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Getting the Numbers Right on China's Actual Overseas Investment: The Case of the Netherlands

Piter DE JONG, Mark J. GREEVEN, and Haico EBBERS

Abstract: This study assesses the quality of Chinese outbound FDI data. In our case study of the Netherlands, we checked the data quality of the often-used Orbis/Amadeus database and its data source, the Dutch Chamber of Commerce (Kamer van Koophandel, KVK), which has one of the oldest and, arguably, one of the better databases within Europe. We analysed Chinese investments in the Netherlands and show that six adjustments are necessary to clean up the data. We also show that not making these adjustments can significantly impact the outcome of research. The cleaned-up data show that sampled Chinese firms are young, small, and private.

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Keywords: China, Netherlands, Overseas Direct Investment, Data Quality

Piter de Jong graduated from Nyenrode University (BBA) and Bradford University (MBA). He has lived and worked in China for 18 years. There, he was managing director of the Shanghai branch of ING Bank NV and has served as a board member/Shanghai chairman of the European Chamber of Commerce in China for six years. He recently joined the Dutch Ministry of Economic Affairs in The Hague and is currently a PhD candidate at Nyenrode University.
E-mail: <piter.d.de.jong@gmail.com>

Dr. Mark J. Greeven (corresponding author) graduated from Erasmus University, Rotterdam School of Management (PhD) and has been living and working in China since 2011. He is an associate professor at the Management Science and Engineering Department of Zhejiang University, School of Management. Before moving to China, he spent 3.5 years as an assistant professor at the Rotterdam School of Management. His research interests include innovation and entrepreneurship, and global R&D in, to, and from China. His work

has been published in journals such as the *Asia Pacific Journal of Management*, *European Management Journal*, *Telecommunications Policy*, and *Technology Analysis and Strategic Management*. He published a case series on Alibaba and is currently writing a book on business ecosystems and Alibaba (Routledge, forthcoming 2017).
E-mail: <mgreeven@gmail.com>

Dr. Haico Ebbers is professor of International Economics at Nyenrode Business University in The Netherlands. He is guest professor at several national and international universities, including some top universities in China. He was visiting professor at the China Europe International Business School in Shanghai and is still active as visiting professor at Renmin University in Beijing and Sichuan University in Chengdu. In his latest publications, the focus is on China's integration into the world economy, in particular its relationship with the European Union, through trade and investments.
E-mail: <h.ebbers@nyenrode.nl>

Introduction

China has recently emerged as an economic power that is investing in, if not buying up, the developing and developed world (Nolan 2012). For instance, the number of Chinese overseas acquisitions has more than doubled in the past five years and China's outward foreign direct investments (OFDI) reached a record high of USD 103 billion in 2014, making it the world's third-largest outward investor in that year. By the end of 2012, the accumulated OFDI that Chinese companies such as Huawei, Haier, and Industrial and Commercial Bank of China (ICBC) had invested stood at USD 509 billion, ranking China 13th in the world (UNCTAD 2012), sparking considerable academic debate on such topics as entry mode (Shaver 2013), motivations (Yiu, Lau, and Bruton 2007), and conditions (Peng, Wang, and Jiang 2008). Moreover, according to the media and professional consulting reports, this trend is set to continue in the future.

In line with the investment path theory of Dunning and Narula (2003), we can expect higher growth in OFDI compared with inbound FDI as China builds up more and more foreign assets. Initially, China's overseas expansion was driven by state policy, which used loans to subsidise state-owned enterprises and help them secure a stable supply of natural resources (Yao and Sutherland 2009; Xiao and Sun 2005). However, privately-owned enterprises have more recently made headlines with M&A transactions in Europe as part of their search for technology, branding, and management know-how. This is driven by a further easing of application procedures for outward FDI, the strong emphasis on international infrastructural projects (for instance, the Silk Road initiative), and the need to diversify China's international investment position away from reserve assets.

One issue when researching the topic of Chinese OFDI is the accuracy of the data available, especially when considering Chinese investments via offshore financial centres (Sutherland and Anderson 2015), which affects data both at the firm level and the national level. The lack of detailed analyses on the size and significance of this phenomenon may mislead research and the resulting insights. For example, while the absolute amount of Chinese OFDI may seem to be very large, almost 70 per cent of it went to four offshore financial centres in 2012 and a significant proportion of these funds then flowed back into mainland China (Xiao 2004), rather than actually being invested overseas (Garcia-Herrero, Xia, and Casanova 2015).

This so called "round-tripping" seems to occur not only for tax reasons, but also for the additional value that may be added, as some offshore centres enable firms to list on international capital markets (Sutherland and Matthews 2009).

Nevertheless, many studies use data from leading databases that provide firm-level data, such as Orbis/Amadeus, for academic studies (see Zhang and Jiang 2013; Bas and Causa 2013; Javorcik and Spatareanu 2008), without carefully analysing their structure and meaning. This lack of detailed analysis is worrying, as we must be clear about the significance of Chinese OFDI before we can set a relevant research agenda. In this study, we will address four research questions. The first (RQ1) asks, "Is there a data problem when analysing Chinese OFDI into the Netherlands, as a sample case for the rest of Europe?" The second research question (RQ2) queries, "What steps are necessary to address the data quality issues?" The third research question (RQ3) focuses on "What is the correct picture of OFDI in the Netherlands, after the data has been cleaned up?" The final research question (RQ4) deals with "What is the impact of possible data quality issues?"

In particular, we focus on the predominantly-used Orbis/Amadeus database, which as with all other databases sources its data on existing legal entities in the Netherlands from the Dutch Chamber of Commerce (Kamer van Koophandel, KVK), to analyse actual Chinese investments in one European country: the Netherlands. China and the Netherlands have well-established economic ties dating back to 1729 when the Dutch United East India Company (Verenigde Oostindische Compagnie, VOC) initiated direct trade with China (Liu 2007). Trade between the Netherlands and China is still strong. In 2013, based on bilateral trade, the Netherlands was China's fourth largest trading partner in the EU after Germany, the UK and France (Hansakul and Levinger 2014). The Netherlands has been a significant investor in China, ranking number two within the EU, in 2012 and 2013, second only to Germany (MOFCOM 2013, 2014) and number four within the EU, in 2014 (MOFCOM 2015). In addition to having strong trade ties with China and being a significant investor in China, the Netherlands is also a recipient of large amounts of Chinese OFDI compared to other EU countries. The Netherlands has a large number of registered Chinese companies, and it has recorded detailed data on investments in a well-established database since

1920. Overall, this study aims to clean up the raw data from various agencies, reports, and statistical databases to create a more detailed insight into Chinese OFDI.

We start by providing background information on Chinese OFDI and the phenomenon of round-tripping in section two, followed by a description of the methods and necessary steps for cleaning up data in section three. The next section then shows the results of the data clean-up, presenting a revised picture of Chinese OFDI into the Netherlands. Section five discusses the impact of issues with data quality using two examples, and the last section concludes with recommendations for further research.

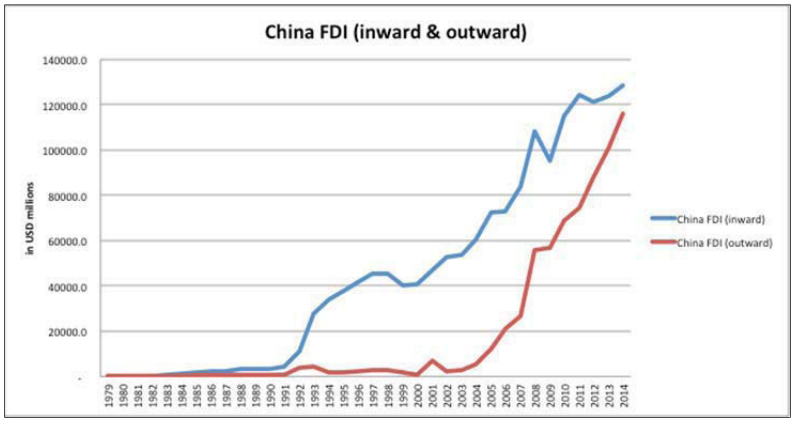
The Background of Chinese OFDI

As can be seen from Figure 1, virtually no OFDI took place in the period prior to 1984 when overseas investment could only be undertaken by Chinese state-owned foreign trade corporations with official political approval, mainly in the form of joint ventures. In 1985, Chinese OFDI was only approximately USD 0.3 billion. From a Chinese government perspective, three stages in OFDI can be identified (Luo, Xue, and Han 2010) since 1984:

- The first phase (1984–1990), focused mainly on gathering foreign exchange resources. In this stage, private enterprises were allowed to apply for permission to establish overseas subsidiaries. Within these years, the volume of Chinese OFDI increased almost 10-fold to USD 2.7 billion.
- In the second phase (1991–2000), FDI officially became a part of China's national economic development plan and the Chinese government started to actively encourage Chinese OFDI in order to explore overseas markets, increase the competitiveness of Chinese enterprises, and avoid foreign tariff barriers. Over 120 state-owned enterprises, termed "global industry champions" by the Chinese government, accessed overseas investment programmes between 1991 and 1997. These companies included Sinopec, China Telecom, Lenovo, and Haier.
- In the third phase (2001–present), the Chinese government strengthened its "Going abroad" policy (走出去战略, *zouchu qu zhanlüe*), which aimed to acquire strategic assets (Deng 2009), further develop internationally competitive "global champion"

enterprises, secure resources abroad (Buckley et al. 2007), overcome intensified competition and overcapacity in the domestic economy, acquire advanced technology to address competitive disadvantages (Child and Rodrigues 2005), and acquire brands and managerial know-how. More recently driven by the many failed ventures abroad and limited returns to the mainland economy, Beijing, in particular the State Administration of Foreign Exchange (国家外汇管理局, *guojia waihui guanli ju*, SAFE), now provides more guidance. The advice focuses not only on cheap assets (for instance, SAIC Motor Corporation Limited, TCL Corporation, and others), but increasingly on technology for domestic use, such as in the case of Geely Auto's acquisition of Volvo, instead of only brand value.

Figure 1. China's Global FDI (in USD million)



Source: UNCTAD 2015.

In summary, we have seen a steep increase in OFDI from China while also observing, qualitatively, that the motivations of Chinese OFDI are multiple and have changed over recent decades. However, the aggregated data presented in Figure 1 cannot describe such changing motivations. In particular, these data do not show one particularly relevant phenomenon in Chinese OFDI, namely that a large proportion of capital is reinvested in mainland China (so-called "round-tripped capital"). As shown in Table 1, almost 70 per cent of

Chinese OFDI went to four offshore financial centres and a large proportion of this amount was reinvested in the mainland. Of the total Chinese OFDI of USD 531.9 billion, 57.6 per cent (or USD 306.3 billion) went to Hong Kong, followed by the British Virgin Islands (5.8 per cent), the Cayman Islands (5.7 per cent), and Bermuda (0.6 per cent).

Table 1. Top 10 Destinations for Chinese OFDI Stock in 2012

No.	Country/Region	Stock in USD billion	Percentage
1	Hong Kong	306.372	57.6
2	Virgin Islands	30.851	5.8
3	Cayman Islands	30.072	5.7
4	United States	17.080	3.2
5	Australia	13.873	2.6
6	Singapore	12.382	2.3
7	Luxembourg	8.978	1.7
8	United Kingdom	8.934	1.7
9	Kazakhstan	6.251	1.2
10	Canada	5.051	0.9
Total	World	531.900	100
	European Union	*31.538*	*5.9*

Source: National Bureau of Statistics and State Administration of Foreign Exchange 2013.

Note: The *Statistics Bulletin* indicates an OFDI amount of USD 531.9 billion, which is slightly more than the USD 509 billion presented in the UNCTAD data.

Hence, a closer look at the disaggregated data shows a different picture of Chinese OFDI, suggesting that we need to go beyond aggregate OFDI figures and investigate actual investments in order to ascertain a more accurate representation. For this purpose, we focus on a specific case example, namely the Netherlands.

Methods

In order to answer the first research question regarding the existence of data quality issues and the second research question which addresses what possible steps might be taken to fix data quality issues, we focus on data problems in OFDI data in one of the oldest and

most reputable country-level database in Europe, the database of the Dutch Chamber of Commerce.

Database and Country Selection

We analysed the Orbis/Amadeus database operated by Bureau van Dijk, which is the world's leading database for academic research. Its data cover 120 million listed and non-listed companies globally, and is mainly focused on legal entities in Europe (about 70 million companies). It uses Dutch Chamber of Commerce data as its source. It is widely used in academic studies in general (for example, a search for "Amadeus database" within Google Scholar yields 9,230 results, April 2014). The Orbis/Amadeus database is also widely used in studies of Chinese OFDI.

Chinese OFDI into Europe has grown significantly since 2006 and in the Netherlands since 2010. Within Europe, the Netherlands ranked sixth in terms of OFDI stock and fourth in terms of OFDI flow, in 2012 (National Bureau of Statistics and State Administration of Foreign Exchange 2013). In 2013 the Netherlands had the highest number of entities after Romania, Germany, and Italy with 402 mainland Chinese companies registered, accounting for 5.9 per cent of the total. Please note that, after a data quality check, the actual number of registered mainland companies was found to be 333; however, as we did not perform similar data quality checks for the other EU countries, we continue to use the figure of 402 taken from Orbis/Amadeus in this discussion.

Furthermore, the Netherlands has one of the most advanced and open information systems for collating company data in the EU. This system has recorded both limited and non-limited companies since 1920. Within the EU-27, most trade registers are based on the European guideline 2009/101/EC, which covers only companies with limited liabilities. However, both limited and non-limited companies are included in the Netherlands' company data system. In addition, the Netherlands has the most companies registered in the EU, after Italy, Spain, Germany, and France. However, data verification requires local language skills, as much of the data to be analysed are only available in the local language.

Table 2. Top Seven European Countries in which Chinese-Owned Legal Entities are based

Country	No. Of entities	% of total	GDP 2012 (in mio.)	% Of EU-27 GDP	Population 2012 (in mio.)	% of EU-27 population	GDP per head (nominal 2012)
Romania	3,325	48.6	131,747	1.0	21.5	4.3	5,800
Germany	1,605	23.5	2,643,900	20.5	82.4	16.2	32,299
Italy	538	7.9	1,565,916	12.1	51.5	12.3	25,700
Netherlands	402	5.9	600,638	4.7	16.1	3.3	35,900
Czech Republic	291	4.2	152,828	1.2	10.5	2.1	14,500
Great Britain	270	3.9	2,054,000	15.9	62.6	12.5	30,100
France	108	1.6	2,029,877	15.7	63.3	12.6	30,600
EU 27	6,844	100.0	12,899,149	100.0	501.0	100.0	25,600

Source: ORBIS/Amadeus database, July 2013.

Data Collection

The data for this research were collected from Orbis/Amadeus, the Dutch China Chamber of Commerce in the Netherlands (DCCC), the Kamer van Koophandel (KVK, the Dutch Chamber of Commerce, which provides Dutch company data for most other databases), and general Internet searches. In the Netherlands, 592 legal entities are listed in Orbis/Amadeus with a global ultimate owner (GUO) in Greater China (402 from mainland China, 52 from Hong Kong, and 138 from Taiwan). In our study, we focused on Chinese firms from mainland China. All the data on these 402 companies were checked and verified. Data quality is important, as using Orbis/Amadeus database information without analysis on a company-by-company basis may significantly affect the results of research.

In this research, Chinese companies in the Netherlands are defined as Dutch companies registered with KVK that have a GUO that is 50 per cent mainland Chinese. The choice to include 50 per cent owned entities, rather than 51 per cent owned entities with management control, in the dataset was deliberate. European companies in China often operate under 50/50 joint venture agreements with Chinese companies, and this is a common and acceptable way for Chinese firms to operate overseas. Therefore, companies with less than 50 per cent Chinese ownership were not considered.

Data Checking Procedure and Sample Size Adjustments

We analysed every Chinese company in our sample using a variety of methods. First, the company data derived from the Orbis/Amadeus database were checked against those from the KVK and the DCCC. Both the KVK and the DCCC are formal organisations that register and record company-level information. This procedure led to the identification of inconsistencies that hampered an accurate description of a company's situation. Therefore, in a second step, we checked the available public information on the companies, such as websites and news stories, which resulted in a revised, but still incomplete, picture. Thirdly, we contacted those companies for which we still had inconsistent data. Lastly, we verified our company data with Dutch national and city-based governmental agencies based in China that are involved in attracting Chinese OFDI into the Nether-

lands, and with experts from the authors' academic networks. Based on this procedure, we are confident about the details of the presented dataset.

However, this process identified a number of issues with the general database. In particular, we discovered the limitations of using information from data vendors without conducting further detailed analysis at the company level. In this regard, the triangulation of sources combined with industry insights and direct company-level analysis is warranted. Specifically, this four-step process suggested that six adjustments are essential when analysing these data. Most of these adjustments are unlikely to be specific to the Netherlands alone because five of the six issues refer to missing or incorrect China links in the Orbis/Amadeus database. The last reason – the prevalence of holding companies – may be specific to the Dutch case; however, data for other countries such as Luxembourg, Switzerland, and Ireland could reveal similar patterns. The issues are detailed, as follows:

A Missing China Link

For some companies, Orbis/Amadeus does not recognise the Chinese shareholder, because the shareholder link to China is not included in the KVK data (the source of the Orbis/Amadeus data). Some of these companies were acquired by Chinese companies, but the data had not been updated in the KVK database. Also, the Chinese parent company may not be visible because Virgin Islands entities are placed in the ownership chain directly from the Dutch-based subsidiary to the mainland Chinese parent company (see the Ausnutria case study in the "Results" section as an example). We identified these companies by cross-checking data derived from KVK, Orbis/Amadeus, the DCCC list, public data from the Netherlands Foreign Investment Agency, and Internet searches. Another 36 legal entities were, thus, identified as having Chinese ownership above 50 per cent, making the total dataset 438 legal entities (402+36).

An Erroneous China Link in Orbis/Amadeus

By the same token, we also found that 114 Dutch legal entities on the Orbis/Amadeus database were marked as having mainland Chinese ownership, but actually had other ultimate ownerships, mainly Hong Kong or Taiwan. For example, Edimax Technology Europe BV's ultimate parent, Edimax Technology Co. Ltd, is listed on the Or-

bis/Amadeus database as mainland Chinese, but is in fact a Taiwan listed company. These 114 names were removed from the database, reducing the dataset to 324 legal entities (438–114). The wrong link issue is significant and underscores the importance of understanding the Chinese context. It may be the result of mapping issues or human error and deserves further research, not only in the KVK database, but also in other national chamber of commerce databases within Europe.

An Erroneous Hong Kong Link in Orbis/Amadeus

Furthermore, six entities (five Lenovo entities and Zhenhua) were listed in Orbis/Amadeus as Hong Kong-owned, even though the actual ultimate owner is based in mainland China. By adding these six entities, the dataset grew to 330 entities (324+6).

Branches of Other Legal Entities

We also located three Chinese companies that had opened an office in the Netherlands without establishing a separate legal entity. These companies are registered as the branch offices of non-Chinese GUO entities at KVK and do not appear in an Orbis/Amadeus search of Chinese companies in the Netherlands. These three companies are China Southern Airlines (Amsterdam Office), which employs 31 people in Amsterdam; Air China Cargo Co. Ltd (nine staff); and Sinotrans (Netherlands), which is a branch of Sinotrans (Germany) GmbH. The data on these companies were thus included, making the dataset grow to 333 entities (330+3).

Misunderstandings about Ownership

We found one example, outside the Orbis/Amadeus dataset, of a well-known Chinese company, Zoomlion (from Hunan, China, with 30,000 staff and a world player in construction equipment), being registered with KVK as the Zoomlion European Service Center. However, despite the well-known Chinese name, this entity actually belongs to the Kranenbouw Group BV, which is a Dutch-owned dealership for Zoomlion for sales and repairs.

Holding Companies

Although not a data quality issue, including holding companies in research on Chinese OFDI can lead to misleading conclusions about the actual activity of Chinese companies. For example, Huawei Technologies Cooperative U.A., the Dutch subsidiary of the large Chinese telecom company Huawei, is listed in Orbis/Amadeus as having a turnover of USD 13.98 billion and total assets of USD 12.85 billion, but only 21 employees. This entity is actually the holding company of several Huawei entities in Europe. The actual economic activity of Huawei in the Netherlands is represented by the Dutch subsidiary, Huawei Technologies Netherlands BV, which has a more modest turnover of USD 256.6 million with USD 173.1 million in total assets and 519 employees.

While the database research was carried out in great depth by combining many different sources, we cannot exclude the possibility that some valid cases were still overlooked. In response to research question 1, we found that only 288 of the database-matched companies (402 minus the 114 identified in the section "An Erroneous China Link in Orbis/Amadeus" above) proved to be correct (in other words, 28 per cent of the data was incorrect). The Orbis/Amadeus database was unable to identify 45 (36+6+3) legal entities as Chinese-owned because parent company information was not available or was "disguised." Hence, 45 out of 333 cases, or 13.5 per cent, were not correctly identified using Orbis/Amadeus.

These limitations are important for future researchers to consider when interpreting analysis based on general databases. Furthermore, we found that 27 Chinese companies own several legal entities in the Netherlands. Thus, as of 23 July 2013, the actual number of mainland Chinese companies active in the country (regardless of how many legal entities they might have), with an equity stake of 50 per cent or above, was 268. It is interesting to note that, despite the regulation that all companies in the Netherlands (except for branch offices, of which there were three in our database) have to file at least balance sheet data, 130 of the 330 companies registered have not filed any such data. Moreover, of those 130 entities, only 10 legal entities have filed the required "403 declaration," which states that the parent company is responsible for all the liabilities of its subsidiary. In sum, the six issues identified above cause a significant misrepresentation of the actual presence of Chinese companies in the Netherlands. In

response to research question 2, therefore, we have shown that six adjustments are necessary to clean up these data.

The Results: Descriptive Findings and Case Study Example

In this section, to respond to the third question about the true picture of Chinese OFDI in the Netherlands, we present our descriptive findings for mainland Chinese companies in the Netherlands based on the revised data derived from the clean-up process presented in the previous section. To confirm, the focus of this study is on the 333 entities from mainland China identified above. We observed three main patterns in the data. The first pattern showed that the Chinese companies tend to be from the private sector, and that they are small and new in the Netherlands. Secondly, the Chinese companies tend to cluster in three regions, come predominantly from five Chinese cities, and centre on wholesale and trading. Finally, we observed that many large Chinese companies use tax-efficient structures, which is one advantage of Dutch policy that is currently under public scrutiny.

To explain further, firstly, 75 per cent of the Chinese entities in our sample are private firms and only 25 per cent are state-owned. On average, these companies have been operating in the Netherlands for 7.3 years. In fact, 55 per cent have operated in the Netherlands for fewer than five years with almost 90 per cent having less than 15 years' presence in the country. However, this average number is influenced by the 12 entities with over 30 years of history that have been acquired by Chinese companies. If these 12 entities are removed from the sample, (mainland) Chinese operations in the Netherlands would be seen to be a relatively recent phenomenon. Furthermore, it is striking to see that 78 per cent of the firms employ fewer than five employees, with 41 per cent employing only one staff member. In summary, the sampled Chinese firms are young, small, and private.

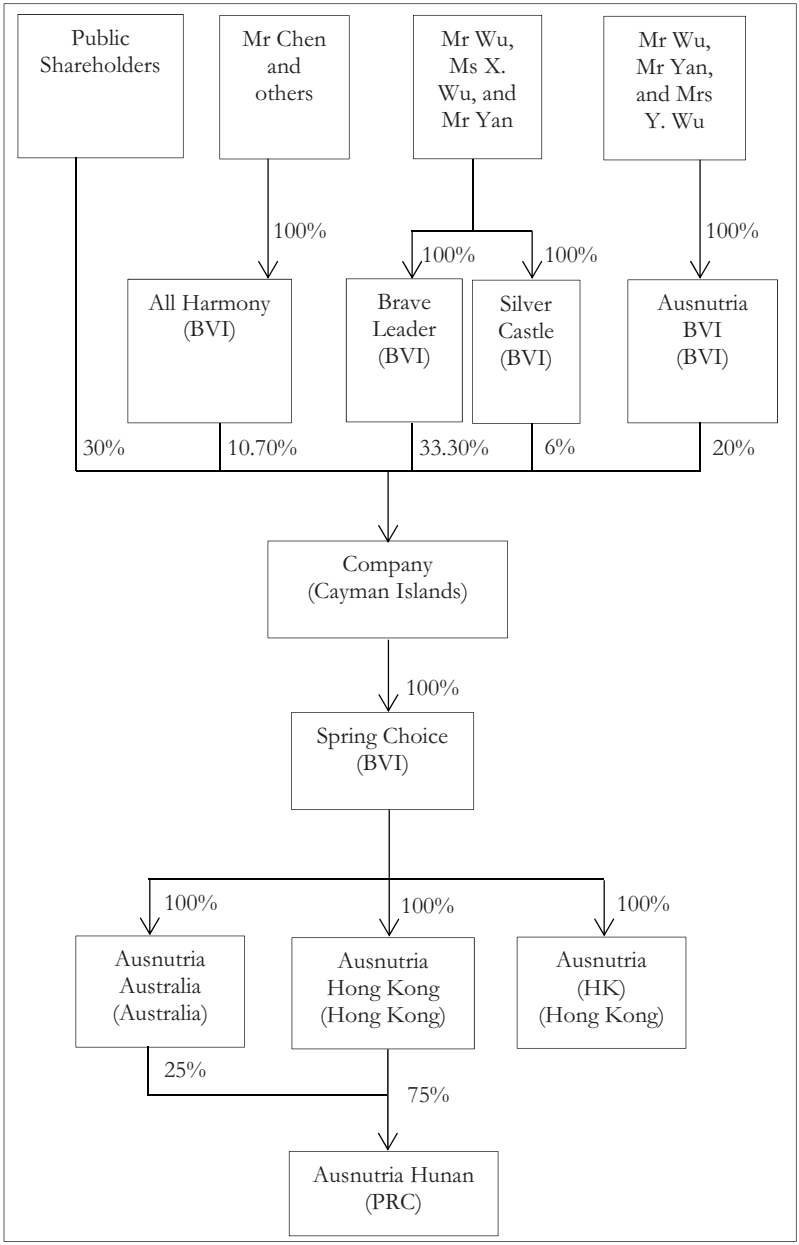
Secondly, we found regional and sectoral clustering in Chinese OFDI in the Netherlands. Around 50 per cent of the activities are located in the three largest cities of Rotterdam, Amsterdam (including Amstelveen, Schiphol, and Amsterdam Zuid-Oost), and The Hague. All these cities have a traditional overseas Chinese presence in the form of Chinatowns, indicating a cultural reason for such clustering. However, further communication with Dutch investment officials

suggests that this degree of large-city clustering is mostly related to the advantages of these locations in terms of logistics, access to financial services, and active investment policy. Moreover, Rotterdam and Amsterdam have branches of two large Chinese banks: the Bank of China in Rotterdam and ICBC in Amsterdam. Interestingly, based on the KVK classification, 50 per cent of activities are in wholesale and trading, 16 per cent in financial services, 11 per cent in manufacturing, and eight per cent in professional scientific and technical activities. Lastly, 60 per cent of these companies originate from five Chinese cities, namely Beijing, Shenzhen, Shanghai, Hangzhou, and Wenzhou.

Thirdly, of the 333 entities, 19 are incorporated as U.A. (*Uitgesloten Aansprakelijkheid*), a legal entity originally used by Dutch agricultural cooperatives, but in recent years mainly used as a tax-planning tool to minimise tax liabilities, especially by large Chinese firms. The OECD's efforts since the later years of the 1990s to combat tax evasion and its Harmful Tax Practices initiative to identify tax havens, has been well researched (Elsayyad and Konrad 2012). Many updated treaties between OECD countries have significantly raised the probability of detecting tax evasion and greatly improving tax collection (OECD 2011). Against the background of the declining importance of classical tax havens, the findings on the tax optimisation options used in the Netherlands are of interest and may deserve further study.

We illustrate our findings through a short case study on the infant milk formula company, Ausnutria. The example of Ausnutria shows the difficulties of correctly identifying Chinese companies within the databases in the Netherlands. In October 2011, Ausnutria (based in Changsha, Hunan province) acquired the Hyproca Dairy Group, which has over 100 years of history in Holland (Hyproca was founded in 1897 in Ommen). Although this seems to be an obvious case of a Chinese company taking over a Dutch company, the Chinese ownership of Hyproca does not show in any database (Orbis/Amadeus, KVK, and so on). The organisational chart given in Figure 2 shows why this is the case.

Figure 2. Organisational Structure of Ausnutria



Source: Ausnutria Dairy Corporation Ltd, n.d.: 102.

The "Company" refers to Ausnutria Dairy Corporation Ltd, which is a listed company in Hong Kong. This entity acquired a 51 per cent stake in Austria Hyproca BV, which was previously named Austria Hyproca Dairy Group BV and, according to the registration data, is also known as Hyproca Dairy Group. As the listed company, which has to disclose information, is majority controlled by Virgin Islands shareholders, its Chinese roots cannot be traced. Virgin Islands registered companies are not required to make public information about shareholders. This example shows the importance of correctly identifying and linking the ownership in country-level databases. As 36 companies were excluded from the KVK database due to this data issue, it has a significant impact on data quality and may affect the outcomes of research that relies on the database without first checking or cleaning up the data.

Discussion

In this study, we assessed the quality and features of current Chinese OFDI data. In particular, we focused on the predominantly-used Orbis/Amadeus database and analysed actual Chinese investments in the Netherlands, but only after making six essential adjustments in order to increase the accuracy of the dataset used. Our research shows that the data on mainland Chinese companies available from public sources can be unreliable. In the present study, only after detailed analysis at the firm level could a complete picture of Chinese OFDI in the Netherlands be obtained. In reply to the fourth research question regarding the impact of possible data quality issues, we show that the possible impact of data issues can be significant. Two specific examples from esteemed journals (with ABS ratings of 2 and 3) were analysed to show that it is likely that deficiencies in the Orbis/Amadeus data (caused by issues at the source, in other words, the KVK) may have affected the outcome of research:

The first example concerns a study in the journal *International Business Review* (ABS ranking 3) of the productivity of foreign affiliates of emerging market multinationals (EMNEs) in Europe (Sanfilippo 2015). The article uses the Orbis/Amadeus database, which included, at the time of analysis, 2,013 European affiliates of BRICS EMNEs. More than half of the foreign affiliates were reported as being located in the United Kingdom, the Netherlands, and Germany. Chinese

affiliates accounted for about 17 per cent. Considering the importance of the Netherlands in the database and the significant number of errors and omissions regarding Chinese firms in the source data, we believe that data issues may have had a significant impact on the results presented. Specifically, the article aimed to analyse mainland China as an emerging economy and part of the BRICS, so will have taken steps to exclude Taiwan from the database search. However, in line with our findings in the section "An Erroneous China Link in Orbis/Amadeus," as many as 114 Taiwan firms would have remained in the sample (assuming that the research was conducted on the same date as this study). The inclusion of Taiwan companies (114 of the 402 "Chinese companies" shown in Orbis/Amadeus in our study), which belong to a developed economy, in the sample may have overstated the level of productivity of "mainland Chinese companies" in the sample and thereby underestimated the productivity gap.

The second example in the *European Management Journal* (ABS ranking 2) examines how EMNEs use OFDI in developed markets to secure knowledge spillovers to improve domestic technology capabilities (Chen, Li, and Shapiro 2012). The article uses a panel dataset of 493 EMNE parent companies from 2000 to 2008. With 62 per cent of the EMNE parents in the database reported as investing in Germany, the Netherlands, the United Kingdom, and the United States, the data from the Netherlands is significant to the study. The final emerging markets list in the study includes 57 economies, including China and Taiwan, therefore the issue of finding "An Erroneous China Link in Orbis/Amadeus" will not have had an impact on data quality. However, the "Missing China Link" data issue identified in the current study would have excluded 36 affiliates of Chinese companies with intermediary parents in tax havens such as the Virgin Islands (assuming that the research was done on the same date as this study). These missing companies tend to be large Chinese state-owned enterprises with significant R&D spending and should have been included in the article's sample of knowledge-seeking entities. Thus, we believe that the omission of these SOEs due to problems with the data source may have affected the conclusions on the reverse spillover effects identified by Chen, Li, and Shapiro.

Conclusion

Based on our cleaned-up dataset, we found three patterns of Chinese OFDI in the Netherlands that warrant further investigation:

- Chinese companies in the Netherlands tend to be private, small, and young;
- they tend to cluster in three regions, come predominantly from five Chinese cities, and centre on wholesale and trading; and
- many large Chinese companies use tax-efficient structures for their overseas investments.

In an attempt to set a research agenda for future research on Chinese OFDI, we thus propose five directions. Firstly, as this paper has shown that data quality issues relating to Chinese OFDI may significantly affect the outcome of any research that relies on database information, we suggest that further research into the data quality of other EU nations is needed, as similar data quality issues may exist in those databases. More accurate source data ultimately results in better quality research, which in turn supports better-founded policy actions. Secondly, future research needs to study not only large Chinese companies and headline investments, but also needs to focus on the small and relatively young Chinese companies that move abroad. Our findings on actual Chinese investment (RQ3) in the Netherlands show that the Chinese companies are small in terms of the number of employees, but it is unclear how they are managed after entry. How do they build up human resource capability? To what extent do they localise their labour force and integrate into the host environment? These are just a few of the questions that demand further study. Thirdly, further research is needed on how clusters, either in the home or in the host country, influence the process of internationalisation and location decision-making in Chinese OFDI. In particular, anecdotal evidence suggests that Chinese firms tend to follow each other and that their foreign-location decisions seem to be influenced by the decisions of other nearby firms in the home country. Fourthly, although much attention has been paid to Chinese OFDI in the natural resources and technology sectors, our study shows that traditional industries, such as wholesale and trading, warrant further investigation too. Finally, our research shows that the Netherlands is considered to be an attractive location for Chinese companies that are planning tax structures for overseas investments. This is a recent phe-

nomenon, as we found that 14 of the 19 U.A. entities were set up after January 2010. As a result, the KVK data significantly overstate the actual investments of Chinese companies in the Netherlands. The assets held by these Chinese companies relate mainly to operations in other European countries rather than actual operational assets in the Netherlands. This insight also warrants further investigation to examine the effectiveness of related policy directives.

The presented data analysis shows that only a few Chinese companies have active operations in the Netherlands, suggesting that Chinese OFDI in Europe remains at an early stage. Given that per capita GDP in China is about USD 6,747 compared with USD 34,060 in the EU and USD 53,101 in the United States (IMF 2013), the Chinese economy has much room to grow and thus the upward OFDI trend is bound to continue. Further research should, therefore, take into account the limitations in current databases and consider the six data adjustments highlighted in this study. Moreover, we suggest that detailed firm-level analysis on actual Chinese investment is more relevant than the overall statistics. Considering the well-established reputation and long history of the Dutch Chamber of Commerce (KVK) in collecting data, we imagine that similar data issues, or worse, may be present in other European country-level databases as well.

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Contents

Assessing the Administration of President Ma Ying-jeou

Introduction

Research Articles

Analyses