeltoft and Kirsten Fasshauer

Journal article (Accepted manuscript*)

Please cite this article as:

Gammeltoft, P., & Fasshauer, K. (2017). Characteristics and Host Country Drivers of Chinese FDI in Europe: A Company-level Analysis. *International Journal of Technology Management*, 74(1-4), 140-166. DOI: 10.1504/IJTM.2017.10004277

DOI: [10.1504/IJTM.2017.10004277](https://doi.org/10.1504/IJTM.2017.10004277)

* This version of the article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the publisher's final version AKA Version of Record.

Uploaded to [CBS Research Portal](#): February 2019

CHARACTERISTICS AND HOST COUNTRY DRIVERS OF CHINESE FDI IN EUROPE: A COMPANY-LEVEL ANALYSIS

Peter Gammeltoft*

Department of International Economics & Management

Copenhagen Business School

Porcelænshaven 24

DK-2000 Frederiksberg, Denmark

E-mail: pg.int@cbs.dk

*Corresponding author

Kirsten Fasshauer

Damco International A/S

Hammerensgade 4

DK-1267 Copenhagen K

E-mail: Kirsten.Fasshauer@damco.com

Abstract: The present study of direct investment from mainland China into Europe complements and extends prior studies by building on a firm-level database comprising of 548 Chinese subsidiaries in 26 countries in EU and EFTA. The study identifies and characterizes three segments of subsidiaries, predominantly related to private companies' market-seeking activities, state-owned companies' production- and technology-seeking activities, and efficiency-seeking activities in Eastern Europe, respectively. Through multivariate regression the study finds that potentials for market exploitation are particularly important host country factors for attracting Chinese FDI. There is no strong correlation between aggregate national R&D spending and Chinese knowledge-seeking investments, reflecting that such investments tend to be individual and highly idiosyncratic cases. Rather than a wholesale adoption or dismissal of extant FDI-theories vis-à-vis new ones, extant theories are found to apply differentially to the different identified segments of Chinese outward FDI.

Keywords: emerging economy multinationals; foreign direct investment; FDI; outward foreign direct investment; Chinese investments in Europe; strategic asset-seeking investments.

Biographical notes: Peter Gammeltoft is a Professor of International Business at the Department of International Economics & Management, Copenhagen Business School. His research focuses on economic and technological change, particularly globalization of innovation, with East Asia as the primary area specialization. He is currently working on projects concerning outward investments from emerging economies and teaches subjects in international business and emerging economies. Prior to pursuing an academic career he worked in management consulting.

Kirsten Fasshauer is an Operational Excellence Navigator with Damco International A/S, implementing LEAN management tools and mindset in offices worldwide as internal management consultant. She holds an M.Sc. in Economics and Business Administration from Copenhagen Business School, specializing in International Business.

Introduction

China's progression from a major recipient of inflows of foreign direct investment to also being a major source of outward FDI has not gone by unnoticed. In Europe, while these flows are welcomed by financially strained European governments, they are also a cause for concern. At the root of this concern lies the fact that these investments are a relatively new phenomenon, which is undergoing rapid development, and remains poorly understood. It is therefore important to identify the motives and operating modes of Chinese investments on a broader scale in order to enhance their transparency and better enable the forging of appropriate policy and strategy responses in business and government.

Existing quantitative studies on Chinese outward FDI in general and into Europe in particular almost exclusively analyze total investment volume and include little or no data at the company level. On the other hand, qualitative research tends to only consider a small number of case companies, typically involving sensitive areas such as the acquisition of renowned manufacturers or the natural resources sector, and often fails to reach generalizable conclusions.

The present study addresses this contemporary research need and seeks to provide a more comprehensive overview over characteristics and motives of Chinese investment projects in Europe and how they relate to extant theory. The study builds on a firm-level database comprising of 548 Chinese subsidiaries in 26 countries in EU and EFTA, supplemented with host country variables and additional firm-level secondary data. It comprises all sectors except the financial and the natural resources sectors.

In more specific terms, the research population consists of all subsidiaries owned or invested in by Chinese parent companies that are located in the member states of the European Union and EFTA. The study concerns contemporary investments and encompasses the period from 2003 to 2010. Prior to the 'Go Global' (*zou chu qu*) policy of 1999, an extensive reform which was not fully implemented until 2002 (Buckley et al., 2007), heavy regulatory and institutional restrictions on outward FDI were in place. The environment for Chinese outward FDI prior to the reform was so different from that which prevailed later that the underlying motivations of authorized FDI projects can hardly be compared across the two periods. Hence, only investments made after the full implementation of the Go Global policy will be included. Since not all necessary data is available for 2002 and 2011, the quantitative analysis will focus on investments that were made in the years from 2003 to 2010.

A prominent debate in the evolving literature on outward investment from emerging economies is the extent to which extant theories and models on FDI can be applied unabridged to these investment flows or whether significant alterations or entirely new theories are required. Based on analyses of Chinese investments in Europe we discuss how the findings relate to extant theories, viz. the gravity approach, the Uppsala model, and the OLI paradigm, and to newer theories developed specifically for outward investment from emerging economies, viz. the government steward logic, latecomer theory and the springboard view.

By combining descriptive and regression analyses, this study complements and extends prior studies and addresses how Chinese FDI in Europe has developed over time, how it is composed and which host country factors attract Chinese FDI. The results are not only of relevance to academia, but also to policy makers and an increasing number of European businesses, which have begun to face Chinese competitors at home.

Methodology

In the following we will discuss the construction of the company database and the choice of analysis techniques. Details on the definition and coding of database variables are provided in Appendix 1.

Individual company-level data for this study was extracted from the Orbis database, compiled and continuously updated by the Bureau van Dijk. While not claiming to be complete, Orbis combines extensive company information from about 100 different sources and includes data on approximately 100 million currently operating companies worldwide. As Orbis did not contain all information necessary for the analyses, additional information was added to the database from company websites, annual reports, news articles and online company databases.

In Orbis, it is possible to identify companies registered in Europe with a global ultimate owner located in China. This includes companies that are owned by a global ultimate owner situated in China indirectly at the second or third level. This substantially improves the completeness of the dataset since many European subsidiaries are owned at the first level by existing foreign affiliates outside China.¹

Information about the subsidiary name, its owners, the date of incorporation and company size was extracted from Orbis. For each subsidiary, a number of characteristics of the investor, the investing parent company, were also included in the analysis. These characteristics were type of ownership (private vs. state owned), company size, and whether the investor had other foreign subsidiaries prior to investing in Europe.

A high quality and accuracy of data was ensured by checking and if necessary supplementing on an individual company basis the data retrieved from Orbis.² Companies for which essential data could not be found during this individual examination were excluded from the sample. A large number of companies turned out after closer scrutiny to be owned by an entity located in either Hong Kong or Taiwan, which are not a subject of this study.³

In several cases, a Chinese company became the ultimate owner of more than one subsidiary through a single acquisition. Indeed, the existence of a network across European countries and fields of activity could have been the very reason for the acquisition. Furthermore, one can assume that these subsidiaries would have been dissolved if they had been deemed useless. Accordingly, all such subsidiaries were included in the analysis and categorized as 'acquisition'.

The financial and the natural resources sectors are excluded from the study. Investment by financial companies are excluded because their business activities and therefore also their motivations are likely to differ substantially from other companies and therefore require a separate analysis. The scarcity of natural resources in most countries in Europe renders the search for natural resources unlikely as a major investment motive. Subsidiaries in this sector were excluded from the research population to not distort the analysis of investments in other sectors.⁴

For the analysis of host country factors' influence on Chinese FDI, no values were available for many of the host country factors considered in the cases of Liechtenstein, Cyprus, Malta and Luxembourg. Since only few non-financial subsidiaries were registered in these countries anyway, they were removed from the sample instead of deleting variables that have the potential to improve the model.⁵

After applying the various operations above on the company database, the final sample consisted of 548 Chinese subsidiaries in 26 countries.

Where the choice of statistical methods is concerned, the database was first subjected to various descriptive techniques and the data characterized with respect to selected characteristics. In order to identify distinctive types of Chinese direct investment, a hierarchical, agglomerative cluster analysis was conducted to group characteristics that tend to occur simultaneously. A cluster analysis identifies homogenous subsets in a heterogeneous totality of observations and combines variables in groups according to their similarity.

For the analysis of which host country factors attract Chinese FDI, the best empirical method to determine the relationship between several independent variables (host country factors) and one dependent variable (the number of Chinese direct investments) is a regression analysis (Backhaus et al., 2006). The dependent variable in the regression is a count variable for which there is no reason to expect a linear relationship and consequently conventional linear or log-linear regression models are not appropriate. Instead, non-linear count models were chosen for the regressions, namely Poisson and negative binomial regression.

As Chinese FDI has undergone rapid development in terms of both volume and composition over the past decade, the motivations behind Chinese investment and consequently also the host country factors that attract it may have changed. In order to be able to identify changes over time, the regression will not only be conducted for the entire dataset but also for two four-year time periods separately, 2003 to 2006 and 2007 to 2010. The subset 2003-2006 consists of 205 subsidiaries and 2007-2010 of 343.

Similarly, it has been suggested that the reasons for investing in the new member states of the European Union differ from those behind investment in the old member states. Hence, the regression will also be conducted separately for Eastern and Western European host countries respectively, defining Eastern Europe as the 12 new member states of the EU and Western Europe as the 15 old member states of the European Union plus the four members of the European Free Trade Association (EFTA). The results can thus detect changes over time and locational differences.

However, when dividing the sample into two four-year time periods, the number of Chinese subsidiaries in the new member states of the EU in each period becomes very low (20 and 39 respectively). The small sample sizes make it unfeasible to make generalized statements based on the results. Hence, only one regression including all years will be run for data on Eastern European host countries. The total number of regression runs will thus be seven.

Characteristics of Chinese subsidiaries in Europe

The following describes the characteristics of the subsidiaries in Europe and of their ultimate parent companies in China. Considering first the year of establishment of the subsidiaries, the yearly number of direct Chinese investments rose slowly but steadily throughout the period (Table 1). The large increase from 2003 to 2004 may be caused by the 'Go Global' policy introduced by the Chinese government in 1999, which liberalized and induced Chinese OFDI but was not in full effect until 2002 (Buckley et al., 2007). The spike in 2007 is due to acquisitions of large companies with several subsidiaries in Europe.

Table 1 Chinese direct investments by year (number)

| Year | Number |
|-------|--------|
| 2003 | 24 |
| 2004 | 56 |
| 2005 | 58 |
| 2006 | 67 |
| 2007 | 99 |
| 2008 | 77 |
| 2009 | 83 |
| 2010 | 84 |
| Total | 548 |

Table 2 Chinese subsidiaries by country (number and percent)

| | Number | Percent |
|----------------|--------|---------|
| Germany | 186 | 34 |
| Netherlands | 131 | 24 |
| United Kingdom | 76 | 14 |
| France | 32 | 6 |
| Romania | 19 | 3 |
| Spain | 18 | 3 |
| Poland | 15 | 3 |
| Czech Republic | 14 | 3 |
| Belgium | 12 | 2 |
| Italy | 9 | 2 |
| Austria | 6 | 1 |
| Bulgaria | 5 | 1 |

| | | |
|-------|-----|-----|
| Other | 25 | 5 |
| Total | 548 | 100 |

In terms of the geographical location of the subsidiaries, Germany hosts the largest share followed by the Netherlands, United Kingdom, France and Romania (Table 2). While only 11 percent of all subsidiaries are located in the new member states, it is noteworthy that three countries in Eastern Europe, namely Romania, Poland and the Czech Republic, are hosts to relatively many Chinese companies. Indeed, they occupy ranks five, seven and eight among all countries included in the analysis. In the member states that joined the EU in 2004⁶, only two subsidiaries were registered before the enlargement took place. Interestingly, though, Romania attracted Chinese companies already before its accession to the EU in 2007, perhaps reflective of the Chinese migrant community in the country.

Most of the subsidiaries, 63 percent, are small in size, meaning in Orbis' classification that they have less than EUR1 million of revenue, less than EUR2 million in assets and less than 15 employees (Table 3). This finding is surprising considering that public attention has so far almost exclusively been on large investment projects.

Table 3 Subsidiary size (number and percent)

| | Number | Percent |
|----------------------|--------|---------|
| Very large company | 30 | 5 |
| Large company | 71 | 13 |
| Medium-sized company | 103 | 19 |
| Small company | 344 | 63 |
| Total | 548 | 100 |

Table 4 Entry modes (number and percent of total)

| | Wholly owned | Joint venture | Total |
|-------------|--------------|---------------|-------------|
| Greenfield | 365 67% | 56 10% | 421 77% |
| Acquisition | 89 16% | 38 7% | 127 23% |
| Total | 454 83% | 94 17% | 548 100% |

According to Cui and Jiang (2009), the entry mode choice of Chinese MNEs depends primarily on the firm's strategic fit in the host industry and its strategic intent of the investment. The entry mode can thus be informative with respect to FDI objective and motivation. Each Chinese subsidiary was classified according to the chosen entry mode at the time of the initial investment. Entry mode was defined along two dimensions, namely wholly owned vs. joint venture and greenfield vs. acquisition.

Greenfield investment is much more common than acquisition as entry mode, with 77 percent of all Chinese subsidiaries in Europe being established this way (Table 4). This is in accordance with findings by Shi, Hay and Milelli (2010). Out of all subsidiaries, 83 percent are wholly owned, and the most common mode of entry by far is wholly-owned greenfield investment, representing 67 percent of all subsidiaries.

Looking at how the composition of Chinese FDI has changed with respect to entry mode over the analyzed period, it becomes apparent that greenfield joint ventures only played an important role in 2003 and 2004. This is in accordance with Buckley et al.'s (2008) global study on Chinese outward FDI, which finds that wholly-owned projects have increasingly displaced joint ventures.

It thus seems that Chinese investors today rely less on the assistance of local partners than they used to. When all subsidiaries included in the sample are taken in consideration, the years 2005, 2007 and 2011 stand out due to an unusually large share of acquisitions. However, Chinese companies frequently acquire

companies that in turn have several subsidiaries within Europe (e.g. Lenovo and SGSB Group in 2005, CIMC in 2007). Cancelling out this effect and counting every acquisition decision only once, the share of acquisitions remained relatively stable.

The large majority, 74 percent, of all Chinese subsidiaries in Europe have service provision as their main function (Table 5). Among these, the majority supply support activities, which includes all kinds of services that are carried out on behalf of the parent company, e.g. import, trade, retail, wholesale, and business, administrative and holding services. A number of service companies are also active in logistics and construction.

Table 5 Composition of subsidiary function, total, Eastern and Western Europe (number and percent)

| Function | Total | | East | West |
|---------------------|--------|---------|---------|---------|
| | Number | Percent | Percent | Percent |
| R&D | 53 | 10 | 3 | 10 |
| Manufacturing | 89 | 16 | 36 | 14 |
| Services, hereof | 406 | 74 | 61 | 76 |
| Support activities | 321 | 59 | 31 | 62 |
| Logistics | 18 | 3 | 3 | 3 |
| Construction | 14 | 3 | 12 | 1 |
| Services, other | 53 | 10 | 15 | 9 |
| Total | 548 | 100 | 100 | 100 |
| No. of subsidiaries | | | 59 | 489 |

Looking at the sectoral distribution of the subsidiaries, Chinese companies traditionally established European subsidiaries in industries in which they already competed heavily, such as electronics, machinery, appliances, textiles and apparel (Dexter et al., 2004). But in recent years, the number of sectors in which Chinese companies have invested in the EU has increased (Shi, Hay & Milelli, 2010). The collected data reflects that while electronic equipment is still important, investment in the production and wholesale of machinery, automobiles and parts and logistics has increased considerably over the time period studied. Additionally, the renewable energy sector (mostly photovoltaic and wind energy), and pharmaceuticals, chemicals and biotechnology represent new areas of investment.

It has been suggested that investment motives and strategies differ between Chinese FDI into Western and Eastern Europe and indeed there is a difference between the functions undertaken by Chinese subsidiaries (Table 5). The data reflects that Chinese companies enter Eastern Europe to manufacture products for European markets and to engage in various kinds of infrastructure projects. In Western Europe on the other hand, there is a higher occurrence of technology-seeking investments and of market servicing activities. In Eastern Europe, a larger share of subsidiaries are engaged in manufacturing, construction and, to a lesser extent, other services (Table 5). Such other services consist almost exclusively the provision of telecommunication networks, an activity that is almost non-existent for subsidiaries located in Western Europe.

In turn, relatively fewer subsidiaries are engaged in R&D and supporting activities. This indicates that while the majority of Chinese investors are attracted to Western Europe's large markets, Eastern Europe's low wages make it appealing e.g. for use as a manufacturing location for Chinese products. Chinese investors can thus avoid tariffs and get closer to their customers. In the construction and other sectors, Eastern Europe offers lower standards and easier entry than their Western European counterparts do.

In addition, the share of subsidiaries that were set up as joint ventures with local partners is twice as high in Eastern as in Western Europe (41 percent and 22 percent respectively). The reason may be that Eastern Europe represents a less transparent environment for investment, especially since few Chinese companies have gathered experience in these countries. Therefore, joint ventures with local partners, who know the local market and can be helpful in overcoming cultural and institutional barriers, might appeal to Chinese investors.

Turning from the subsidiaries to the investors, the parent companies in China, we have information about their type of ownership, company size, and whether the investor had other foreign subsidiaries prior to investing in Europe.

Where ownership of the parent company is concerned, Chinese SOEs are conventionally believed to be strongly influenced by government priorities and enjoying a high degree of financial security. This has led to media attention and apprehensions in European host countries with respect to implications for the local economy and politics. The data shows that in contrast to the attention devoted to them in the media, only 33 percent of Chinese direct investments in Europe were made by state-owned companies. Of course this number does not take the size of the investments into account and in terms of investment size, state-owned companies will dominate.

With regards to the size of the investors, the monopolistic advantage theory implies that companies that are already dominant in the home market are more likely to consider outward FDI than their competitors. This dominance usually comes along with large company size. Large companies tend to have access to more resources, both financial and human, to back their internationalization activities and might therefore be more likely to engage in FDI. In addition to the predicted tendency to invest abroad, the advantages associated with company size can also influence how companies decide to invest abroad. However, in contrast to these assumptions, only 43 percent of the Chinese subsidiaries in the sample are owned by a large or very large investor. This is a surprisingly low share, which is not fully accounted for by the fact that numerically there are more small and midsize multinational companies than there are large.

Finally, whether or not the investor has engaged in other direct foreign investment projects prior to Europe pertains to company learning processes. Stages theory, e.g. the Uppsala model, alleges that internationalization occurs gradually and step by step while new theories developed for EMNEs do not claim such path dependency. The only variable reflecting international experience that could easily be quantified was whether investors had already had foreign subsidiaries elsewhere before investing in Europe. This is thus the only measure of learning included in the quantitative analysis, but one should keep in mind that companies might have gathered international experience in ways not included in the model, e.g. through joint ventures with European companies in China. The share of investors that already possessed foreign subsidiaries outside of Europe is only 35 percent, which means that contrary to the geographical dimension of the Uppsala model, most Chinese investors in Europe do not have experience with managing foreign operations closer to home but have leapt directly to Europe.

Two types of Chinese investments: a cluster analysis

As informative as univariate analysis may be it does not disclose covariations between variables; a number of systematic relationships may exist between characteristics of subsidiaries and investors. Such relationships can potentially reduce the variance in the population into a limited number of distinct investment types. For example, it could be the case that state-owned companies, with their bank and government backing, tend to undertake the largest investments and the most knowledge-intensive investments and that these tend to be located in Western Europe, or that smaller and private companies have a higher propensity to engage in joint ventures due to more limited resources.

In the identification of distinct types, bivariate variable correlations have their limits. For example, the fact that 62 percent of all acquisitions were made by state-owned companies only becomes significant when considering the investor characteristic that only a third of all investors are state-owned. Also, connections between more than two variables at a time are difficult to evaluate on the basis of only correlations. In order to identify distinct groups of cases that tend to have a number of characteristics in common, we applied a hierarchical agglomerative cluster analysis.

The following investment characteristics were included in the cluster analysis: greenfield investment (*Greenfield*), acquisition (*Acquisition*), wholly-owned subsidiary (*WO*), 'services' subsidiary function (*Services*), 'R&D or manufacturing' subsidiary function (*RDManufacturing*), small subsidiary size (*SubSmall*), large subsidiary size (*SubLarge*), state-owned investor (*SOE*), privately-owned investor (*Private*), foreign subsidiaries before Europe (*ForeignSub*), no foreign subsidiaries before Europe (*NoForeignSub*), large or very large investor (*InvLarge*), small or medium-sized investor (*InvSmall*).

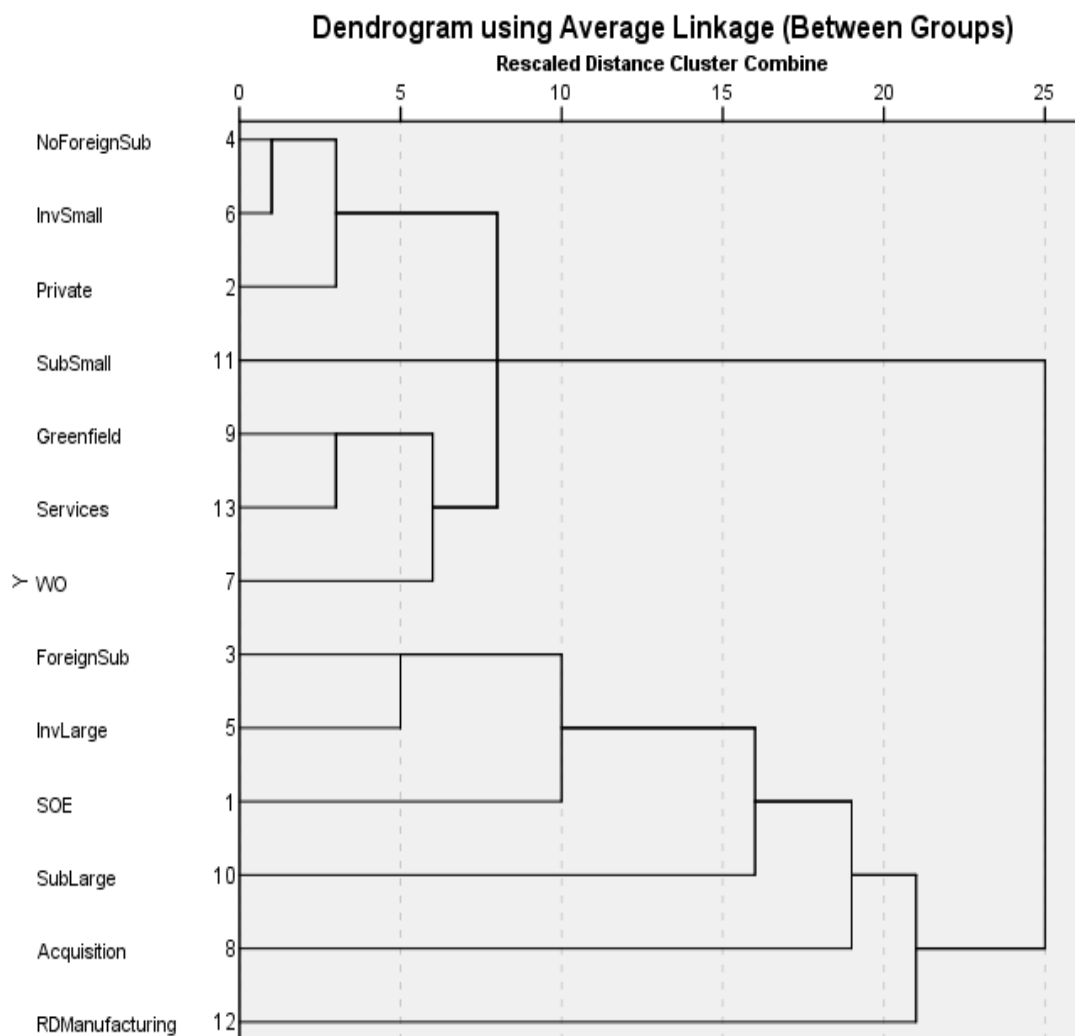
For the variable 'Function', the values 'R&D' and 'Manufacturing' were combined, so that only two possible outcomes remain. While this entails some loss of information, the grouping is justifiable, because R&D and manufacturing tend to be carried out in close cooperation and one often to a certain extent encompasses the other. In a preliminary analysis, a variable for whether or not the subsidiary was established as a joint venture was identified as an outlier and excluded from subsequent investigation. The frequencies of the individual variable values were given in the previous section

Figure 1 shows a dendrogram of the results of the cluster analysis, i.e. a graphical representation of the groupings that are formed during the clustering process. It lists all individual variables on the left side of the graph. From here, the variables are combined according to their similarity, i.e. according to the relative likelihood that they both are present in a certain FDI project. The closer to the left hand side of the diagram two variables or clusters are combined, the more closely are they connected to each other.

The cluster analysis clearly identifies two distinct clusters and, i.e. distinct types of subsidiaries, which will be described below. They will hereafter be referred to as investment Type I and investment Type II.

Dividing the data into separate time periods of two or four years yields mainly the same results. While they in a few cases differ with respect to at which stage and at which distance the variables are connected, the same two distinct groups are formed for every time period. The characteristics of Chinese FDI in Europe have thus seen little change over the time period investigated.

Figure 1 Dendrogram of the cluster analysis



Identification of investment Type I

In the first cluster, the investor characteristics small size (including small and medium-sized companies), absence of subsidiaries outside of Europe and private ownership, are very close to each other. The subsidiaries of investors with these characteristics typically fulfill a service function and are established as greenfield operations. They also tend to be wholly owned and small in size. The descriptive section shows that such subsidiaries represent a large share of Chinese FDI in Europe.

During the supplementary data collection, it became apparent that a large part of this type of subsidiaries engage in wholesale operations connected to small manufacturers' or trading companies' export activities to Europe. This cluster is thus consistent with the establishment of sales- and marketing offices in what for many Chinese companies is the most important export market. Consequently, they are likely to have gathered experience through exporting before engaging in FDI, in line with the Uppsala model with respect to gradual entry of foreign markets. The decision to take control over parts of the value chain located in Europe is likely to stem from the belief that such functions can be carried out more efficiently within the company than by an external partner, in congruence with internalization theory. The purpose could be to ensure a high quality customer service or to improve the absorption of local market knowledge into the company.

Investors of this type are unlikely to be dominant in their home market or to be in possession of strong company-specific advantages that can be exploited abroad. Instead, they are likely to benefit from country-specific cost advantages that allow them to export cheap products to Europe. Instead of developed-country companies moving their manufacturing to low-cost China, Chinese companies themselves are now in control of such manufacturing processes. The products exported are almost exclusively mature and low-tech products (e.g. gift bags or textiles), implying that R&D and brand recognition are less important than low manufacturing costs. In this context, it may be reasonable that control over such products moves towards the developing country in which production is located.

Identification of investment Type II

The second cluster comprises of large investing parent companies, which often already possess foreign subsidiaries at the time of their first investment in Europe. This is intuitively reasonable, since large companies are likely to have more subsidiaries. The last investor characteristic in this cluster is state-ownership and these three variables are those that are most closely connected in this cluster.

Figure 1 also shows that these investments to a higher degree comprise of large subsidiaries, which have been acquired rather than established as greenfield investments, and are active in manufacturing and R&D. This is consistent with large investors with the necessary financial wherewithal to buy attractive assets in Europe.

The figure also shows that the variables join this cluster individually and at an increasingly high distance. This illustrates that these attributes are distributed more diversely across all observations, and investment patterns concerning them are therefore not as clear-cut. Deductions concerning investment motives are thus difficult to make based solely on the cluster analysis. What is obvious though is that large and state-owned companies, which in many cases are the same, are indeed willing or able to commit more resources in Europe than smaller ones.

Host country drivers of Chinese investments: a regression analysis

Which host country factors are important for attracting Chinese FDI into European countries? In the following we will extract from the extant literature four factors that are likely to motivate and condition Chinese FDI inflows, namely search for markets, search for strategic assets, the liability of foreignness and the institutional environment faced by the investors. With each of these factors we associate specific hypotheses, which can subsequently be tested on the basis of the database of Chinese subsidiaries.

Market opportunities

The OLI paradigm suggests that one of the reasons why companies engage in FDI activities is to take advantage of market opportunities abroad. Numerous empirical studies have indeed shown that market size proxied by host country GDP as well as per capita GDP and GDP growth is highly significant for inward FDI flows in general (e.g. Billington, 1999; Dees, 1998; Shatz & Venables, 2000; Loree & Guisinger, 1995). Also for Chinese investment in specific, existing literature provides evidence for the importance of host-country market size. Buckley et al. (2007) as well as Cheung and Suny (2009) find a positive correlation between global Chinese FDI on the one hand and total market size, income level as well as economic growth on the other hand.

As a consequence of the EU common market, by entering one country a company can reach the entire European Union and accordingly, many Chinese MNEs have developed and implemented pan-European strategies (Zhang & Filippov, 2009). However, significant obstacles persist to approaching the European Union as a homogenous market due to differing standards, regulations, culture and language (Buckley et al., 2008). Being close to the customers of a specific country can help minimize difficulties arising out of

varying country characteristics, as well as be advantageous for market research, marketing, customer service and reduction of transportation costs. It can thus be assumed that, all else equal, Chinese companies would choose to invest directly in the country in which they wish to create or improve revenue. The market opportunities present in individual countries can therefore be a relevant factor for the location of FDI within Europe.

The expected influence of markets opportunities in European host countries upon Chinese incoming direct investments is represented in the following hypotheses:

H1a: Host country GDP is positively related to the number of Chinese subsidiaries.

H1b: Host country GDP growth is positively related to the number of Chinese subsidiaries.

H1c: GDP per capita is positively related to the number of Chinese subsidiaries.

One purpose of FDI is to facilitate or strengthen export activities. The European Union is China's largest trading partner, which in itself indicates that good market opportunities exist and that many companies may be motivated to extend or improve their activities. Besides the benefits that arise from close proximity to customers, Chinese exporters to Europe are frequently faced with trade barriers such as quantitative restrictions and have been subject to a number of anti-dumping cases (Deng, 2004). Locating parts of the value chain within Europe through FDI can also help overcome such barriers.

FDI intended to support trade or to overcome trade barriers is likely to be located predominantly in countries that already import a substantial amount of Chinese products. Correspondingly, Ramasamy et al. (2010), find that China's export volume has a positive influence on the location of China's FDI on a global scale. From this, we derive the last hypothesis related to market opportunities:

H1d: Imports from China to the host country are positively related to the number of Chinese subsidiaries.

Strategic assets

Both Dunning's OLI paradigm and more recent FDI theories emphasize strategic assets embedded in the host country location such as technologies, knowledge, brands and commercial capabilities as an important driver for FDI. It has been argued that the acquisition of such assets may be of special interest to companies from emerging markets lacking such assets and unable to competitively develop them organically.

Learning from developed country companies in order to strengthen competitiveness is not a new notion to Chinese firms. Since the opening up of the Chinese economy, the forging of joint ventures between local Chinese companies and foreign investors was partly motivated by the possibility for transfer of knowledge and technology. However, inward investors prefer to keep essential expertise to themselves for intellectual property reasons (Zhao et al., 2010). Seen from a Chinese point of view, this strategy thus has its limits and does not fully support the desire among both companies and Chinese authorities to quickly move beyond cost-based competition and into higher-value added markets (Filippov & Saebi, 2008). The acquisition of strategic assets in developed host countries, and hence control through ownership, represents a way to speed up the transfer of knowledge and technology.

It has been argued that China's increasing interest in the acquisition of new technologies from Europe can be regarded as the preparation for an eventual shift in the competitive strategy from cost leadership to product differentiation as espoused by Michael Porter (Shi, Hay & Milelli, 2010). Yet, while Chinese companies increasingly possess the financial wherewithal and the capabilities to carry through these acquisitions, the population of locally trained designers and engineers in China appears not yet sufficiently developed to support fully the transfer of the acquired strategic assets from the host location to locations

in China (Minin, Zhang & Gammeltoft, 2010). Often, of course, such transfer may not even be intended but the strategic assets kept operating and nurtured in their original location.

A number studies have been conducted analyzing the significance of the seeking of strategic assets in Chinese FDI activities globally. They differ in terms of the indicators they use for the availability in a specific country of strategic assets (e.g. expertise, capabilities, technology and brands). Based on the observation that strategic assets are outcomes of innovation and R&D, we choose R&D expenditure as proxy for their presence and the associated hypothesis is:

H2: R&D expenditure as a percentage of GDP is positively related to the number of Chinese subsidiaries.

In a first specification of the model, patents granted to residents were also used as an additional indicator for presence of strategic assets. However, since there was a high colinearity between this variable and the other variables in the model, it was not included.

Reducing liability of foreignness

Liability of foreignness is recognized by a host of international business theories as significantly shaping internationalization processes. The gravity approach to international trade (Tinbergen, 1962), stages models of foreign investment (Johanson & Vahlne, 1977), and latecomer theory (Dore, 1973; Mathews, 2002) are prominent cases in point. Given the large distance between China and Europe in terms of geography, culture, language and institutions, the liabilities of foreignness faced by Chinese investors can be assumed to be significant no matter which country is chosen for investment. However, a number of factors have the potential to facilitate the operation of Chinese companies, mainly by making it easier for companies to obtain information and communicate with local stakeholders. To determine how important such factors are in the location decision of Chinese investors, they will be included in the analysis.

The latecomer approach advocates the importance of relationships and networks for developing country companies investing in developed economies. Furthermore, a number of researchers have argued that ethnic and family networks constitute firm-specific advantages for Chinese companies, as they reduce business risk, transaction costs and thereby the liabilities of foreignness (e.g. Braeutigam, 2003; Erdener & Shapiro, 2005). Several studies with a global scope (Ramasamy et al., 2010; Buckley et al., 2007; Deng, 2004) have confirmed that the size of the Chinese population in the host country has a positive effect on Chinese FDI. The following hypothesis is thus derived:

H3a: The size of the Chinese population in the host country relative to total population is positively related to the number of Chinese subsidiaries.

The presence of other Chinese companies that have already invested in a certain host country may also help Chinese companies to bridge the cultural and institutional gap with the host country. Already established companies may provide networks and especially information about the local market, from which new investors can benefit. Cheung and Suny (2009) support this assumption with their finding that Chinese investments cluster among developed economies that already have a large share of Chinese FDI. Apart from reducing liabilities of foreignness, other factors might also contribute to this clustering. For instance, investors might simply share the same FDI motives and hence chose the same location for their subsidiary or they might follow other companies in their industry (Knickerbocker, 1973).

H3b: Already existing Chinese FDI stock is positively related to the number of Chinese subsidiaries.

Another aspect that may decrease the liability of foreignness faced by Chinese investors is English proficiency in the host country. While the focus on foreign language skills in China has increased significantly in the past decade, language skills other than English are still rare. The language barrier can therefore prove to be an obstacle to Chinese business activities in Europe. Liu and Tian's survey (2008) of

Chinese companies stresses this point by finding that cultural and language proximity was the third most relevant reasons for investing in the UK. This leads to another hypothesis:

H3c: English proficiency in the host country is positively related to the number of Chinese subsidiaries.

Host country institutions

Several studies argue that contrary to what is conventionally the case for foreign investors, Chinese companies are often attracted to weak institutions and high levels of risk in the host country (Deng, 2004; Buckley et al., 2007; Cheung & Suny, 2009; Ramasamy et al., 2010). There are likely to be a number of grounds for this observation: in some cases, the most accessible and lucrative investment projects are already saturated and Chinese investors as newcomers are left with higher-risk niche investments. Some Chinese companies are less subject to demands of accountability and transparency from public investors than their Western counterparts are. Some large Chinese companies, particularly state owned, have higher risk tolerance with government financial backing. Finally, it has been argued that Chinese companies may be more astute in operating in institutionally weak settings with informal business procedures due to experiences from their home environment (He & Lyles, 2008).

The influence of risk is interesting to analyze in a European context as some of the new member states to the EU are, like China, still transitioning from a planned to a market economy and have higher levels of institutional risk than older member states. If Chinese companies were more attracted to locations with a similar institutional environment to the one they are used to at home, one would expect Chinese companies to be attracted to Eastern European countries for their investment, everything else equal.

However, scrutinizing the argument of Chinese companies' relative attraction to high-risk environments, it is particularly associated with natural resource-related investments, and large natural resource endowments are often found in high-risk developing countries. Hence, Chinese investors might not invest in host countries because of weak institutions, but in spite of them. Finally, remembering that subsidiaries active in the natural resources sector or related activities are excluded from this study, the last hypothesis to be tested in the regression analysis is therefore:

H4: Institutional risk has no significant effect on the number of Chinese subsidiaries.

Model specification

The hypotheses put forward, the nominal and operational variables and the expected relationships with the number of Chinese subsidiaries are summarized in the table below. The table also indicates the code of each variable as used in the regression model, the theoretical justification for the inclusion in the model, and the data source.

Table 6: Overview over hypotheses, variables and sources used in the regression analysis

| # | Nominal variable | Operational variable | Code | Theoretical justification | Exp. relationship | Data Source |
|----|--|---|-------|---|-------------------|--|
| 1a | Absolute host market size | GDP | GDP | Market-seeking (OLI) | + | World Bank Development Indicators: GDP (constant 2000 US\$) |
| 1b | Economic growth | GDP growth | GDPG | Market-seeking (OLI) | + | World Bank Development Indicators: GDP growth (annual, %) |
| 1c | Income level | GDP per capita | GDPPC | Market-seeking (OLI) | + | World Bank Development Indicators: GDP per capita (constant 200 US |
| 1d | Trade substitution | Imports from China | IMP | Market-seeking (OLI), Uppsala model | + | China Statistical Yearbook (2000, 2002, 2004, 2006, 2008, 2010, 2011) |
| 2 | Innovation and high technology | R&D expenditures | RDE | Strategic-asset seeking (OLI), Latecomer theory, Springboard view | + | World Bank Development Indicators: Research & Development expenditure (% of GDP) |
| 3a | Cultural proximity and ethnic networks | Population of Chinese citizens | CCP | Gravity Approach, Latecomer theory | + | Eurostat: Population by sex, age group and citizenship divided by total population, Statistisches Bundesamt Schweiz (2012) |
| 3b | Knowledge about host market | Chinese FDI stock | FDIS | Gravity Approach, Latecomer theory | + | Statistical Bulletin of China's Outward Foreign Direct Investment |
| 3c | English proficiency | Percentage of population able to have a conversation in English | ENG | Gravity Approach, Latecomer theory | + | Eurobarometer (2005), Crystal (2004) |
| 4 | Institutional stability | Average of six governance indicators | RISK | Institutional theory | 0 | World Bank Worldwide Governance Indicators |

Market opportunities, availability of strategic assets, liability of foreignness and institutional stability are operationalized in the following manner: for market opportunities, as mentioned earlier, GDP is used to estimate total market size, while GDP per capita approximates income level and GDP growth is an indicator of future market opportunities. These values were retrieved from the World Bank Development Indicators. Investors are likely to take not only the current year into account, but to monitor the market for a certain time period before the investment actually occurs. Accordingly, the variables used in the regression are the average of the year of the investment and the two previous years. Values for imports from China were retrieved from China Statistical Yearbook and corresponding averages computed. This was also done to adjust for the fact that a single successful year for Chinese exports is not likely to be enough to induce a company into direct investment.

Where availability of strategic assets is concerned, R&D expenditures as a percentage of GDP was retrieved from the World Bank Development Indicators to approximate the availability of strategic assets in the host countries. Three-year averages were used in order to correct for possible abnormalities in single years. Patent applications of residents was initially included as an additional indicator but subsequently excluded due to colinearity.

With respect to the liability of foreignness, no up-to-date information about the size of the ethnic Chinese population could be found. Instead, the number of Chinese citizens living in a certain host country is used as a proxy. This number is likely to be smaller than the ethnic Chinese population; however, it should nonetheless estimate the relative distribution of Chinese in Europe reasonably well. Citizens from Hong Kong are also included in the sample since they are almost exclusively of Chinese ethnicity. It should be

noted that the number of Chinese citizens in the host country is likely to be influenced by the number of existing Chinese companies. Data on the Chinese FDI stock was retrieved from the Statistical Bulletin of China's Outward Foreign Direct Investment, which provides data from 2003 to 2010. Hardly any comparable data for the English proficiency of the population of European countries is available. The most reliable source is a special Eurobarometer report from 2005 (European Commission, 2005). This report does not measure changes over time, but since pronounced changes in the ability to understand English are likely to occur slowly, the values were used for the entire time period. The UK, Ireland and Switzerland were not included in the Eurobarometer, so for these countries information on the population share that is fluent in English was retrieved from 'The Cambridge encyclopedia of the English language' (Crystal, 2004).

Finally, in terms of the institutional stability, the quality of the institutional environment is measured by the average of the World Bank's Worldwide Governance Indicators, which comprise of: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality, rule of law and control of corruption. Higher values correspond to better governance.

When building the model, a combination of backward elimination and forward selection was intended in order to yield the best model, given the available variables (see Christensen, 1997). In other words, beginning with a model containing all variables, the variables with the least significant test statistic should be deleted, but added again later in different combinations until the model with the best fit is found. However, when employing this method, the results showed no material improvement. Moreover, variables that were not found to be significant in one region or time period were so in another.

Some multicollinearity between the independent variables was expected, so for each individual regression, these correlations were calculated. Through this process it was discovered that the number of patent applications by residents was highly correlated (<-0.8) with at least one other variable in four of the seven datasets. This variable was therefore excluded from the regression analysis. For the six regressions including Western European host countries, no variables thereafter had a higher value than 0.8. In the dataset including only Eastern European countries, several high correlations (>0.8) still persisted, but the exclusion of any of the variables in question did not change the variables that were found to be significant in the regression.

Therefore, all regressions conform to the following model:

$$\begin{aligned} \log(\lambda(SUBS_{Country})) & \quad \text{(Equation 1)} \\ &= a + b_1GDP + b_2GDPG + b_3GDPPC + b_4IMP + b_6RDE + b_7CCP \\ &+ b_8FDIS + b_9ENG + b_{10}RISK \end{aligned}$$

Results of the regression analysis

For all seven regressions conducted, the likelihood ratio Chi Square has a significance level of 0.000 for all regressions, which means that at least one of the model's regression coefficients is not equal to zero and the chosen model is appropriate. An overview over the variables found to be significant in the regression analyses at a significance level of at least 0.1 is provided in Table 7 along with the specific level of significance and direction of their influence.

Table 7: Significant host country factors

| | All countries | | | Western European countries | | | New member states |
|------------------------------|---------------|-----------|-----------|----------------------------|-----------|-----------|-------------------|
| Variables | All years | 2003-2006 | 2007-2010 | All years | 2003-2006 | 2007-2010 | All years |
| GDP (H1a) | + 0.000 | + 0.000 | | + 0.000 | + 0.000 | | + 0.007 |
| GDP growth (H1b) | | | + 0.042 | | | | |
| GDP per capita (H1c) | | | | - 0.042 | | | |
| Imports from China (H1d) | + 0.000 | + 0.000 | + 0.000 | + 0.000 | + 0.000 | + 0.000 | + 0.050 |
| R&D expenditures (H2) | | | | | | | + 0.009 |
| Chinese population (H3a) | | | | | | | |
| Chinese FDI stock (H3b) | - 0.005 | - 0.000 | | - 0.013 | - 0.000 | | |
| English proficiency (H3c) | | | | | | | |
| institutional stability (H4) | | | | + 0.057 | + 0.041 | + 0.070 | - 0.018 |

The regression analysis shows that GDP has a highly significant positive influence on Chinese FDI in Europe overall and in four sub-sample regression runs. H1a is thus confirmed. However, in the time period 2007-2010, GDP is not a significant factor. A reasonable explanation might be that when the financial crisis weakened the European economy, economic growth became a more important indicator of continued market opportunities, which is in fact significant only during this time period in Western European countries. H1b is consequently conditionally confirmed, as GDP growth seems to be taken into consideration in Chinese investment decisions in times of economic uncertainty.

GDP per capita is not, as otherwise postulated by H1c, positively related to the number of Chinese subsidiaries. Indeed, in Western European countries, the relationship is the opposite. One explanation could be that the four countries that had the highest GDP per capita in almost all years are Norway, Switzerland, Denmark and Sweden. Due to the small absolute market size of these countries the relationship between GDP and GDP per capita becomes negative relative to other countries. As mentioned, host country GDP is shown to be an important factor for the type of Chinese investment analyzed in this study and the found negative relationship may simply result from the fact that GDP is more important than GDP per capita: when GDP is already taken into account, countries with a high GDP per capita have fewer investments since these countries also tend to be smaller. In addition, one should keep in mind that a large part of the GDP in Norway and Switzerland is generated by the financial or natural resources sector, which were excluded from the analysis. Cheung and Suny (2009) find the same negative relationship between GDP per capita and Chinese investment in their analysis of Chinese FDI into developed countries but propose another explanation: they argue that much Chinese FDI concerns trade and that the products sold tend to be in the lower-end of the market. These in turn are geared towards low-income customers and might simply not appeal to consumers in countries with high per capita incomes. Both explanations

probably contribute to some extent to the found negative relationship between GDP per capita and Chinese FDI.

Imports from China are significantly related to Chinese FDI in all regressions, making it the strongest factor influencing FDI from China. This suggests that much Chinese FDI has the purpose of supporting or substituting trade and to get closer to customers. H1d is thus accepted. It is likely that companies investing in Europe are already exporting to Europe before engaging in trade-substituting FDI.

No significant relationship was found between R&D expenditures in the analyses of all countries and of Western European economies; H2 is thus rejected for these locations. The finding that asset-seeking is overall of little importance contradicts other studies on Chinese FDI in developed countries. This may be a consequence of the use of only a single measure and a very aggregate one to approximate the availability of strategic assets. Another notable difference, though, is that other researchers used investment volume as the dependent variable in their analyses. As the cluster analysis shows, investment in R&D and manufacturing as well as acquisitions (which are most likely to have the purpose of obtaining new technology) are often large in size. They thus carry relatively less weight in this study, based on count rather than value, than in other ones.

Unexpectedly, R&D expenditures are positively related to Chinese FDI in Eastern European host countries. This seems contradictory, since the countries of Western Europe are generally endowed with more highly developed technology and know-how than the new member states of the EU and accordingly, as we saw earlier in the descriptive section, the share of R&D-related subsidiaries are lower in Eastern Europe than in Western Europe. Since R&D expenditures in Eastern Europe are highly correlated with GDP, it is more likely an indicator not so much of the presence of advanced technology, but instead of a relatively well-developed economy and a qualified work force. Such factors might indeed be a prerequisite for Chinese investors for investing in the relatively less-developed Eastern European economies.

The analysis shows that host country factors likely to reduce the liability of foreignness, namely Chinese population, English proficiency and Chinese FDI stock do not have a significant positive influence on Chinese FDI in Europe. H3a, H3b and H3c are rejected accordingly. Indeed, existing Chinese FDI stock (H3b) is negatively related to the number of subsidiaries, when including all countries or only Western Europe in all years and the time period from 2003 to 2006. One reason could be that the reasons for investment and thus the preferred locations of FDI changed just before this period. This would indicate that private companies, which began internationalizing after the implementation of the 'Go Global' policy, are indeed attracted to other host country factors than large SOEs. Since data on Chinese FDI is not available for the years prior to 2003, no conclusions can be drawn on this possibility. Another, more material explanation is that the countries in which the largest investments take place are not necessarily those with most Chinese subsidiaries. For instance, measured by the number of subsidiaries, the Netherlands hold the second rank of all European countries. However, only two percent of these subsidiaries are very large in size, as opposed to an average 36 percent among all subsidiaries in Europe.

Hypothesis 4 predicted that institutional risk does not influence Chinese FDI in a purely European context. When taking all countries into account, this is indeed the case. But interestingly, there is an obvious locational difference. In Western European countries, there is a positive influence between institutional stability in all time periods at least at the 0.1 level. However, the effect is opposite in Eastern European host countries. H4 is thus accepted in general, but rejected for both Western and Eastern European countries, when considered separately.

This finding supports studies on Chinese FDI on a global scale and substantiates the argument raised in the literature that, at least in developing and emerging economies, Chinese companies seem to be attracted by an institutional environment familiar to their own. However, the negative relationship with institutional

stability might in fact be an indicator of other host country factors not included in the model. For instance, competition in such markets might be lower, because companies from developed countries are less inclined to enter the market, or the governments of such countries grant beneficial conditions for market entry in order to attract foreign investment.

In the descriptive analysis, we found that the subsidiaries investing in Eastern Europe have a different composition regarding function than those located in Western Europe. In combination with the finding that different host country factors seem to attract Chinese investors in the new member states of the EU, this indicates the existence of a third group of Chinese investments (Type III) characterized by its own motives for engaging in FDI, augmenting the two types found in the cluster analysis.

Summary

The results of the regression analysis show that Chinese FDI is most closely correlated with host country factors that represent possibilities for market exploitation. Thus, overall, seeking of market opportunities presents itself as the most important motivation for Chinese FDI in Europe.

The availability of strategic assets, the significance of which is predicted by extant and newer theories of FDI alike, was only found to be significant for Eastern European host countries, and even there the proxy used might rather be an indication of the existence of a relatively well-developed economy and a skilled workforce. The contradictory results found in this analysis vis-à-vis prior studies on Chinese FDI are likely to result from the fact that all subsidiaries received the same weight in the analysis, while most prior analyses have used FDI value as the dependent variable.

Factors that can decrease the liability of foreignness for Chinese investors were not found to have a significant positive influence on Chinese FDI, thus contradicting assumptions based on extant FDI theories.

A regional difference was identified with respect to the importance of institutional stability. While institutional stability, in accordance with the main argument of institutional theory, positively influences FDI in Western European countries, the opposite is true for Eastern European host countries.

Finally, combining the results of the descriptive and the regression analysis it seems that investors in Eastern Europe constitute their own distinctive group in terms of FDI motives, complementing the two groups found earlier in the cluster analysis. Relative to Western Europe, they are more active in manufacturing, construction and telecommunication services and less in trade-supporting functions and they more often enter through joint ventures.

Applicability of extant and new FDI theories

The three types of investments identified in the analysis, Types I, II and III, share the trait that internationalization does not proceed in a path dependent process with respect to either geographical or cultural distance. In other words, companies do not tend to have much prior experience in operating foreign subsidiaries but are nonetheless not restrained by large liabilities of foreignness. Instead, they aim straight for Europe for their internationalization purposes. The gravity approach and the distance-dimension of the Uppsala model are thus not applicable to Chinese FDI in Europe: the FDI articulation of the gravity approach suggests that the closer two countries are with respect to geography, culture and economic development, the higher are the FDI flows between these them (Tinbergen, 1962). According to the Uppsala model (Johanson & Vahlne (1977)), companies internationalize gradually in an experiential process to progressively more geographically and culturally distant markets and utilizing modes with increasing market commitment. At the same time, however, the gradualist argument of the Uppsala model applies well to Chinese investors in Europe as they tend to proceed stepwise in terms of resource

commitment, either through prior exports or progressively larger FDI projects. The conclusion on the applicability of the Uppsala model is thus ambiguous.

Type I investments, made by small Chinese companies to improve their export activities, can best be explained by the more recent and extended version of Dunning's OLI paradigm. This extended version brings the framework better in line with more recent developments in the global economy by integrating both home and host country institutional factors as determinants of ownership-, location- and internalization advantages (Dunning & Lundan 2008). In this framework, home country-specific cost advantages are part of the ownership advantages of Chinese investors, as local European companies cannot easily copy them without relocating their own manufacturing to developing countries. The framework applies well to Type I investments, which can be understood as market-seeking since the internalization of downstream activities has the objective and potential to improve and expand markets.

Type II investments can be explained by theories developed more recently to account specifically for outward investments from emerging markets: the government steward logic, latecomer theory and the springboard view. The government steward logic extends institutional theory by observing that in developing countries, government institutions often have a strong influence on the activities of domestic companies through administrative control, economic policies and close links between business and government (Deng, 2004). Company strategy thus tends to follow the country's political agenda. According to latecomer theory, firms from developing countries can seek to overcome their competitive disadvantages and lack of ownership assets through a process of linking, leveraging and learning: by linking up to stronger firms internationally, latecomer firms can leverage these linkages to overcome their resource barriers and gradually learn to build up their capabilities (Mathews, 2002). The springboard view shares many aspects with latecomer theory and focuses on systematic internationalization as a springboard to overcome disadvantages but emphasizes that the acquisition of strategic resources occurs recursively and has a long-term perspective (Luo & Tung, 2007).

The government steward logic and latecomer theory accurately describe the background, characteristics and behavior of Type II investors. The springboard view offers a valuable addition by clarifying the distinction between short- and long-term objectives of the acquired assets and by pointing out the recursive nature of FDI. However, the OLI paradigm continues to hold merit as well. Accordingly, investors can be characterized as engaging in asset-seeking FDI with the ultimate objective of being able to enter new markets, and the internalization of European knowledge centers facilitates the transfer of know-how and technology. While the newer theories offer a more detailed description of Chinese FDI with the purpose of acquiring strategic assets, the OLI paradigm offers a more structured tool for analysis. Under these circumstances both extant and new models have merit, and which is more appropriate depends on the specific context and application.

Type III investments can also be explained most appropriately by the extended version of Dunning's OLI paradigm. While diverse in their characteristics, they all engage in FDI to access markets where the specific choice of location is based on efficiency-seeking motivations.

Conclusion

The aim of this study has been to determine on the basis of the Orbis database of subsidiaries how Chinese companies engage in FDI in European countries and which host country factors influence their investment behavior.

The number of Chinese direct investments made per year shows a slowly but steadily increasing trend between 2003 and 2010. The most important host countries were Germany, the Netherlands and the UK.

The large majority of investments went to Western European countries (89 percent). The most common subsidiary characteristics of Chinese subsidiaries in Europe are either small or very large size and greenfield entry mode characterized by complete ownership. The importance of joint ventures has decreased since 2004, along with the increasing confidence of Chinese investors.

The majority of Chinese subsidiaries in Europe provide services, while manufacturing and R&D respectively hold the second and third positions. The most common service functions are those, which support Chinese exports, e.g. wholesale and marketing. Industries in which Chinese companies are strong, such as textiles, electronic equipment and appliances, continue to play an important role in the sectoral composition of Chinese FDI in Europe. In recent years, though, investments in new areas such as automobile and new energy have increased. Contrary to the attention they have received in the literature, state-owned investors account for only one third of the total number of Chinese direct investment projects made.

Using a cluster analysis, two quite distinct groups of Chinese investment were identified: the first group (Type I) comprises of small, privately-owned Chinese manufacturers and trading companies that engage in FDI of small volume in order to improve their export performance in European markets. Their subsidiaries are typically small in size, greenfield and wholly owned, typically sales offices. The second investment group (Type II) is less homogenous than the first but typically represents large, state-owned companies that acquire large manufacturing companies, often for technology-seeking purposes. Parent companies in this group tend to be characterized by large size, state ownership and prior experience with managing foreign subsidiaries. Their subsidiaries tend to also be large, often come about through acquisitions and are active in R&D and manufacturing.

A comparison between Chinese subsidiaries in Eastern and Western Europe shows that subsidiaries have region-specific characteristics. In Eastern Europe, manufacturing, construction and telecommunication services are more common than in Western Europe, while fewer subsidiaries are active in trade-supporting functions. Also, more investors choose joint ventures as entry modes. These differences in functions and entry modes indicate that such investments differ from those described by Type I and II. Hence, a third group of Chinese investors (Type III) was identified, the members of which share investment motives that lead them to choose Eastern Europe as the location for their investment. These three types of investments are not exhaustive with respect to all Chinese investments in Europe but represent the most dominant groups.

For the analysis of which host country factors appear to attract Chinese FDI to Europe we used existing theories and literature to determine, which country characteristics would be likely to have an influence and hence should be included in a model of the number of Chinese subsidiaries. The regression analysis was divided into two time periods (2003-2006 vs. 2007-2010) and two different regional locations (Eastern vs. Western Europe). The results provided insights into the motivations behind Chinese investments and their regional and temporal variations.

The strongest relationship found in the regression analysis was between imports from China and Chinese FDI, reflecting trade-supporting FDI. Absolute market size is also of importance, although it seems that market growth becomes more important in times of economic uncertainty. These relationships suggest that much Chinese FDI serves to expand and improve export activities from China into European markets. This is in accordance with the identification of a Type I group of investors, which represents the largest group of Chinese FDI in terms of number of subsidiaries and consequently has a large influence on the results of the regression analysis.

In contrast to prior studies, we found no positive relationship between national R&D expenditures and Chinese FDI in Western European countries as one would have expected for Type II investors. This may be resulting from methodological factors. For example, Type II investors tend to be large in size, which means

that they would have carried larger weight in analyses of investment volumes rather than projects, the former being the basis of most prior studies.

Interestingly, no positive relationship was found with host country factors that can serve to decrease the liabilities of foreignness faced by Chinese investors. Apparently, such aspects are of limited importance as long as Chinese investors otherwise perceive a large potential in locating within a specific country.

Companies that choose to invest in Eastern European countries are indeed attracted by different host country characteristics than those locating in Western Europe. Congruent with literature on Chinese outward FDI globally, in Eastern Europe institutional stability is negatively correlated with FDI, whereas R&D expenditures have a positive influence. As the subsidiaries in Eastern Europe in the database are not characterized by a high level of technology, the latter relationship can be interpreted as an indicator of the existence of a comparatively skilled work force. Similarly, easy entry conditions for foreign investors and low labor standards and costs, which tend to be connected to institutional risk, are likely to underlie the identified relationship with institutional stability.

In terms of the relationships between the findings of this study and major extant theories on FDI, extended versions of the conventional theories of FDI appear to still be the most powerful in explaining Chinese FDI into Europe as a whole. Theories developed more recently to account specifically for outward investments from China and other emerging economies add to the understanding of investments made specifically in the pursuit of strategic assets but they apply less well to investments made for other motives.

Literature

- Backhaus, K., Erichson, B., Plinke, W. & Weiber, R. (2006). *Multivariate Analysemethoden*. (11th edn). Berlin/Heidelberg: Springer.
- Billington, N. (1999). The location of foreign direct investment: An empirical analysis. *Applied Economics*. Vol. 31, pp. 65-76.
- Braeutigam, D. (2003). Close encounters: Chinese business networks as industrial catalysts in Sub-Saharan Africa. *African Affairs*. Vol. 102, No. 408, pp. 447-467.
- Buckley et al. (2007). The determinants of Chinese outward direct investment. *Journal of International Business Studies*. Vol. 38, pp. 499-518.
- Cheung, Y.W. & Suny, X.Q. (2009). Empirics of China's outward direct investment. *Pacific Economic Review*. Vol.14, No. 3, pp. 312-341.
- Christensen, R. (1997). *Log-linear models and logistic regression*. (2nd edn). New York: Springer.
- Crystal, D. (2004). *The Cambridge encyclopedia of the English language*. (2nd edn). Cambridge: Cambridge University Press.
- Cui, L., & Jiang, F. 2009. *FDI entry mode choice of Chinese firms: A strategic behavior perspective*. Journal of World Business, Vol. 44, No. 4, pp. 434-444.
- Dees, S. (1998). Foreign direct investment in China: determinants and effects. *Economics of Planning*. Vol. 31, pp. 175-194.
- Deng, P. (2004). Outward investment by Chinese MNCs: Motivations and implications. *Business Horizons*. Vol. 47, No. 3, May-June, pp. 8-16.
- Dexter, R., Balfour, F., Einhorn, B., Arndt, M., Shari, M. & Kiley, D. (2004). China's Power Brands. *Business Week*, November 8. <http://www.businessweek.com/stories/2004-11-07/chinas-power-brands>. Accessed January 2015.
- Dore, R. (1973). *British Factory-Japanese Factory: The Origins of National Diversity in Industrial Relations*. Berkeley: University of California Press.
- Dunning, J. H. & Lundan, S. M. (2008). *Multinational enterprises and the global economy*. (2nd edn). Cheltenham: Edward Elgar.
- Erdener, C. & Shapiro, D. M. (2005). The internationalization of Chinese family enterprises and Dunning's eclectic MNE paradigm. *Management and Organization Review*. Vol. 1, No. 3, pp. 411-436.
- European Commission (2005). *Europeans and Languages*. Special Eurobarometer 237-Wave 63.4.
- Filippov, S. & Saebi, T. (2008). Europeanisation strategy of Chinese companies: Its perils and promises. United Nations University, UNU Merit Working Paper Series #2008-055.
- Guthrie, D. (2005). Organizational learning and productivity: State structure and foreign direct investment in the rise of the Chinese corporation. *Management and Organization Review*. Vol. 1, pp. 165-195.
- He, W. & Lyles, M. A. (2008). China's outward foreign direct investment. *Business Horizons*. Vol. 51, pp. 485-491.

- Johanson, J. & Vahlne, J.E. (1977). The internationalization process of the firm – a model of knowledge development and increasing foreign market commitment. *Journal of International Business Studies*. Vol. 8, No. 1 (spring-summer), pp. 23-32.
- Knickerbocker, F.T. (1973). *Oligopolistic Reaction and Multinational Enterprise*. Cambridge, MA: Harvard University Press.
- Liu, L. & Tian, Y. (2008). The internationalization of Chinese enterprises: The analysis of the UK case. *International Journal of Technology and Globalisation*. Vol. 4, No. 1.
- Loree, D. W. & Guisinger, S. (1995). Policy- and non-policy determinants of U.S. equity foreign direct investment. *Journal of Business Studies*. Vol. 26, no. 2, pp.281-299.
- Luo, Y. & Tung, R. L. (2007). International expansion of emerging market enterprises: A springboard perspective. *Journal of International Business Studies*. Vol. 38, No. 4, pp. 481-498.
- Mathews, J. A. (2002). Competitive advantages of the latecomer firm: A resource-based account of industrial catch-up strategies. *Asia Pacific Journal of Management*. Vol. 19, pp. 467-488.
- Minin, A. D., Zhang, J. & Gammeltoft, P. (2010). Chinese foreign direct investment in R&D in Europe: A new model of R&D internationalization? *European Management Journal*, Vol. 30, No. 3, pp. 189-203.
- Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods*. (3rd edn). London: Sage Publications Ltd.
- Ramasamy, B., Yeung, M. & Laforet, S. (2010). China's outward foreign direct investment: Location choice and firm ownership. *Journal of World Business*. Vol. 47, Issue 1, pp. 17-25. DOI: 10.1016/j.jwb.2010.10.016.
- Shatz, H & Venables, A. J. (2000). The geography of international investment. *World Bank Policy Research Paper*, no. 2338.
- Shi, Y., Hay, F., Milelli, C. (2010). *Chinese FDI in Europe: Analysis from individual company data*. Unpublished paper presented at 'Emerging Multinationals': Outward Investment from Emerging and Developing Economies'. Copenhagen, 25-26 Nov. 2010.
- Statistisches Bundesamt Schweiz (2012). *Ständige und nichtständige Wohnbevölkerung nach Staatsangehörigkeit, 1995-2010*. Available at <http://www.bfs.admin.ch/bfs/portal/de/index/themen/01/07/blank/data/01.html> [Accessed 06/12/2012 15:50].
- Tinbergen, J. (1962). *Shaping the World Economy: Suggestions for an International Economic Policy*. New York: Twentieth Century Fund.
- Zhang, Y. & Filippov, S. (2009). Internationalization of Chinese firms in Europe. United Nations University, UNU-Merit Working Paper Series #2009-041.
- Zhao, W., Liu, L. & Zhao, T. (2010). The contribution of outward direct investment to productivity changes within China, 1991-2007. *Journal of International Management*. Vol. 16, pp. 121-130.

Appendix 1

A few choices had to be made concerning the coding of the variables. Company size can be measured by a number of variables, e.g. assets, revenue, or number of employees. For many investors this information was not registered in Orbis. Therefore, Orbis's own classification of company size was used to categorize companies according to their size for both subsidiaries and parent companies. 'Very large companies' are companies which fulfill at least one of the following criteria: operating revenue \geq 100 million EUR (140 million USD); total assets \geq 200 million EUR (280 million USD); employees \geq 1,000; publically listed; companies with ratios operating revenue per employee or total assets per employee below 100 EUR (140 USD) are excluded from this category. 'Large companies' are companies, which are not 'very large' and fulfill at least one of the following: operating revenue \geq 10 million EUR (14 million USD); total assets \geq 20 million EUR (28 million USD); employees \geq 150; companies with ratios operating revenue per employee or total assets per employee below 100 EUR (140 USD) are excluded from this category. 'Medium-sized companies' are companies, which are not 'very large' or 'large' and fulfill one of the following: operating revenue \geq 1 million EUR (1.4 million USD); total assets \geq 2 million EUR (2.8 million USD); employees \geq 15; companies with ratios operating revenue per employee or total assets per employee below 100 EUR (140 USD) are excluded from this category. Finally, 'small companies' are companies not included in another category.

For entry mode, since the objective of making the distinction between wholly-owned subsidiaries and joint ventures is to examine which companies rely on local European partners, companies established by two different Chinese owners were recorded as wholly-owned investments as they are wholly owned by Chinese entities.

Where subsidiary function is concerned, even though the same subsidiary may carry out several different functions, only one function was assigned to each subsidiary in the database. In this assignment, a hierarchy R&D > manufacturing > services was adopted, since the former usually implies the latter. In other words, for Chinese subsidiaries in Europe, if R&D is part of its mandate it will usually also conduct manufacturing, and if manufacturing also services of some kind. Hence, if a subsidiary was listed with several functions, only the 'highest' one was recorded in the database. The same approach was adopted by Shi, Hay and Milelli (2010).

State ownership can be defined in different ways. State-owned companies in China can be divided roughly into three different categories: (1) Companies owned by central government institutions, either directly or through directly-owned subsidiaries. (2) Companies owned by regional or local government authorities, either directly or through wholly-owned subsidiaries. (3) Former state-owned companies that have been listed on the stock market, but in which a government institutions remain the largest shareholder. Many companies that used to be entirely state-owned have recently gone public, yet remain under heavy government influence. Therefore, in this analysis majority ownership by government entities was not regarded necessary to be classified as an SOE. Rather, an investor is regarded to be state-owned (or rather, state-controlled), when government entities are the largest shareholders with at least 25 percent of the shares or an ownership path of at least 25 percent exists.

¹ Third level subsidiaries were only included when a controlling share was present at at least one level of ownership. Since the lowest level of ownership identifiable in Orbis is 25 percent, this level of ownership set the lower limit for minority equity-owned subsidiaries included in the sample.

² Some information essential to the analyses could not be accessed directly through Orbis or turned out to be incorrectly or not at all stored in the database. For instance, ownership data for some companies was incomplete or did not include all levels of ownership, thus not displaying whether the ultimate Chinese owner was privately or government owned. Moreover, in case of restructuring of the subsidiary, neither the date of incorporation nor the stated entry mode was reliable. Orbis also does not always include all levels of ownership, thereby making it impossible to definitively determine if a company is ultimately state owned by solely referring to the extracted data. The same problem appeared with respect to the categorization of the investing company's size, the existence of foreign subsidiaries prior to the investment in Europe and the function of the subsidiary.

³ Acknowledging that much of Chinese outward FDI passes through Hong Kong, though, these companies were investigated with respect to whether they had any ties onwards to firms in mainland China. To name one prominent example, the Lenovo Group Limited is incorporated in Hong Kong, but both the company's origin, headquarter, main manufacturing facilities and largest owner are located in mainland China. The company and its European subsidiaries therefore retained in the sample. If no connection to mainland China could be found, the subsidiaries of parent companies registered in Hong Kong or Taiwan were not included. Chinese subsidiaries active in financial services and the extraction of natural resources as well as the investments made before 2003 were likewise removed from the company list.

⁴ While natural resource endowments have been found by various studies to positively influence Chinese investment decisions on a global scale, the studies also conclude that natural resources do not play any role for Chinese investment in the EU (e.g. Buckley et al., 2007; Cheung & Suny, 2009; Filippov & Saebi, 2008). The list of Chinese subsidiaries in Europe compiled during the data collection process also revealed that only a very small number of Chinese subsidiaries in Norway are active in the extraction of resources.

⁵ There were also a few missing values among the remaining countries. In order to keep the variables in the analyses, their values were estimated: the values of each variable with a missing value for a specific country were depicted in a scatter plot. If a linear trend was apparent, a simple linear regression formula was used to estimate the missing values. In general, values from 1996 to 2010 were used for these regressions when available. An exception was made, though, when the trend of development changed significantly during this period. For instance, if R&D expenditure fell between 1996 and 2000, but increased steadily after 2000, then only the data after 2000 was taken into account when estimating, for example, the value for 2009. In a small number of cases, no trend was apparent in the data. In these cases, a country in which the variable had developed in a similar manner was identified and the missing value calculated based on the relative value in the corresponding country.

⁶ Cyprus (not included in the analysis), Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta (not included in the analysis), Poland, Slovakia and Slovenia.