Measuring Chinese outward foreign direct investment: The case of Chinese firms in EU15
Federico Carril-Caccia

Abstract

Purpose: The present work describes a new firm-level dataset of Chinese outward foreign direct investment (OFDI) in the European Union (EU15). It seeks to access a greater level of detail as well as overcoming some of the limitations that other data sources have.

Design/methodology/approach: The sample of Chinese firms in EU15 is taken from ORBIS. Then, the year and mode of entry, and the ownership characteristics of the investor, are determined by utilizing ORBIS, Zephyr and news. The resulting dataset is compared with other firm level databases that focus on Chinese OFDI (EMENDATA, Rhodium Group dataset and The China Global Investment tracker).

Findings: The database covers the period 1980-2014. It records 2,177 registered firms and 1,815 FDI projects. It provides the mode and year of entrance, characteristics of the multinational that invests abroad and the financial statements from the subsidiary. In addition, it identifies the use of tax heavens as transit countries to invest in Europe. The proposed method leads to a larger sample, a longer period and a greater level of detail compared with the other databases.

Research limitation/implication: The main limitation is that the dataset does not provide the volume of investment.

Practical implications: This new dataset will permit conducting new research on Chinese OFDI. In particular, it offers the possibility of studying the role played by tax heaven countries on Chinese OFDI, the effects of their investment and the determinants of Chinese MNEs economic activity.

Key words: China, database, Europe, FDI, ORBIS

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1. Introduction

During the last decade, Chinese outward foreign direct investment (OFDI) expanded rapidly. China evolved from having a negligible role as capital exporter to becoming the third main investor at the World level from 2012 to 2015 (UNCTAD, 2013, 2014, 2015, 2016). From a policy point of view, it is likely that Chinese OFDI may impact its international relations with other countries and, in consequence, the host government’s policies (Blanchard, 2011; Hanemann & Huotari, 2016). Additionally, in several countries the appearance of this new investor is sometimes being received with distrust by politicians and public opinion, while it is also increasingly pushing national governments to attract this new source of capital (Blanchard, 2011; Globerman & Shapiro, 2009; Hanemann & Huotari, 2015, 2016). At the empirical and theoretical level, a growing strand of research is considering the particularities of emerging countries’ OFDI (see Amal et al., (2013), Guillén & García-Canal (2009) and Jormanainen & Koveshnikov (2012) for review), being the Chinese case the one that received the highest degree of attention.

Research on Chinese OFDI have mainly focused on its determinants and MNEs’ internationalization strategies. When it comes to data sources for conducting it, most have relied on official FDI statistics from UNCTAD or Chinese official statistics from Ministry of Foreign Commerce from China (MOFCOM) or State Administration for Foreign Exchange (SAFE). However, data quality from official statistics have risen concerns from several researches, since they present considerable bias towards tax heaven countries. Alternatively, some works have used commercial databases such as fDi Market for greenfield investments and, Thomson Reuters and ZEPHYR from Bureau van Dijk Electronic Publishing for M&As. Although these data sources may overcome some of the issues from official statistics, they are prone to only record those investment transactions which are publicly disclosed (Blanchard, 2011). From a qualitative perspective, insight on Chinese firms’ internationalization process and motivations have also been brought by case studies and surveys (e.g., Liu & Tian, 2008; Rui & Yip, 2008).

Overall, data availability for conducting research on Chinese OFDI is scarce or unreliable. This issue hampers the capacity of bringing new insight on the subject as well as the reliability of the existing evidence. By recognizing this issue, several alternative firm level datasets have emerged: EMENDATA, Rhodium Group database (RHG) and the China global Investment Tracker (CGIT) from the American Enterprise Institute and The Heritage Foundation. These datasets seek to measure the geographical distribution of Chinese OFDI in a more accurate way, as well its sectorial distribution.

The current work presents an alternative Chinese OFDI database named China-Europe FDI (CEFDI). This new dataset is compared with the existing data sources mentioned above. CEFDI is a firm level database of Chinese investments in the EU15. It provides the year and mode of entry as well as the ownership of the investor, whether it is a State owned (SOE) or a private enterprise. In addition, provides insight on the use of transit countries by Chinese MNEs and the distribution of their economic activity across EU15. Compared to EMENDATA, RHG and CGIT, CEFDI present certain advantages and limitations. Its’ main advantage is that its’ sample is larger and covers a longer period and is less likely to be biased by considering only publicly disclosed investments. Moreover, it provides insight on the use of transit countries by Chinese MNEs. Its main disadvantage is that it does not include information regarding the volume of investment of each transaction.
The present work continues as follows. Section II provides a brief description of FDI and MNEs activity measurement and on the existing data sources to study Chinese OFDI. Section III gives a detailed description on how CEFDI was constructed. Section IV illustrates the characteristics of Chinese OFDI in EU15. In Section V CEFDI is compared with other sources and its limitations and possible extensions are valued. Finally, Section VI concludes.

2. FDI measurement: Overview

Issues on measurement of FDI and MNEs activity

FDI is usually considered from two different perspectives. One is concerned with its flows and stock, and its impact on balance of payment. The other one focuses its attention on firms. Particularly, it studies MNEs activity, internationalization strategy and effects on home and host countries (Lipsey, 2006). Ideally, FDI flows and stock would be used for the first one, and firm level data would be used for the second one (Navaretti et al., 2004). Being for the latter particularly relevant the value of MNEs’ international production or value added of their foreign subsidiaries (Cantwell, 1992). Due to lack of data availability, FDI flows and stocks have been extensively used for the second one too. These statistics have a wider and longer coverage, and can be accessed freely. The literature has recognized several of their limitations.

FDI flows/stock appear to not really measure properly the MNEs’ economic activity or determinants of investment, and in consequence restricts the scope of research that can be done with them. The first issue arises on how well does FDI statistics directly represent the economic activity of MNEs. On this, Lipsey (2001) shows that for the case of USA FDI statistics are poorly related to the distribution of MNEs’ production. Then, using aggregated statistics may lead to wrong conclusions. For instance, Alfaro & Charlton (2009) show that the importance of vertical investment is much more significant that have been traditionally considered. This conclusion has been reached for the case of USA’s MNEs by using firm level data at the four-digit industrial disaggregation. As the authors argue, the literature by using more aggregate sectorial statistics have been miss classifying a large share of FDI as horizontal. In fact, they find that vertical investments represent a higher share of employment and number of subsidiaries, even among developed countries. Additionally, they find that 91% of the vertical FDI subsidiaries are located in high income countries. Moreover, as pointed by Cantwell (1992), MNEs have other ways of financing their economic activity which are usually not considered by FDI aggregate statistics. In this line, Beugelsdijk et al. (2010) adds that FDI aggregate statistics may over and under-estimate the economic activity performed by MNEs. On one hand, authors point that not always FDI entails value added activities by MNEs, particularly when it flows towards tax heaven countries. On the other hand, FDI might be under-estimated as other factors, such as labor productivity, which enhance MNEs’ value added are not captured by FDI statistics. They present evidence showing that these mismatches are not random, but depend on host countries’ characteristics. Moreover, authors suggest that the potential bias might be larger when investor countries with less developed financial markets are considered, since MNEs from these countries might depend on a larger extend on raising capital outside their home country. This aspect is particular relevant for Chinese OFDI.

Another major constraint of FDI statistics is brought by tax heaven countries that serve as transit countries. FDI statistics gather flows of investment from one country to its immediate destination. However, when these flows are towards tax heaven countries
usually have different final destination. The significant distortion that this issue represents on the geographical and sectorial distribution of FDI has been widely highlighted by the literature (Bertrand, 2005; Beugelsdijk et al., 2010; Cantwell, 1992; Lipsey, 2001, 2006; Whichard, 2005). Moreover, bilateral FDI statistics from UNCTAD sometimes are not complete due to confidentiality reasons. Gaps due to confidentiality become even more common when the degree of aggregation decreases. This issue is also present in OECD and Eurostat statistics (Bertrand, 2005; Hanemann & Huotari, 2015).

Finally, as pointed by Cantwell (1992), the treatment of M&As may cause inaccuracies on aggregate FDI statistics. This issue arises when the affiliates of a foreign firm in a country are taken over by another foreign firm. Similar problematic arises when one M&A affects multiple countries. These aspects are not always treated correctly by official national statistics, leading to geographical biases and discrepancies between FDI flows/stock and MNEs’ international production.

The case of Chinese OFDI
In general, the main data source for the study of Chinese OFDI determinants have been UNCTAD (Gao et al., 2013; Kolstad & Wiig, 2012) or Chinese official statistics from MOFCOM or SAFE (Blomkvist & Drogendijk, 2013; Buckley et al. 2007; Cheng & Ma, 2007; Lien et al., 2012; Zhang & Daly, 2011). The first main drawback of official statistics is their large bias towards tax heaven and offshore financial centers. Official statistics consider them as final destination of Chinese OFDI, while in reality they represent transit countries towards other countries or back to China. MOFCOM (2014) shows that in the year 2013 Hong Kong holds 84% of the total stock in Asia; Cayman Islands and Virgin Islands the 88% in Latin America; and Luxembourg and Netherlands 26% in Europe. According to the description presented by Buckley et al. (2015), between 2003 and 2011 69-87% of Chinese OFDI flows were directed to these type of countries. This issue has been pointed by several studies (Blanchard, 2011; Cai, 1999; Cheng & Ma, 2007; Hanemann & Huotari, 2015; Liao & Tsui, 2012), but closely researched by few (Buckley et al., 2015; Sutherland & Anderson, 2015; Sutherland & Ning, 2011).

Sutherland & Anderson (2015) posits that Chinese MNEs are highly prone to use transit countries. Buckley et al. (2015) finds that the majority of Chinese firms listed in USA are also incorporated offshore. Authors argue that holdings located in different tax heaven countries have different main objectives, they highlight they seek to raise foreign capital, overcome institutional barriers from their home country and reducing tax burden. Sutherland & Ning (2011) put forward the examples of Mindray Medical International and Wuxi Pharmatech. Both firms before listing, they registered a holding company in Cayman Islands and afterwards undertook M&As of other foreign firms.

Regarding possible biases that aggregate FDI statistics might have, Liao & Tsui (2012) find relevant geographical and sectorial discrepancies between MOFCOM and Heritage Foundation statistics, and points that MOFCOM under reports the volume of Chinese OFDI. Hanemann & Huotari (2015) point significant discrepancies between Eurostat and MOFCOM statistics. Amighini et al. (2014), by utilizing EMENDATA, puts Europe as the second receptor of Chinese OFDI, while MOFCOM data presents Europe’s position

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2 In fact, authors point that by 2010 while 60% of Chinese OFDI is directed toward these countries, it was only 25% in the case of developed countries.
of Chinese investment as less relevant. According to Sutherland & Anderson (2015), this problematic compromises the existing evidence on Chinese MNEs internationalization.

The use of commercial datasets that measure Chinese FDI projects, such as fDi Markets, Thomson Reuters or Zephyr, have represented a step forward (Alon, 2010; Amighini et al., 2013a, 2013b; Buckley et al., 2014; De Beule & Duanmu, 2012; Filip De Beule & Van Den Bulcke, 2012; Zhang et al., 2011). Since they record FDI projects detected in the host countries, these datasets might mitigate the issue of tax heaven countries. Moreover, they permit to analyze the decision of investments at the firm level as well as distinguishing between SOEs and private enterprises or the sector which received the investment. Nevertheless, there is still room for improvement. These commercial datasets do not provide comprehensive financial firm level information. Moreover, they are prone to underestimate FDI since they only record publicly announced investments, those that are not so publicly disclosed or do not reach a certain threshold of investment are likely to not be gathered. In addition, FDI may be also underestimated in the sense pointed by Beugelsdijk et al. (2010), they record the investment project but do not measure the MNEs’ economic activity. Also, these data sources do not always follow official industrial classification of investments. For instance, fDi Markets classify investments by economic activity, a classification which is quite aggregate, arbitrary and not directly comparable with standard classification such as NACE. While in general the limitations for certain research questions from these commercial datasets have been overcome by using other sources like national surveys, for the case of Chinese OFDI limitations still exist.

By recognizing these issues, alternative datasets have emerged. These are the cases of EMENDATA, Rhodium Group and The China Global Investment tracker databases.

Amighini et al. (2014) built a comprehensive firm level database, named EMENDATA, of Chinese OFDI. To this end, they rely on several data sources. They gather greenfield investments from fDi Markets, and M&As from Zephyr and Thomson Reuters’ SDC Platinum. This database covers the period 2003-2011. Also, the information from these databases is merged with firms’ level financial variables from ORBIS (Bureau van Dijk Electronic Publishing).

Hanemann & Huotari (2015) provide a detailed description of RHG. This database is based on “mixture of channels including commercial databases, online search algorithms, media reports, regulatory filings, company reports, industry associations, official sources, investment promotion agencies, industry contacts and other sources” (Hanemann & Huotari, 2015, p. 52). It identifies the mode and year of entry, and illustrates the sectorial distribution of Chinese OFDI in the EU28. It covers the period 2000-2014.

Finally, CGIT is published by the American Enterprise Institute and The Heritage Foundation. It only records those transactions that overpass US$100 million, giving the year and mode of entry as well as the sectorial distribution. It covers the period 2005-2015.

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3 According to MOFCOM (2014), in 2013 only 8.1% of Chinese OFDI stock is located in Europe. Being behind Asia (67.7%) and Latin America (13%). In terms of number of enterprises, Europe occupies a more prominent role but far behind Asia. The report indicates that by the end of 2013 55% of the Chinese subsidiaries were located in Asia, while only 12.3% in Europe. In contrast, EMENDATA indicates that by 2011 38.6% were in Asia and 30.5% in Europe.
3. Data & Methodology

Data

CEFDI is constructed mainly relying on the firm level information provided by ORBIS. ORBIS is compiled by Bureau van Dijk Electronic Publishing. It contains information from more than 150 million firms across the world. Financial data is gathered from the business registers collected by Local Chambers of Commerce. ORBIS has the advantage of covering publicly listed firms and non-listed firms as well as institutional investors. Additionally, it has a wide coverage of small and medium sized firms. Kalemli-Ozcan et al. (2015) illustrates that the database is quite representative for the European case. However, it is important to highlight that “is a collection of business records rather than a comprehensive and coherent business register” (Pinto Ribeiro et al., 2010 pg.7). Additionally, as data providers and update periodicity differs across countries, ORBIS representativeness differs among them. The use of Bureau van Dijk databases are not new in the FDI or MNEs literature (eg. Bertrand & Betschinger, 2012; Buckley et al., 2014; Cozza et al., 2015; Sanfilippo, 2015), however it usually does not identify the foreign firm year of entrance or mode of entry, or when they do they rely on other sources of information different to ORBIS.

Kalemli-Ozcan et al. (2015) provide a detailed methodology for building a MNEs database by relying on different ORBIS and Amadeus updates over time. Authors compare their FDI dataset coverage for the OECD countries with “Activity of Multinational Enterprises”, “Activities of Foreign Affiliates” and “Foreign Affiliates Statistics” databases from OECD. They show that in some cases it has a more accurate coverage, and in most its’ representativeness is above 50%. Similar methodology is used by Stiebale & Reize (2011). Although this method might be more appropriate for larger samples, to our knowledge it does not specify how to detect the year of foreign investment or the mode of entry. In order to gather these details, information from foreign investors from ORBIS should be treated case by case.

Methodology

The aim is identifying those firms that have Chinese ownership and determining their year and mode of entrance in the foreign market. Additionally, to establish whether the investors are SOEs or private enterprise. Chart 1 summarizes the main steps. Once identified the group of potential FDI cases, the mode and year of entry are determined by using Zephyr’s M&As records, company’s ownership history and description, and news. It is important to highlight that other external data sources which do not belong to ORBIS are only used for determining these aspects and the investor’s ownership. In this way, the database representativeness does only depend on the initial information from ORBIS and potential biases are avoided⁴. Moreover, the FDI definition set by the International Monetary Fund (IMF) is followed. Thus, all Chinese ownership holdings that not surpass the 10% are discarded. Additionally, CEFDI only considers as FDI invertors other firms, not individuals (IMF, 1993). Finally, as in Kalemli-Ozcan et al. (2015), those firms that do not provide the year of creation, the currency in which the firms’ accounts are published or the last year available from the financial statement are dropped from the

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⁴ For instance, for the case of Spain we are aware that an emblematic building from Madrid, named “Edificio de España”, was acquired by Dalian Wanda Group in the year 2014. However, ORBIS does not record this building, as it only record registered firms. In consequence, this investment it is not in our dataset.
sample. In addition, the dataset only includes those firms with unconsolidated accounts\(^5\). Thus, CEFDI also includes the financial statements from the firms affected by Chinese OFDI.

When it comes to the ownership of firms, ORBIS provides information regarding the shareholders and the ultimate owner. While the direct shareholders might not always be Chinese, the ultimate owner must always be it. As explained before, FDI might not come directly from the country of origin to its ultimate destination, it might be made from a holding or subsidiary in a third country. In this way, as illustrated in chart 2, two different cases arise. The first is when investment flows directly from the origin country to the ultimate destination, and the second it is when the investment to the ultimate destination goes through a transit country. While in the first case the ultimate owner and the shareholder from foreign subsidiary will most of the times be the same, in the second the contrary is expected. ORBIS permits us to detect this phenomenon by using the shareholders’ ownership history and the ultimate owner.

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\(^5\) ORBIS provides firm level data with consolidated and unconsolidated accounts. The first comprises the statement of the parent Company and all its subsidiaries. In turn, unconsolidated accounts only reports the accounts of the firm without integrating the entities that controls (Kalemli-Ozcan et al., (2015)). Unconsolidated accounts are used to avoid double accounting of firms.
Chart 1: Guideline steps

1) Gathering the initial information: Search strategy that identifies the foreign subsidiaries in the host country.

2) Download list and report: We gather the firm's unique identifiers and their ownership history.

3) Mode and year of entry:
   Greenfield investment (GI) and M&As.

   M&As
   - Identify M&As by using Orbis ownership history.
   - Identify M&As by using Zephyr.
   - Identify M&As by using news and reports.

   GIs
   - Identify GIs by using Orbis ownership history.
   - Identify joint ventures by using Orbis ownership history.
   - Identify GIs by using news and reports.

3) Ownership: SOEs, private enterprises, non-Chinese and non-firms investors.

   Ownership
   - Identify SOEs by using Orbis.
   - Identify SOEs and private investors by using firm's websites.

   Non-Chinese investors
   - Identify them by using firms' website.
   - Drop from sample.
Chart 2: FDI flows

Case 1

<table>
<thead>
<tr>
<th>Origin.</th>
<th>Ultimate destination.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chinese Company Y.</td>
<td>Foreign Company in country A with Chinese Shareholder Y.</td>
</tr>
</tbody>
</table>

Case 2

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Chinese Company Y.</td>
<td>Foreign Company in country H with Chinese Shareholder Y.</td>
<td>Foreign Company in country A with country H Shareholder X.</td>
</tr>
</tbody>
</table>

The sample

The sample of firms is conformed by those that according to ORBIS are active or have unknown situation. Since ORBIS takes approximately two years to completely update (Kalemli-Ozcan et al., 2015; Pinto Ribeiro et al., 2010), only those firms created before 2014 are considered. In addition, the sample only includes those that have at least 10% of Chinese ownership. This research strategy leads to a total 10,212 firms across the world with Chinese ownership and 3,820 in EU15.

In addition to firms’ financial statements, sector and other characteristics, we gather from each firms’ report their shareholders’ ownership history as well as the description and Zephyr’s M&As information. These reports provide the necessary information for determining the mode and year of entry.

Determining the mode and year of entry

The second task is to determine the FDI year and mode of entrance. In the case of M&As, firms’ report is checked whether it has any Zephyr with Chinese investment\(^6\). If it has, the M&A is recorded in the time provided by it. If it doesn’t, the firms’ shareholders ownership history is used. In the year in which the Chinese owner appears (shareholder) is the one the M&A has taken place (see figure 2). At this point, also the percentage which was acquired is gathered. The third way of identifying a M&A is by searching news that indicate when the Chinese shareholder (or ultimate owner) acquired the European firm. In the case of the greenfield investment several cases arise:

A) When the year of creation matches with the beginning of the ownership history of the firm and the owner is Chinese. In this case, since creation the shareholder is Chinese so the investment is classified as greenfield. In case there is more than one shareholder from the beginning (and from a different country), we also classify the investment as Joint Venture. Nevertheless, there is a limitation and an assumption. Not always the ownership history starts in the same moment than the year of creation, particularly for those firms that were created before 2004. In the

\[^6\] Through Zephyr we identified 102 cases for the period 2006-2014.
present database, an investment is also recorded as greenfield if there is a Chinese owner since the beginning of the ownership history and there is a difference of maximum of two years between the creation of the firm and the ownership history. Thus, if the firm was created in 2002 and the ownership history starts in 2004 with a Chinese owner, we consider that we are dealing with a greenfield investment that took place in 2002.

B) The year of creation does not match with the beginning of the ownership history and the beginning of the ownership history is more than 2 years later than the year of creation. For instance, a firm that was created in the year 2000 but the ownership history starts in 2006. When this situation arises, the firm’s description and history is consulted. In case the necessary information is not there, a different source is consulted. The preferable sources are the subsidiary’s and investor’s website. When they are not available, news or document from a reliable source that indicates the conditions of the investment are used. Although in the available ownership history there might only one shareholder, it cannot be assured whether it is a greenfield investment or a M&A. In case the necessary information is not found, the year and mode of entry are recorded as missing.

In the mode and year of entry, missing values are common but not a majority. From the 2,463 firms of our database, we have 291 missing values in both variables (11.81%).

**Figure 2**

<table>
<thead>
<tr>
<th>Shareholders’ name</th>
<th>Country</th>
<th>31/12 2014</th>
<th>Net change 14-13</th>
<th>31/12 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHANDONG RUYI SCIENCE &amp; TECHNOLOGY GROUP CO., LTD.</td>
<td>CN</td>
<td>51.00% n.d.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>VC</td>
<td>12/2014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MR JAN LEUZE</td>
<td>DE</td>
<td>23.00% n.d.</td>
<td>-31%</td>
<td>54.00% n.d.</td>
</tr>
<tr>
<td></td>
<td>VC</td>
<td>12/2014</td>
<td></td>
<td>10/2013</td>
</tr>
<tr>
<td>MAYN AG</td>
<td>CH</td>
<td>11.00% n.d.</td>
<td></td>
<td>11.00% n.d.</td>
</tr>
<tr>
<td></td>
<td>VC</td>
<td>12/2014</td>
<td></td>
<td>10/2013</td>
</tr>
</tbody>
</table>

Source: ORBIS. 2014 51% acquisition of Peine GMBH by SHANDONG RUYI SCIENCE & TECHNOLOGY GROUP CO., LTD. As it can be gathered from this figure, we notice that Chinese capital (CN) enters to the company in the year 2014. DE stands for Germany and CH for Switzerland.

One M&A, multiple subsidiary acquisitions

As it was previously mentioned, sometimes M&As entail the acquisition of not only a subsidiary in only one country, but of many subsidiaries in different countries. For instance, when a majority stake of Nidera from Netherlands was acquired by COFCO Corporation in 2014, its’ Spanish and UK subsidiaries also changed of ownership. In this section, we take a closer look to this matter and describe how to construct a traditional FDI dataset.

Provided we have four countries: A, B, C and Z, being A the country that receives the investment, B and C two other countries that might have a subsidiary from country’s A firm, and country Z is the one that makes the investment. Then, we have companies A’

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7 www.nidera.com
and $Z'$, being the first the investee and the second the investor. Accordingly, $B'$ and $C'$ are the subsidiaries company $A'$ might have in countries $B$ and $C$. We define them as:

$$A'_i, B'_j \text{ and } C'_k$$

In a traditional FDI dataset, the M&A will be recorded from country $Z$ to country $A$, from company $Z'$ to $A'$ (see chart 3). In CEFDI, M&As are recorded differently. It does record the acquisition of $A'$ by $Z'$, but also records the acquisitions of $A'$’s subsidiaries in countries $B$ and $C$. When this happens, at first sight it is not possible to distinguish which was the country that received the M&A and which are the countries (or subsidiaries) affected indirectly by it. Additionally, this methodology also records when several subsidiaries from company $A'$ are acquired in the same country (see chart 4). This issue leads to recording more M&As deals that they really are in countries $A$, $B$ and $C$, as well as M&As made by company $Z$. The objective is to record the M&A in a way that identifies the company acquired and the country that receives the M&A flow, and also record whether the acquisition affects to more plants in the same host country and in other countries (see chart 5).

In this way, CEFDI does not only record the direct M&As transaction from one country to another, but also when it affects multiple subsidiaries in the same country and different countries. It also indicates which countries are indirectly affected by M&As projects as well as the number of subsidiaries.

**Chart 3:** Traditional FDI dataset.

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Country Z
Company Z'
Investor

Country A
Company A'
Investee
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**Chart 4:** M&As recording without measuring the issue of multiple subsidiaries acquisitions.

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Country A
Company A'_1
Company A'_2
Company A'_3

Country Z
Company Z'

Country B
Company B'_1
Company B'_2

Country C
Company C'_1
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In practice, by using shareholders’ and ultimate owner information from ORBIS, indirect acquisitions are detected in the following way. When a M&A affects several subsidiaries in several countries, for instance Company $A'_1$, $B'_1$, and $C'_1$. As in Chart 5, $A'_1$ is directly acquired, and $B'_1$ and $C'_1$ are indirectly acquired. $A'_1$ is, and was before acquisition, the owner from $B'_1$ and $C'_1$. The shareholders’ ownership history will only change in the case of $A'_1$, while in the cases of $B'_1$ and $C'_1$ it will remain unchanged, although their ultimate owner will be the same as in $A'_1$. Thus, when this case emerges, the dataset records that $A'_1$ is directly acquired, and $B'_1$ and $C'_1$ are indirectly, since we have proof that the owner from $B'_1$ and $C'_1$ has been acquired (A). The same idea applies when multiple subsidiaries are acquired in the same country. Most of the times, the shareholder history will only change in one of them while the others will remain unchanged although the ultimate owner is going to be common.

The above rule has exceptions, but they represent a minority. One case arises when an European subsidiary is indirectly acquired through a M&As outside EU15. Consider the case of the acquisition of Elkem from Norway. In 2011, Elkem was acquired by China National Bluestar. This acquisition affected also Elkem’s subsidiaries in Spain, UK and Netherlands. From the six subsidiaries that are detected to be acquired indirectly, five have directly as shareholder the acquired firm in Norway. The remaining one, has as a shareholder one subsidiary from UK which at the same time is controlled by one of the above-mentioned subsidiaries. CEFDI detects 96 subsidiaries that change of ownership due to indirect M&As outside EU15.

Determining the investors ownership

For the case of China, ORBIS identifies directly the SOEs as global ultimate owners. However, when the investor is not classified as SOE, we cannot assume we are dealing with a private one. For the case of China, a significant share of those firms that cannot be directly identified as SOEs are not wholly private or do not have private capital at all. For example, “China Petroleum Technology and Development Corporation” is a subsidiary...
of China National Petroleum⁸, which is a SOE and is not directly identified as such by ORBIS.

In order to determine the ownership of the firm, the investor’s website or any other reliable document that indicates the ownership of the firm is used. In the Chinese case, most of the times SOEs, or firms with State ownership, do indicate the participation of the government or a particular state institution. A firm is recorded as wholly private whenever the report from ORBIS or the website, or any other reliable source, does indicate it is. Also a firm is considered private when in its website does not specify anything. When the firms’ website or any reliable source is found, a missing value is recorded. CEFDI identifies 1,097 firms with private ownership and 598 with State’s. This leads to this variable being missing for 22% of the firms that the mode and year of entry is known.

It is important to underline that during the process to identify firm’s ownership; one must also ensure that the shareholder is Chinese. We have identified 351 cases in which the shareholder was marked as Chinese but when visiting the firms’ website, we found that they weren’t. These firms are dropped from the sample.

4. The case of Chinese FDI in Europe

Registered firms

In the following, we describe the dataset. We only consider for the description those registered firms that provide unconsolidated accounts in ORBIS and we have the mode and year of investment: 2,177 firms.

As it can be gathered from table 2, CEFDI positions Germany as the main receptor of Chinese firms, followed by Netherlands, UK and Italy. Nevertheless, caution must be taken with Netherlands as it is a country prone to receive offshore holding companies, so probably the role of Netherlands in receiving real Chinese value adding activity is less prominent. Similar problematic is detected for the case of UK and Ireland. Then, Luxembourg statistics prove to be to certain extend unreliable, it is quite likely that a larger number of Chinese firms are registered there. As illustrated in the group of graphs 1, Chinese firms started to appear in the EU15 in 1980, however the rhythm first increased significantly in the immediate years previous and after China entrance into the World Trade Organization (WTO) in 2001. Then, we notice for the period 2009-2014, the rhythm of investment increases significantly. During these six years on average 295 firms were yearly registered, while for 2003-2008 the average was 52.

Overall, 65.14% of the registered firms are due to greenfield investments, while only 34.86% by M&As. As shown by group of graphs 1, only in the year 2014 the dataset shows that the number of Chinese firms registered due to M&As are higher than those by greenfield investments. M&As started to take place systematically after the year 2004 and they started increasing exponentially after the year 2009. Joint ventures do not appear to have a relevant role, our database only identifies 181 cases. Then, group of graphs 2 exhibit the ownership of Chinese investors. Until 2005 most of registered firms were owned by SOEs, but afterwards private investors started having a prominent role. In consequence, we find that 63.70% of firms are private.

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Regarding the sectorial distribution, using the NACE Rev. 2 industry classification, we find that the Wholesale and Retail trade sector is the main recipient (34.05%), followed by the Manufacture (18.92%) and the Professional and scientific (11.57%). In absolute terms, the sector that receives the highest number of Chinese subsidiaries due to M&As is the manufacture one, while the one that receives the highest number of greenfield investments is the wholesale and retail trade. In terms of employment, in the year 2014 Chinese OFDI approximately affects 84,576 jobs.\(^9\)

**Table 2:** Geographical distribution of registered firms

<table>
<thead>
<tr>
<th></th>
<th>Greenfield investment</th>
<th>M&amp;AS</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>20</td>
<td>27</td>
<td>47</td>
<td>2.16%</td>
</tr>
<tr>
<td>Belgium</td>
<td>15</td>
<td>16</td>
<td>31</td>
<td>1.42%</td>
</tr>
<tr>
<td>Germany</td>
<td>497</td>
<td>232</td>
<td>729</td>
<td>33.49%</td>
</tr>
<tr>
<td>Denmark</td>
<td>7</td>
<td>12</td>
<td>19</td>
<td>0.87%</td>
</tr>
<tr>
<td>Spain</td>
<td>24</td>
<td>33</td>
<td>57</td>
<td>2.62%</td>
</tr>
<tr>
<td>Finland</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td>0.41%</td>
</tr>
<tr>
<td>France</td>
<td>34</td>
<td>53</td>
<td>87</td>
<td>4.00%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>148</td>
<td>157</td>
<td>305</td>
<td>14.01%</td>
</tr>
<tr>
<td>Greece</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0.18%</td>
</tr>
<tr>
<td>Ireland</td>
<td>75</td>
<td>16</td>
<td>91</td>
<td>4.18%</td>
</tr>
<tr>
<td>Italy</td>
<td>138</td>
<td>89</td>
<td>227</td>
<td>10.43%</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>11</td>
<td>8</td>
<td>19</td>
<td>0.87%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>424</td>
<td>90</td>
<td>514</td>
<td>23.61%</td>
</tr>
<tr>
<td>Portugal</td>
<td>13</td>
<td>8</td>
<td>21</td>
<td>0.96%</td>
</tr>
<tr>
<td>Sweden</td>
<td>6</td>
<td>11</td>
<td>17</td>
<td>0.78%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,418</strong></td>
<td><strong>759</strong></td>
<td><strong>2,177</strong></td>
<td></td>
</tr>
</tbody>
</table>

Based on CEFDI dataset. Author’s own calculations.

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\(^9\) Figure calculated using the firms’ employment data from the year 2013. Only 36.79% of the firms give employment data.
**Group of graphs 1**: Number of registered firms in EU15 by mode of entry per year

Author’s own graphs from CEFDI dataset.
**Graph 2**: Evolution of Chinese registered firms in EU15 by ownership per year

![Graph 2](image)

Investment projects: “Traditional FDI dataset”

The previous description referred to the number of registered firms, their geographical distribution, evolution through time, mode of entry and ownership. However, as previously pointed, one M&A may affect to more than one subsidiary in the same host country and in other countries. When it comes to the number of firms due to greenfield investment, the number stays unchanged. In this way, our data set records 397 M&As, representing 21.90% of the total FDI projects registered. This implies that from total 759 firms indicated in the previous section, 362 become Chinese indirectly. Moreover, among these 362, 96 became Chinese through M&As outside the EU15. Thus, in total CEFDI identifies 1,815 FDI projects.

Table 3 displays the geographical distribution of Chinese FDI projects across EU15. As it can be gathered, the main receptors continue being Germany, Netherlands, UK and...
Italy. The last column of the table shows the number of investment projects that indirectly affects each country, as it can be gathered Spain and France are the main countries affected by this phenomenon, followed by Germany and Italy. **Group of graphs 3** illustrate the evolution of the FDI projects according to the mode of investment. Greenfield investments represent a larger proportion across the whole period, and the importance of M&As rapidly increases from 2009 onwards, becoming almost one third of the total investment projects in 2014. Regarding the ownership of the FDI projects, **group of graphs 4**, we notice that the predominant role of private firms in investments starts after 2006. From the total investment projects recorded they represent 67.34%.

The described trends are in harmony the descriptions of Chinese OFDI available in the literature (Cai, 1999; Shen & Mantzopoulos, 2013). China liberalization process started in 1979 and in the 80s OFDI started to be done by some SOEs. During the 90s, the first wave of Chinese OFDI began, although it was hampered by investment failures and the Asian financial crisis. Until then, OFDI was dominated by SOEs, private enterprises would start systematically investing after 1997. This coincides with the beginning of the liberalization processes China has gone through in order to enter into the WTO. Also, this period coincides with the beginning of the “go global” policy. After the year 2000, Chinese government starts to actively fostering OFDI. Then, during the period of the European economic crisis the dataset illustrates how Chinese OFDI increases exponentially, especially M&As. This is probably due to the occurrence of Fire sale FDI.

**Table 3**: Geographical distribution of FDI projects

<table>
<thead>
<tr>
<th>Country</th>
<th>Greenfield investment</th>
<th>M&amp;AS</th>
<th>Total</th>
<th>Percentage</th>
<th>Number of FDI projects that affects indirectly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>20</td>
<td>17</td>
<td>37</td>
<td>2.04%</td>
<td>3</td>
</tr>
<tr>
<td>Belgium</td>
<td>15</td>
<td>7</td>
<td>22</td>
<td>1.21%</td>
<td>3</td>
</tr>
<tr>
<td>Germany</td>
<td>497</td>
<td>171</td>
<td>668</td>
<td>36.80%</td>
<td>8</td>
</tr>
<tr>
<td>Denmark</td>
<td>7</td>
<td>7</td>
<td>14</td>
<td>0.77%</td>
<td>3</td>
</tr>
<tr>
<td>Spain</td>
<td>24</td>
<td>13</td>
<td>37</td>
<td>2.04%</td>
<td>9</td>
</tr>
<tr>
<td>Finland</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>0.28%</td>
<td>2</td>
</tr>
<tr>
<td>France</td>
<td>34</td>
<td>26</td>
<td>60</td>
<td>3.31%</td>
<td>9</td>
</tr>
<tr>
<td>UK</td>
<td>148</td>
<td>56</td>
<td>204</td>
<td>11.24%</td>
<td>7</td>
</tr>
<tr>
<td>Greece</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0.22%</td>
<td>0</td>
</tr>
<tr>
<td>Ireland</td>
<td>75</td>
<td>4</td>
<td>79</td>
<td>4.35%</td>
<td>3</td>
</tr>
<tr>
<td>Italy</td>
<td>138</td>
<td>46</td>
<td>184</td>
<td>10.14%</td>
<td>8</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>11</td>
<td>7</td>
<td>18</td>
<td>0.99%</td>
<td>0</td>
</tr>
<tr>
<td>Netherlands</td>
<td>424</td>
<td>29</td>
<td>453</td>
<td>24.96%</td>
<td>4</td>
</tr>
<tr>
<td>Portugal</td>
<td>13</td>
<td>3</td>
<td>16</td>
<td>0.88%</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>6</td>
<td>8</td>
<td>14</td>
<td>0.77%</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>1,418</td>
<td>397</td>
<td>1,815</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Group of graphs 3: FDI projects by mode of entry

Period: 1980-2000

Period: 2001-2014

Author’s own graphs from CEFDI dataset.
Group of graphs 4: FDI projects ownership

Author’s own graphs from CEFDI dataset.

Regarding the use of transit countries, CEFDI show they play a relevant, but not predominant role. From the recorded FDI projects, the dataset indicates that 71.2% come directly from China, the remaining 28.8% is not completely concentrated in tax heaven countries. It appears that Chinese firms also use their previous presence in a EU country to invest in another one. This phenomenon represents 8.26% from the total\textsuperscript{10}, being the main country Germany (5.53%). Then, countries known for being tax heavens and/or financial centers represent 19.51%, being the main ones Hong Kong (5.14%),

\textsuperscript{10} These countries are Germany, Italy, Austria, France, Portugal, Sweden, Belgium. Denmark, Hungary and Poland.
Netherlands (5.03%), Ireland (3.43%), Great Britain (1.93%) and Luxemburg (1.38%)\textsuperscript{11}. The remaining 1.03\% belong to a quite heterogeneous group of countries.

5. Differences and limitations

**EMENDATA**

Both, EMENDATA and CEFDI, seek a comprehensive firm-level database that integrates the firms’ financial statements from ORBIS. However, their methodological differences lead to significant differences between datasets. Table 5 summarize them, for CEFDI we include a column for the number of registered firms and one for the number of FDI projects. We only compare the number of FDI projects with EMENDATA, and only point the advantages for certain research questions that also considering registered firms can have in terms of sample size.

Firstly, the sample of investments from both datasets are determined differently. While in CEFDI is only determined by ORBIS, in EMENDATA is determined by Zephyr, Thomson Reuters and fDi Markets. Secondly, CEFDI covers only the investments in the EU15, while EMENDATA considers the whole world. Thirdly, both datasets cover different periods. While EMENDATA starts in 2003 and finishes in 2011, CEFDI spans from 1980\textsuperscript{12} to 2014.

In the case of greenfield investments, EMENDATA presents certain bias by relying only in fDi Markets, which considers those greenfield investments publicly announced that implied an investment higher than one million US$. In contrast, CEFDI database make certain assumptions that we cannot assure that leads to the correct identification of all greenfield investment, but investments can be identified independently of the initial investment. Regarding M&As, EMENDATA by relying on Zephyr and Thomson Reuters only identifies publicly disclosed M&As. In this regard, it is likely that CEFDI identifies not so publicly announced M&As since it uses the shareholders’ history and searches for M&As news between two specific companies. Nevertheless, CEFDI presents a significant share of missing values when it comes to the mode and year of entry.

These differences between EMENDATA and CEFDI database leads to a different sample size. Amighini et al. (2014) do not provide the number of investments for the EU15 but for EU27. CEFDI records 769 investments where the Chinese ownership is higher than 10\% of the target firm, while EMENDATA for the EU27 identifies 777 cases. The first identifies 625 greenfield investments and 144 M&As, while the second 670 and 84 respectively. For the case of Germany, EMENDATA records 291 investments, while CEFDI 304. CEFDI identifies a smaller number of greenfield investments but a larger number of M&As. The differences in the number of greenfield investments shows the desirability of including information from fDi Markets, and the differences in M&As the advantages of exploiting ORBIS ownership history.

We also find significant differences in the sectorial distribution of Chinese investments. For the case of Europe, EMENDATA points that the manufacturing sector is the main receptor of both, greenfield investments and M&As. In contrast, CEFDI identifies the Wholesale and Retail trade sector as the main receptor, occupying manufactue the second

\textsuperscript{11} The remaining countries are: Cayman Islands, Bermuda Islands, Switzerland, Singapore, British Virgin Islands and Cyprus.

\textsuperscript{12} Note that CEFDI only includes in their sample those firms that are active, thus investments that took place between 1980-2014 but resulted in bankruptcy are not recorded. In contrast, EMENDATA records FDI independently of whether the company survives after the time of investment.
place. These sectorial discrepancies might be due to the fact that low value added services may imply lower amount of investment, and in consequence their transaction might not draw attention from public interest and not be recorded by Zephyr or Thomson Reuters. Additionally, another source of discrepancy is that the industrial classification from fDi Markets cannot be directly compared with standard industrial classification. In this way, both datasets may identify the same investment project but classify it in different sectors.

Table 5: Differences between CEFDI and EMENDATA

<table>
<thead>
<tr>
<th></th>
<th>CEFDI (registered firms)</th>
<th>CEFDI (FDI projects)</th>
<th>EMENDATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data sources for identifying Chinese investments</td>
<td>ORBIS, Zephyr and news.</td>
<td>Zephyr, Thomson Reuters SD platinum and fDi Markets.</td>
<td></td>
</tr>
<tr>
<td>Sample size(^{13})</td>
<td>858 (EU15) 304 (Germany)</td>
<td>769 (EU15) 291 (Germany)</td>
<td>777 (EU27) 291 (Germany)</td>
</tr>
<tr>
<td>Greenfield investments</td>
<td>625 (EU15) 234 (Germany)</td>
<td>670 (EU27) 268 (Germany)</td>
<td></td>
</tr>
<tr>
<td>M&amp;As</td>
<td>226 (EU15) 70 (Germany)</td>
<td>144 (EU15) 57 (Germany)</td>
<td>84 (EU27) 19 (Germany)</td>
</tr>
<tr>
<td>Manufacture</td>
<td>19.45% (EU15)</td>
<td>17.52% (EU15)</td>
<td>76.4% (EU27)</td>
</tr>
</tbody>
</table>

Author’s own elaboration. Sources: CEFDI dataset and Amighini et al. (2014).

Rhodium Group

RHG comprises the period 2000-2014, and records 1,047 FDI projects in EU28, being 726 greenfield investments and 321 M&As\(^{14}\). For the same period, CEFDI identifies 1,763 transactions in EU15, from which 77.54% are greenfield investments. Additionally, in line with RHG, CEFDI also identifies Germany and UK as important receptor of Chinese investment. In contrast, our dataset gives a prominent role to Netherlands, which probably serves a transit country, and to Italy. In contrast, RHG puts France as the third main receptor, while CEFDI positions this country in the 6\(^{th}\) place. However, discrepancies are common since Hanemann & Huotari (2015) refer to the volume of investment when describing RHG, while CEFDI only reports number of FDI projects.

For the case of Germany, RHG and CEFDI do give a similar description of the evolution of Chinese OFDI. Both datasets show how until recently investment was dominated by greenfield projects, and how in the last four years the importance of M&As increased significantly. In terms of the sectorial distribution, the statistics offered by Hanemann & Huotari (2015) are not directly comparable to CEFDI or EMENDATA. Nevertheless, authors point a prominent role for the manufacturing sector, although its grade of importance is not as high as the one posited by EMENDATA. One significant discrepancy between the three sources, is that RHG and CEFDI provide a larger importance to M&As than EMENDATA. However, the importance of greenfield investments is larger in CEFDI than in RHG. Disentangling the motive for this discrepancy is not possible without being able to compare directly the same group of countries or more insight on the used methodology.

\(^{13}\) For comparing between databases we only consider the period 2003-2011.

\(^{14}\) Currently the dataset also covers the year 2015 (Hanemann & Huotari, 2016).
China Global Investment tracker

CGIT covers the period 2005-2015\(^{15}\), and distinguishes between greenfield investments and M&As. Moreover, it provides the sectorial distribution of the investment projects. For the EU15 it only records 146 investments, from which only eight are identified as greenfield investments. Thus, there is an under estimation of Chinese greenfield investments. On the other hand, CEFDI, for the same period, records 1,677 transactions, from which 76.74\% are greenfield investments. In CGIT, although Asia is the main receptor, the database shows a North America and Europe as significant receptors of Chinese investment.

CGIT main limitation is that it only records those investments that surpass US$100 million. It only identifies high profile investment, missing those transactions that are less noteworthy for the public (Liao & Tsui, 2012). In contrast, this database has the advantage of recording each investment project, being publicly available for free\(^{16}\) and it offers more up to date information. In addition, it offers information on FDI failed projects.

Limitations and possible extensions

In general, one major limitation of the presented methodology is that its representativeness in other zones of the World is unknown. We cannot assure that applying this methodology for the case of Africa will provide a dataset as representative as the case of Europe. The differences of ORBIS across the World are prone to illustrate country bias. Nevertheless, this can also be expected in commercial datasets which rely on public available data. Additionally, this methodology will always provide results which lag 2 years. Also, although the dataset provides the year and mode of entry, it does not have information regarding the volume of investment, intercompany loans or reinvested earnings. In terms of available financial variables, ORBIS only provides a span of 10 years.

When it comes to the measurement of FDI, one limitation is that Joint Ventures are most likely to be under identified, for instance CEFDI does not record those that occur when a M&A takes place. In addition, when measuring FDI transactions, CEFDI only identifies those from firms that are still active. If a FDI project took place in the past but the company failed bankruptcy, that FDI project is not gathered by CEFDI.

In the case of greenfield investment, CEFDI does make a two years assumption that might lead to errors of identification. However, we believe that the likelihood of mistake is low and the presented statistics show similar patterns to the one presented by EMENDATA or RHG datasets. Altogether, we recognize as desirable the inclusion of iDi Market’s information.

In the case of M&As, recording the ownership change of all subsidiaries is likely to be appropriate for studying the effects and performance M&As. As argued by Cantwell (1992), technology and knowledge transfers from MNEs as well as efficiency gains through competition is likely to have a more relevant role than the actual capital flow from one country to another. Thus, the indirect appearance of new foreign owners shall be taken into consideration as they are part of the economic activity performed by MNEs. Not taking into account this issue is prone to result in an understatement of the countries’ relationship with foreign production. Measuring correctly the FDI relationship between China and Europe is quite relevant when policy is at stake. In addition, how subsidiaries

\(^{15}\) Database version downloaded on the 07/03/2016. We consider only consider the period 2005-2014.

\(^{16}\) https://www.aei.org/china-global-investment-tracker/
economic activity in different sectors change after foreign acquisition may give further insight on MNEs’ investment motivations. However, CEFDI does not completely measure how M&A affect indirectly different subsidiaries. It only records this phenomenon when the M&A entails more than 50% of ownership. An acquisition of 20% may also affect indirectly other subsidiaries, but in this aspect CEFDI is not fully consolidated. Alternatively, the presented methodology also permits to measure FDI in a traditional way, as it is measured by commercial datasets such as Zephyr or Thomson Reuters. However, CEFDI does not provide details of the M&A, like whether the takeover was friendly or the mode of payment.

CEFDI can be a useful tool for gaining further insight on the role played by tax heaven countries at the firm level and reducing the biases that they do represent. However, for a greater degree of accuracy, further expansion of the database is needed by including those firms that come from Cayman Islands, Virgin Islands or Hong Kong, and appear to have no relation with mainland China.

Other possible extension of the present dataset is the possibility to merge it with other firm level databases. In this line, Pinto Ribeiro et al. (2010) point the possibility of linking ORBIS with PATSTAT, which provides patent data at the firm level. Moreover, by also considering parents’ characteristics, following Alfaro & Charlton (2009) it is possible to use output and input tables in order to identify the type of investments that are being done. The importance of vertical or horizontal FDI from emerging countries is still an issue that have not been completely explored. This aspect could bring new insight on their internationalization strategies. Moreover, as done by Cozza et al. (2015), the subsidiaries information can be merged with the investors in China. This will give further insight on the investors characteristics.

6. Conclusions

In total, CEFDI identifies 2,463 Chinese subsidiaries in EU15. It only has information of the year of entry and mode of entry for 2,177 cases, and ownership information for 1,695 cases. It covers the period 1980-2014. In terms of independent FDI transactions 1,815 and 1,337 are respectively recorded. It shows that Germany, Netherlands, UK and Italy have a prominent role as Chinese FDI receptors. Regarding the sectorial distribution, it points the Wholesale and retail trade and Manufacture sectors as the main receptors. Moreover, it identifies that almost 30% of the recorded FDI transactions have arrived through a transit country. Our comparison with other firm-level datasets focused in Chinese investment in Europe shows that CEFDI does record a larger number of M&As and a similar one of greenfield investments.

The present work seeks to provide a new alternative for the study of Chinese OFDI. CEFDI does not only seek to give a more comprehensive view of the evolution of Chinese investment in Europe, but also to expand the boundaries of research on Chinese OFDI. Although with certain limitations, this objective is achieved. CEFDI provides a grade of detail that cannot be easily accessed for the case of China. Further research shall focus on the role played by transit countries, the effects of FDI under the context of multiple subsidiaries acquisitions, the determinants of MNEs’ economic activity and sectorial studies. These research proposals are under investigated in general, and particularly when it comes to OFDI from emerging and developing countries. These venues might bring new insight on the characteristics of Chinese MNEs’ internationalization, which will potentially contribute to develop policy recommendations towards this new investor and to expand the theoretical literature of emerging countries OFDI.
References


