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The drivers behind outward foreign direct investment in the Chinese telecommunication sector: A case-based analysis.

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Foreword

This thesis was motivated by my sincere interest in emerging economies the different management challenges rising from these economies. The mere fact that the world of management and especially the world of international management has changed so significantly since I started my studies, was a never ending motivation. Even though this interest had always been present, it was not until the first year of my master's degree that this interest really surfaced during a course called "European Economic Policy" at the Louvain School of Management. It can thus hardly be called a surprise that I was delighted that Professor Jean-Christophe Defraigne accepted to be my thesis promotor. I want to start by thanking him for the excellent support and trust that he has given me to throughout the year and a bit leading up to the completion of this thesis.

To continue I would like to thank all the other academics that have influenced me – and thus the content of this thesis - throughout my academic curriculum. Obviously the Louvain School of Management has played the most important role in this aspect, but I would not do justice to plenty of others by not naming them. I therefore want to thank all the professors that have taught, supported and challenged me at the KULeuven, The London School of Economics and Political Sciences and the Wharton School. I would like to express specific gratitude towards Professor Hyun Bang Shin at LSE for providing me with profound knowledge of various economic and non-economic aspects of China. A similar thanks I most certainly also owe to all of my Chinese friends that have never hesitated to help me out.

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Abbreviations

OFDI	Outward Foreign Direct Investment
MOFCOM	Ministry Of Commerce of the People's Republic of China
CAGR	Compound Annual Growth Rate
SAR	Special Administrative Region
SEZ	Special Economic Zone
FTZ	Free Trade Zone
MPT	Ministry of Post and Telecommunications
MII	Ministry of Information Industry
China Netcom	China Network Communications
China Railcom	China Railway Communications Corporation
PTO	Public Telecom Operator
NDRC	National Development and Reform Commission
SOE	State Owned Enterprise
MIIT	Ministry of Industry and Information Technology
CDB	China Development Bank
IPR	Intellectual Property Rights
TDIA	TD-SCDMA Industry Alliance
OS	Operating System
TGTIF	True Growth Telecommunications Infrastructure Fund
CMI	China Mobile International
UNCTAD	United Nations Conference on Trade and Development
ARPU	Average Return Per User
CFIUS	Committee of Foreign Investment in the Unites States
PLA	People's Liberation Army
BoC	Bank of Communications
EIBoC	Export Import Bank of China

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0. Introduction

The goal of this thesis is to investigate what is driving the Outward Foreign Direct Investment (OFDI) of Chinese telecommunication companies. In the following the outline of the thesis will be described, together with the respective goals of each part.

The topic of OFDI from emerging economies and particularly from China is very relevant given the recent developments. This relevance is clearly shown in the first part of this thesis, which will give a short but sufficient overview of China's impressive OFDI position and evolution. A short comparative study shows the specificity of the case of China, and the different forms of Chinese OFDI are briefly touched upon.

In order to allow for a focalized and detailed study, the analysis is narrowed down to the telecommunication industry. The reason for this choice is motivated both by academic as by popular motivations. One very important reason is obviously that very limited research has been conducted on the OFDI of China's telecommunication industry specifically. Next to this, the telecommunication industry and its OFDI represents a particularly interesting case because of the government involvement. Just as industries like the oil and the mineral industry, the telecommunication industry has been categorized amongst the "Strategic and Heavyweight industries" (Capital Trade Incorporated, 2009) by the Chinese government. These industries are require, amongst others, heavier monitoring in terms of their OFDI decisions (Salidjanova, 2011). Finally, the Chinese telecommunication industry is also a very relevant industry for a broader public, with companies such as ZTE and Huawei conquering the increasingly important handheld device market.

In the second part of the thesis, the telecommunication industry is briefly defined and the Chinese OFDI position in the Telecommunication industry is analyzed from an overview point of view to show its relevance. The second part of the thesis also describes some of the most relevant particularities of the Chinese telecommunication industry to allow the reader an informed view on the research conducted. First, an overview of the evolution of the sector domestically is given. Afterwards a short review of the Chinese government's policies on OFDI is

provided. Finally, a detailed analysis of China's telecommunication standard policy is given. The latter is done because the standards may or may not be of large importance in driving OFDI strategies, but also because it gives an appropriate idea of the extent to which the Chinese government influenced (and continues to influence) its domestic telecommunication companies.

After this introductory part on the Chinese telecommunication industry, the actual research part begins. The methodology is explained based on a review of the existing literature. During this part a framework is developed to analyze the drivers of OFDI for the Chinese telecommunication case.

In the fourth part of this thesis five carefully selected cases of Chinese telecommunication companies are presented: China Mobile, China Telecom, China Unicom, Huawei and ZTE. For each of these cases the domestic situation as well as the OFDI position is carefully evaluated. This approach has previously been used for similar research, such as Di Minin et al (2012)'s analysis of the foreign R&D investments of Chinese companies.

In the fifth part of this thesis the cases presented in part four are tested on the developed framework. Each aspect of the framework is carefully analyzed and respective conclusions are presented for each of these aspects. By testing all of the analyzed cases to the developed framework, patterns and surprising cases are exposed. It has to be mentioned that, given the very limited amount of cases at hand, it is not possible to draw any statistically significant conclusions from the analysis. The thesis is, however, a good starting point for future research (when e.g. more cases become available) by developing the framework, exploring the situation and exposing some preliminary conclusions.

In the final part of this thesis, conclusions and potential implications are presented. This section is concluded by an analysis of the limitations and the opportunities for further research on this largely underdeveloped area of research.

1. China's Outward Foreign Direct Investment

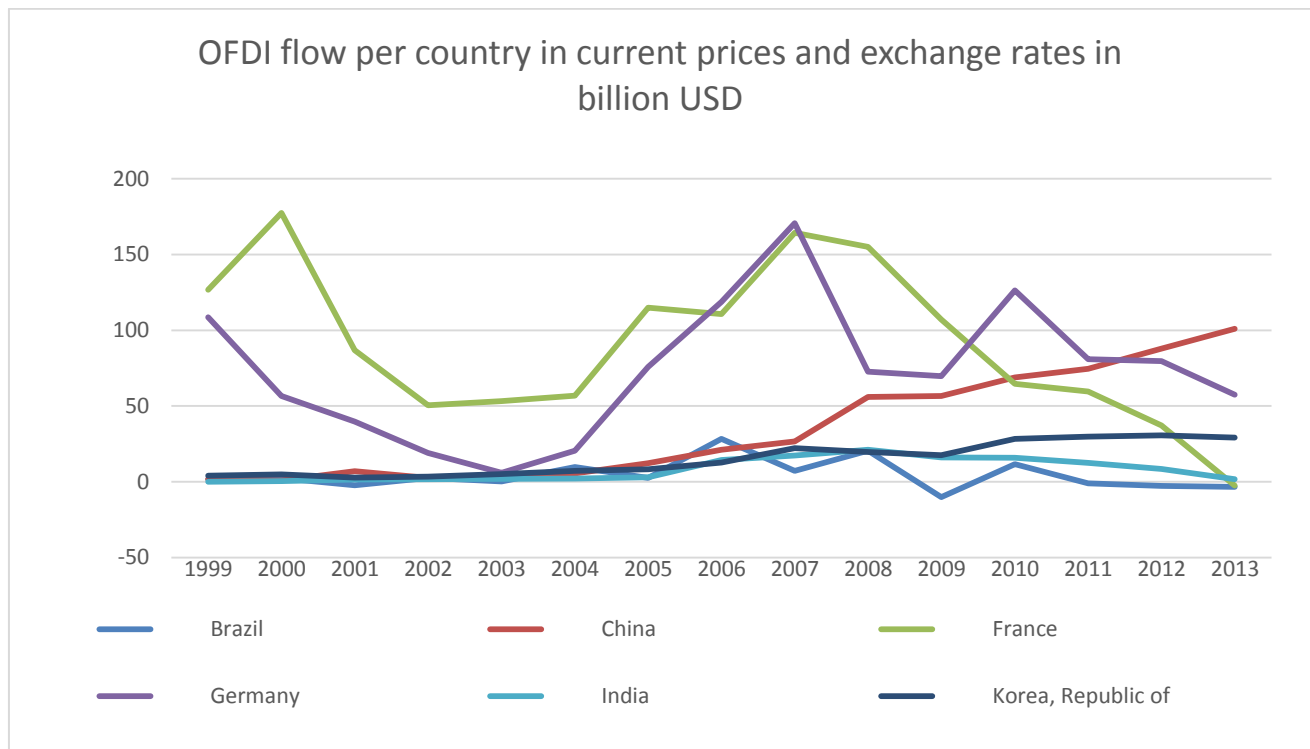
This thesis will start off by a brief introduction on China's current overall OFDI position and the evolution leading up to this position. The analysis will be executed by evaluating both OFDI flow and OFDI stock in comparison with other economies, both developed and developing. This early analysis is limited to the period starting from 2004, as before this point in time both China's OFDI stock as its OFDI flow were insignificant. It is especially over the last decade that a remarkable evolution has taken place, as will be shown in the following. The analysis will finally briefly touch upon the types of OFDI.

The analysis has been primarily based on the the UNCTAD FDI data instead of the Ministry Of Commerce's (MOFCOM) data. The most important reason for this choice is the fact that MOFCOM only accounts for FDI that has been officially approved by state authorities. It is widely accepted and argued by e.g. Amighini et al. (2014) that this leads to a certain underestimation of the actual situation for a variety of reasons. Examples of these reasons cited by Amighini et al. (2014) are the fact that reinvested earnings are not included in MOFCOM statistics and that the MOFCOM statistics do not account for round tripping (see *infra*). The choice of UNCTAD data for an aggregate analysis thus seems to be appropriate

1.1 China's OFDI flow over the last decade

Over the last decade China has shown a remarkable increase in its OFDI flow, with an approximate 43% ten year Compound Annual Growth Rate (CAGR). This led the country's annual investment abroad from an approximate \$3 billion in 2003 to just over \$100 billion in 2013. Over the last decade the impressive growth only slowed down slightly during the financial and economic crisis, but never became negative. This 10-year trend is well above the world average (~9% CAGR) and clearly beats developed economies such as the United States and the EU 28 (that experienced a respective CAGR of respectively ~10% and ~-2% over the same period). The trend is even more surprising when you compare it to developing countries such as India and Brazil, as they are often thought to be in a similar phase of development. Nevertheless both have been experiencing decreasing OFDI flows over the recent years, resulting in negative flows for Brazil during the period 2011-2013 (UNCTAD, 2014). In the graph below the rapid

growth of China in terms of OFDI flow becomes apparent. For clarity purposes the United States is not included because of its extremely high OFDI flow (~338 billion in 2012).



Source: UNCTAD (2014)

As impressive as the Chinese OFDI evolution may seem, when considering the data above, there are some remarks that are well worth mentioning. The first remark is that, even though Chinese OFDI has been growing at an incredible rate over the last decade or so, this growth started from a very low level. The impressive increase in OFDI flow has led to an approximate 7% share in the world's OFDI flows in 2013. This is still well below economies such as the US and the EU28 which had an approximate share of 24% and 18% respectively in 2013. These numbers show that China has not yet reached the level of foreign investment level it would be expected to have reached given the size of its economy. Nevertheless, China is the 3rd country worldwide in terms of OFDI flow, after the US and Japan in 2013 and the growth is expected to continue over the next years (UNCTAD, 2014).

A second remark to frame China's impressive OFDI evolution in an appropriate context is linked to the regional distribution of its investments. Over the 2003-2012 period (the last decade with

regional data available) China's FDI flows were mainly concentrated on Asia with on average around 65% of its flows directed to Asian countries. These figures are well below countries such as Germany (84% of investment to Europe). Japan and the United States, on the other hand, are far more diversified in terms of their OFDI destinations, with a maximum of respectively 29% and 51% of investments going to 1 continent. (UNCTAD, 2014)

One distortion may be that the geographical distribution of China's OFDI is actually much more global than it seems. The UNCTAD data used for this analysis are not recorded in the final destination of the investment, but rather in the countries the investment is first recorded in. It may thus very well be that the SAR of Hong Kong or the before mentioned tax havens are simply an intermediate stop for the real investment flow, as Clegg and Voss (2012) suggest. A first potential reason for this phenomenon may be, that these countries offer "professional services and institutional support unavailable in China" (Clegg and Voss, 2012: 16). The real Chinese OFDI flows to regions outside Asia may thus well be larger than an initial glance at the data suggests. China was providing 43% of Hong Kong's OFDI inflows and of Hong Kong's OFDI 46% was directed towards regions outside Asia. This is an indication that the so-called "onward-journeying" is a cause for serious underestimation of Chinese OFDI statistics in regions outside of Asia (Ning and Sutherland, 2012).

A second distortion coming forth from the use of Tax Havens and Hong Kong as intermediary destinations is related to the phenomenon of "round-tripping". After the announcement of its investment "Open Door Policy" in the late '70s, the Chinese government implemented a series of measures that aim to attract foreign investment. One of the most interesting of these measures is the installment of certain Special Economic Zones (SEZ) where foreign investors receive preferential treatment (amongst others certain tax benefits). These measures are far from phased out as the Shanghai Pilot Free Trade Zone (FTZ), which was launched in 2013, still offers a substantial preferential tax treatment if certain project conditions are met (Deloitte 2014). This preferential treatment to foreign investors incentivizes Chinese companies to mimic a foreign investor, which explains the phenomenon of round-tripping. The roundtrip phenomenon may well be the cause of a substantial distortion of official statistics, but disaggregated data would be necessary to investigate the issue further (Defraigne, 2005).

To conclude this short analysis of China's OFDI flows one could say that impressive evolutions have been made over the last decade. Nevertheless these evolutions started from a very low base and China's economic size would give reason to expect for even larger flows. Finally it is important to keep in mind that the available data may not represent the real investment flows due to phenomena such as round-tripping and onwards-journeying.

1.2 China's OFDI stock

Given that China has only been significantly generating OFDI flows over the last decade, an assessment of the current overall OFDI situation demands an analysis of China's OFDI stock. The stock position allows to frame the recent evolutions described above. The analysis is again executed in two steps: firstly the evolution over the last decade will be evaluated after which the regional distribution of OFDI stock will be investigated.

As already mentioned above, China started its impressive OFDI evolution over the last decade from a very humble base. In 2004 China's global OFDI stock amounted up to "only" around \$45 billion, or less than half of a percent of the worldwide OFDI stock at that time. A decade later China reached an OFDI stock of over ten times its 2004 level, now reaching around 2.5% of the worldwide OFDI stock. Clearly this is still well below economies such as the EU28 and the US (which account for respectively 40% and 24% of worldwide OFDI stock), but also well below countries such as Germany, France and the United Kingdom (which account for around 7% of OFDI stock). Given China's economic size one would expect a much larger investment position abroad. Even though these statistics are rapidly changing, this is another motivation to not overstate China's current OFDI position. (UNCTAD, 2014)

When the focus is then shifted to the geographical spread of China's OFDI stock in 2012, the conclusion that the lion's share of OFDI stock is located in Asia (67%) is far from surprising. Next in line are Latin America and the Caribbean (13%) and Europe (6%), which are China's next most popular OFDI destinations. As was the case for the outflows, China has a higher degree of globalization as Germany (which had around 75% of its OFDI stock in Europe), but is lagging behind countries such as the US and Japan in terms of geographical spread. It is important to keep in mind the remarks made on onwards-journeying and round-tripping made earlier in this

context as well. The reported investment stock distribution may thus well be different from the actual one. (UNCTAD, 2014)

1.3 Analysis of Chinese OFDI forms

To get a better understanding of the Chinese OFDI, it is interesting to get an initial understanding of the different ways Chinese companies engage in OFDI and their relative importance. Amighini et al. (2014) investigate this issue and consider three main types of OFDI: Greenfield Investment, Mergers & Acquisitions and minority investments. They use the EMENDATA firm level data from the period 2003-2011 to investigate the issue. In total they investigated 3020 OFDI deals. It is important to mention that the Amighini et al. (2014) analysis is conducted based on the number of deals and not on the value of the deals. The value of the deals may very well be an important factor for the analysis at hand, but nevertheless the analysis is sufficient for a brief introduction to the topic.

Amighini et al. (2014) found that of the 3020 deals, the vast majority were greenfield investments (~70%), with only smaller shares for M&A and minority stake deals (respectively ~20% and ~10%). The number of greenfield investments in the study is also growing at a significantly faster rate than the other two categories. The authors mention the “go global” policy as one of the main drivers behind this trend. This policy is the first policy specifically focused on stimulating OFDI for private firms (Luo et al., 2010), who are more likely to use “wholly owned subsidiaries rather than M&A” (Amighini et al. ,2014: 52).

When the focus is now shifted towards the geographical distribution, greenfield investment continues to dominate the picture. The balance is somewhat different however, depending on the location. Europe, Africa and Latin America are clearly the main drivers behind this share of greenfield investments with respectively ~87%, 88% and ~83% of the deals being greenfield. Asia and the US display a slightly less dominant position of greenfield investment with respectively ~64% and ~62% of deals being greenfield investment deals (Amighini et al. ,2014).

2. Introductory analysis of China's telecommunication industry

For the remaining of this thesis the telecommunication industry is defined very broadly, in particular because more and more companies are engaging in all different aspects that can be related to telecommunication. As the analysis is based on company-wide case studies, all different areas of OFDI need to be investigated. Investigated investments will thus include, amongst others, infrastructure investments (e.g. networks), investments in plants to build telecommunication devices (e.g. mobile phones) and investments related to external relations/sales. For some parts of the thesis the distinction will be made between network providers and telecommunication equipment providers. The first are the companies that provide network services (potentially through proprietary network infrastructure). The latter are companies providing devices to build, improve and use these networks. It has to be mentioned that the distinction is not set in stone and that companies may actually play their role in both sub-sectors (see *infra*).

To start off this first more specific chapter, it is important to show the relevance of the topic to justify the choice to have a more thorough look at the telecommunication industry. By no means the goal of this paragraph is an exhaustive list of factors rendering the topic relevant. The relevance will sufficiently be shown in the main body of the thesis. Clegg and Voss's (2012) paper on China's OFDI towards Europe mentions a shift in recent years of Chinese OFDI to "liberalized infrastructure sectors such as telecommunications equipment" (Clegg and Voss, 2012: 31). This liberalization is often influenced by both European Commission competition considerations and austerity requirements following the rescue packages related to the recent financial and economic crisis. Especially the GIPS (Greece, Italy, Portugal and Spain) countries are heavily affected and are thus attractive targets for this kind of OFDI (Busch et al., 2013). Similar liberalization efforts have taken place on the African continent (Daouda, 2012), but the relevance for the subject is far from limited to Europe and Africa as (attempted) investments have been registered on all continents.

To continue, a broad overview is given of the Chinese telecommunication industry's OFDI position. As no disaggregate data for the telecommunication sector on OFDI is published, an

analysis of The Heritage Foundation & American Enterprise Institute (2014) is used: the China Global Investment Tracker. This is a list of Chinese investments abroad that are larger in value than \$100 million. This approach is clearly not optimal but it allows to investigate the order magnitude of the Chinese telecommunication investment abroad and it allows to identify the most important players in terms of telecommunication OFDI. For a set of the investigated investments, please refer to **Exhibit 1**. In a following chapter a more qualitative analysis based on certain specifically chosen case studies will be executed. The Heritage Foundation & American Enterprise Institute (2014) found 18 telecommunication investments larger than \$100 million during the period 2005-2014. In total these investments amounted up to no less than \$10.38 billion.

It is once again important to consider that a large number of telecommunication investments is not included. The total amount of Chinese companies' telecommunication investment will thus be significantly higher than the above mentioned number.

Another study executed by Milelli and Sindzingre (2014) investigates the sectorial division of Chinese foreign direct investment in Europe through a proprietary database of investments. According to them, in 2002 the telecommunication sector accounted for 7% of Chinese FDI in Europe, behind the transport sector (43%) and the equipment sector (18%) and on a tie with the banking sector. Ten years later, in 2012, Milelli and Sindzingre (2014) report an 11% share for the telecommunication sector. This ranks the sector third behind the equipment and automotive sector (respectively 29% and 13%). This growth in importance is particularly remarkable given the high growth in Chinese OFDI on an aggregate basis (see supra).

This introductory analysis clearly shows the important of the Chinese telecommunication industry and its involvement in OFDI. In the following a deep-dive will be performed on some particularities of the industry to fully understand the main body of the thesis.

2.1 China's telecommunication sector's particular domestic development

When considering the drivers behind Chinese OFDI in the telecommunication industry, it is important to first establish a general knowledge on the Chinese domestic market. In the following a short historical overview is given of the telecommunication market in China. This

analysis will be focused on the network providers, rather than the telecommunication equipment providers. This choice is made because it presents an excellent showcase for the degree of government intervention in the telecommunication market.

During the post-world war era, China has long known a monopolist structure in the telecommunication market. The monopoly player was the “operating arm” of the Ministry of Post and Telecommunications (MPT) (Loo, 2004). In 1994, when the government realized that the sector could be turned into a profitable source of income (Fu and Mou, 2010), the decision was made that competition was necessary to ensure efficiency. The result was a small competitor, named Unicom. In 1998 the Ministry of Information Industry (MII) was established to replace the MPT. The MII could no longer intervene operationally in the market and, step-by-step, the level of competition rose. China Telecom was split geographically in China Telecom and China Network Communications (China Netcom) and it spun off its mobile business as China Mobile. Together with China Railway Communications Corporation (China Railcom), there were five major Public Telecom Operators (PTO) in 2001, all of which were State Owned Enterprises (SOE).

After these measures introduced more competition, the government announced in 2008 several mergers which led to three major players in the network provider market: China Telecom, China Unicom and China Mobile. These companies also remained fully owned by the government. For the details and the reasons for these mergers the reader can refer to Fu and Mou (2010). A final consequence of the 2008 reform was that the MII merged into the Ministry of Industry and Information Technology (MIIT) as one of its departments. The MIIT has, amongst others, a regulatory function in the manufacturing industries, including the defense related industries (Xia, 2011).

It is important to recognize that all of these measures leading up to the current situation in the network provider landscape are greatly influenced by the government. The government has intervened over the last decades by not only changing the rules of the game, but also by playing the game. This government intervention will be a constant throughout the remaining of this thesis.

2.2 China's particular OFDI policy

As well as on the domestic market, China's OFDI activities have always been very much influenced by government intervention. Where in the earlier post-reform years OFDI was simply forbidden, it is now even actively being supported. Sauvart and Chen (2014) express the evolution very well in their recent work on the regulatory environment: "from restricting, to facilitating, to supporting, to encouraging OFDI" (Sauvart and Chen, 2014: 141). Nevertheless the OFDI regulatory environment is far from perfectly supportive at this moment and in the following a short overview of the policies most important for this thesis will be given.

Currently every non-financial Chinese entity is allowed to invest abroad, some obvious exceptions such as deals endangering national security left aside. A first necessary requirement is the approval by the National Development and Reform Commission (NDRC) and the MOFCOM. Depending on the size and nature of the company this can take more than a month. Sauvart and Chen (2014) argue that having two of these approval entities is problematic as it increases costs for investors through delays and bureaucracy. It is also argued that the increased amount of OFDI has made it impossible for the authorities to investigate each case. Smaller firms are now known to invest abroad without passing through the formal approval process (Sauvart and Chen, 2014). There may certainly be a restrictive influence originating from this approval process.

The Chinese government's policies do not only have restrictive consequences, though. Luo et al. (2010) mention a wide variety of home country government interventions that may stimulate OFDI. Through its 12th Five-year plan, the Chinese Communist Party confirmed its support to "selected" Chinese companies to expand abroad. Probably the most important government support companies receive in their efforts to expand abroad, is in the form of financial services. An example of this is that institutions like the Bank of China and China Development Bank (CDB) are offering a wide variety of financial services aimed at Chinese companies investing abroad (IBM, 2006). Another good example of this recent government support are the favorable financing companies receive to invest abroad in the form of low-interest loans or credit lines (IBM, 2006). This support is not only limited to SOE's, as Huawei has received these preferential treatments as well (see *infra*), but clearly seems to favor some companies over others.

In conclusion, the Chinese government's policy in terms of OFDI has changed significantly over the last few decades towards a more supportive policy. There are still some important barriers in place though, and support is not distributed equally over all companies.

2.3 China's particular Standard Policy

The Chinese telecommunication sector has some specificities in terms of mobile standards and their diffusion as well. This standard setting may be of particular interest for the OFDI policy, as it can influence OFDI based on compatibility with standards used abroad. According to Vialle et al (2012: 832), "the process of diffusion of standards and competition between standards is susceptible to initial conditions and is path dependent". When considering 2G and 3G standards and the potential transformation to 4G standards in China, both are important. The first is of particular interest in China because the initial conditions were completely determined by the government controlled MIIT. The latter is interesting as well as China was rather late in developing their policy on 3G standards and because of the frequent intervention of the government in the different steps along the path.

Vialle et al. (2012) also mention 3 main characteristics related to standards setting of the Chinese telecommunication industry that require specific attention. First of all, China tries to catch up in the technological sense, being a latecomer in comparison with developed economies. They also mention China's objective to reduce Intellectual Property Right (IPR) issues with other countries. Secondly, China's impressive market size allows policies that other countries could not afford to engage in. As a third specificity they mention the large extent of government control in the Chinese telecommunication sector. All three will be of great importance in the in-depth analysis of our case studies.

The geographical adoption is obviously of great importance in the choice of standards as well, and of particularly large importance for OFDI. Choosing a standard with limited global presence may hamper international expansion (Vialle et al 2012). If China were to choose this road, this could mean that Chinese telecommunication device manufacturers would only be able to sell in China, or at the very least will benefit less from economies of scale when selling abroad. At the other side of the spectrum is the choice for a globally accepted standard. This would clearly

facilitate international expansion, but also limit policy tools for protection of the domestic economy.

Before continuing to analyze the currently prevailing standards and the competition between them, it is important to realize that the choice of legacy standards greatly influences the choice of succeeding ones. Vialle et al (2012) mention two main reasons. Firstly, for some standards, the players will be able to reuse parts of their installed infrastructure and other fixed assets. Secondly, the transition between standards typically occurs only gradually. As telecommunication players need to be able to provide both old and new services at the same time, only certain standard choices are feasible.

The first important telecommunication standards in China were the 2G standards. The chosen standard was GSM which was introduced in 1994 by China Unicom and in 1995 by China Mobile. As most of the GSM technologies were patented (Fairfield Resources International, 2007) IPR contributions were a very important expense in the production process of hardware. This obviously limited the domestic producers' competitiveness, and incentivized China Unicom to deploy a CDMA network. The GSM standard remained far more common than the CDMA one, especially because of delayed introduction of the latter (Vialle et al, 2012).

In their 3G policy, the Chinese government chose to adopt an approach of developing their own standard, called TD-SCDMA, as opposed to the ones widely adopted internationally, CDMA2000 (adopted in e.g. in North-America) and W-CDMA (adopted e.g. in Europe and Japan). The TD-SCDMA standard is equally compatible to the prevailing GSM network as the other two mentioned options. As already stated above, IPR expenses were significant while using the GSM technology. The approach of developing their own standard was adopted to protect the domestic industry (e.g. for network devices and handheld sets) and to support the development of innovation capabilities (Vialle et al, 2012).

In 2002, the TD-SCDMA Industry Alliance (TDIA) was created, which had as its main goal to promote the use of TD-SCDMA and to promote the development of devices using TD-SCDMA (Chen et al., 2014). Also in 2002 the 3G frequency spectrum was divided, allocating around half of the spectrum to TD-SCDMA, leaving the other half for W-CDMA and CDMA2000 (depending

on the source just over half or just under half: Respectively Vialle et al., 2012 and Chen et al., 2014). The distribution of 3G licensing was delayed up until the point that the TD-SCDMA standard was entirely ready. The players in the telecommunication industry were not too happy about this choice, as can for example be seen through the fact that China Mobile developed a W-CDMA network without permission, even before the allocation of the spectrum (Vialle et al., 2012). This timeline clearly shows that the government aggressively tried to impose the domestically developed standard, which was certainly not welcomed by all players in the telecommunication market.

The degree to which TD-SCDMA has been adopted in China is impressive. After earlier extensive testing, China Mobile launched a TD-SCDMA service in early 2009 (Chen et al., 2014). By the end of 2011, around 800 thousand 3G base stations were deployed, of which only some over a quarter were TD-SCDMA base stations (Hui et al., 2012). By mid-2014 this number increased to around 450 thousand (Chen et al., 2014). The number of TD-SCDMA users amounted up to 230 million by April 2014, which represented just under 50% of the 3G users.

The more recent trend is the one towards 4G standards. China decided to continue its policy of promoting a domestically developed standard with the TD-LTE standard. At the end of 2013 the Chinese government granted TD-LTE licenses to the three largest domestic players: China Mobile, China Telecom and China Unicom (Chen et al., 2014). Only in early 2015, the Chinese government granted full FD-LTE licenses to China Telecom and China Unicom (see *infra*). This is another clear example of the Chinese government promoting the domestically developed standard.

It has been said that the TD-LTE standard is developing at the same pace as its counterparts (e.g. the FD-LTE), where there had been an eight year delay during the development of TD-SCDMA (Chen et al., 2014). Other important differences with the 3G standard development are that, for 4G, the domestically developed standard is the only one used on a widespread scale in the large Chinese market and that TD-LTE is not compatible with the W-CDMA and CDMA2000 technologies (Forbes, 2014: c). These differences between 3G and 4G standard development in China will be of key importance for the good understanding of our case studies. This is especially

the case since China's 4G subscribers are approaching the 100 million by now, with China Mobile dominating (Perez, 2015).

3. Methodology

3.1 Research methodology

As already stated in the introduction, the main research part of this thesis will be based on five case studies. The choice for this case-study based approach is justified because of the relatively limited amount of cases available and the relatively little amount of data available for most of these cases. The choice of the cases is based on the size of their operations and the importance of their respective positions abroad. This choice method will not allow for any statistically relevant conclusions, but it will nevertheless allow to discover important patterns and sketch a good overview of the largest players. Such a disaggregated firm-based approach also severely limits the problems related to round-tripping and onwards-journeying briefly touched upon above as it allows to investigate each investment in depth for its characteristics and important information.

For the case studies a two-phased approach will be adopted. First the domestic competitive situation will be investigated. In a second phase the situation abroad will be investigated by conducting an in-depth analysis of each player's investments abroad. In this section an overview of investments abroad is presented, together with any relevant characteristics that will assist in the actual analysis. The true destination of OFDI is used, without taking into account any intermediary destinations or artificial structures.

Data on these two phases of the case studies are exclusively secondary and this choice was made for a variety of reasons, beautifully described in Saunders et al. (2009: 268-272). The main one of these reasons is that it allows for a longitudinal analysis. The latter is imperative as the limited cases of Chinese telecommunication OFDI necessitates a longer analysis period. The data are collected from a variety of sources such as academic journals, specialized press, corporate reports, research reports and corporate press releases. For all data collected, triangulation between different types of sources is executed to ensure their validity.

3.2 Literature review and framework development.

In this second part of this methodology section the existing literature is reviewed, starting from a broader perspective, narrowing down to the specific research topic of this thesis. Much work

has been done on motives and drivers behind OFDI. First the literature on domestic and internal characteristics is reviewed, after which the literature on the host environment's influence is investigated. Both literatures mention the importance of an analysis on the micro/firm-level as well as on the macro/market-level. The distinction between both is made because the first is not investment-specific, while the latter is investment-specific. During this literature review a framework for the analysis will be developed. A visual illustration of this framework can be found in **exhibit 2**. During the actual analysis phase (Section 5), each subsection will start from a more theoretical point of view, with a further review of the literature on each specific point of the framework developed below. In no way the literature reviewed below should thus be seen as the only literature reviewed, but rather as a way to structure the analysis phase where the literature is reviewed in a more focalized manner.

As a start, it is important to properly acknowledge the difference between OFDI from emerging economies and OFDI from developed economies. Mathews (2006) defines firms from the developing economies as "latecomers", and shows that they are very distinct in three main ways. Firstly their entry in the host region is often much more rapid. Secondly, these latecomers often take a wide variety of organizational forms. Finally, they tend to look for innovative ways to claim their place in markets already crowded by firms from developed economies. Lu et al. (2010) also argue that there is a difference in motives between developed economy OFDI and emerging economy OFDI. It is argued that the main difference is that, while developed economy firms are able to exploit the competitive advantages they have at home, emerging economy firms need to adapt their strategies more in order to acquire new resources (Lu et al., 2010). Mihailova and Panibratov (2012) also argue that, even when having similar institutional home environments, emerging economy firms' internationalization strategies may vary greatly.

3.2.1 Domestic and firm-specific characteristics

When the focus is now shifted to the OFDI from these emerging economies, it has been argued that sector-specific characteristics such as "market, capital, technology, and infrastructure requirements" (Mihailova and Panibratov, 2012: 162) greatly influence emerging market firms' internationalization strategies. This is an argument to say that our case-based research of the telecommunication sector will reveal some patterns. It might seem that there is no need to

analyze this factor, but I would like to argue that the chosen sample contains cases of companies operating in two somewhat different sectors. While China Mobile, China Unicom and China Telecom operate in the network provider sector, Huawei and ZTE are active in the telecommunication equipment sector. Even though both sectors certainly share some similarities, they have some specificities as well. The latter can for example be seen through the fact that the network operators often engage in contracts with the equipment providers.

A second factor Mihailova and Panibratov (2012) deem important in influencing emerging economy firms' OFDI strategies, is the domestic institutional environment and the influence of the state. As will be shown later on, the Chinese state has had a large amount of influence in all of our cases, but this influence has not been equally beneficial for all cases (see *infra*). This may give lead to some differences in internationalization strategies.

A final important determinant of internationalization strategies they cite are the firm-level resources and capabilities. They also mention that this final influence is mainly a determinant of "the success and the scale" (Mihailova and Panibratov, 2012: 164) of the OFDI and not necessarily a factor determining whether or not a firm engages in OFDI. This three-aspect framework is very much in line with the view of Yamakawa et al. (2008) on drivers behind Chinese firms OFDI in developed countries. I do believe, however that this threefold analysis should not be limited to investments towards developed economies.

When considering the Chinese case specifically, Wang et al. (2012: a) agree with Mihailova and Panibratov's (2012) conclusions that the government plays an important role in determining the level of Chinese firms' OFDI. They state that government ownership positively influences the OFDI level. On the other hand they deny that firm-specific resources and capabilities (e.g. R&D, advertising) are of significant influence. They mention that this does not mean they cannot be important, simply that Chinese firms are not differentiating themselves through these resources and capabilities at the moment. Finally, they seem to agree that there are some sectorial influences at stake as well and state that "in the case of Chinese firms, OFDI is largely driven by industry-specific idiosyncratic factors" (Wang et al, 2012: a: 434). In an IBM report (IBM, 2006) domestic competition is also cited as the third motive for Chinese companies to invest abroad.

This makes it appropriate to investigate this aspect as well when taking into account the companies' sectors. It therefore seems to be a good approach to use Mihailova and Panibratov's framework to investigate the domestic and internal aspects driving Chinese OFDI strategies.

3.2.2 Host environment characteristics

It would be a mistake to only look at the firm from an internal and domestic perspective, without considering the external, host environment. Lu et al. (2010) even use the above mentioned three-aspect analysis to come up with specific motives. It has also often been cited that the motives for Chinese companies' OFDI do not differ significantly from the OFDI waves that have been witnessed before from other regions and countries (e.g. Milelli and Sindzingre, 2014).

A first motive that has often been cited is the market seeking motive. Fontagné and Py (2013) show that market size and market potential are important determinants of Chinese companies' choice of a host country and even conclude that this is the most determining factor.

A second motive that has often been cited is the strategic asset seeking motive. Examples of strategic assets that can be sought after through investment are, for example, distribution networks, technical knowledge, managerial knowhow,... A study on OFDI in Europe (Nicolas, 2009) shows that Chinese firms tend to favor OFDI in host countries which are particularly strong in their area of work. They also say that this is evidence for the strategic asset seeking motive. I nevertheless want to mention that this host country's particular strength may also be the consequence of a strong market (potential), which attracts strong firms. In this case Chinese firms may be more attracted by this same strong market (potential) instead of by the strategic assets present.

A third motive for OFDI is the "raw material seeking" one. It has been noted that this motive has played a very important role, not in the least to acquire natural resources (e.g. Defraigne, 2014; Lemoine 2013). Since this is not of direct importance for the telecommunication case at hand, this aspect will not be thoroughly investigated.

Finally, UNCTAD (1998) mentions a fourth motive which is efficiency seeking. In certain industries, such as for example the textile and clothing industry, the efficiency seeking motive has already played an important role in influencing OFDI strategies (e.g. Li, 2014). It has to be mentioned, though, that other motives may be involved here, such as tariff exemptions for producing in developing countries (Li, 2014). With wages rising in China, this last motive may be more and more important in the coming years. The analysis will thus look for proof for market-seeking, strategic asset-seeking and efficiency seeking motives.

When investigating these motives, it is necessary to also look at facilitating factors or factors that trigger the investment in the specific host environments. These factors cannot be seen as main motives on themselves, but may be determining in decisions such as “where to go”. Something that has often been mentioned is host country policy environment and target company/country (financial) situation. Clegg and Voss, for example (2012) mention the economic and financial crisis of the recent years in this respect. Another factor that is of importance, particularly in China, is the overall country strategy. Some services may be necessary for other companies to engage in OFDI, or a certain OFDI deal may facilitate another, completely unrelated one. In this aspect, not only should economic considerations be taken into account, but also political ones. The influence of the Chinese government on the companies investigated in our cases justifies the investigation of this factor as well.

This short literature overview shows that some research has already been conducted on Chinese OFDI and the resources/capabilities and motives that are driving this OFDI. To my knowledge, however, no research has been conducted on the Chinese telecommunication sector specifically. The analysis presented in this thesis will – for each case – give an overview of the importance of each of the framework’s aspects.

4. Case Studies

In this section the results of the conducted research are presented in the form of five case studies of three telecommunication network providers (China Mobile, China Telecom and China Unicom) and two telecommunication equipment manufacturers (Huawei and ZTE). Each of the cases starts off by an analysis of their domestic situation and how this situation originated. After this part the OFDI situation is examined by focusing on some of the more relevant investments for this thesis.

4.1 China Mobile

4.1.1. China Mobile's domestic situation

As the mobile branch of the original China Telecom, China mobile has now become the largest Chinese telecommunication player. With a customer base of over 790 million customers at the end of June 2014 (The world's largest subscriber base in the industry according to Marketline (2014)), they realized over \$100 billion in revenue during financial year 2013. This amount is expected to grow to around \$108 billion by 2015. (Financial Times, 2015) They have also been selected for the "BRANDZ™ Top 100 Most Powerful Brands" by Millward Brown and Financial Times for 9 years in a row, ranking 15th worldwide in 2014 (China Mobile Limited, 2014: b).

Before the 2008 Chinese telecommunication reform, China Mobile extracted roughly 2/3 of the domestic industry profits (Xia, 2011) and it maintained this share at least until the end of 2009. For this analysis only the three large network providers China Mobile, China Telecom and China Unicom were taken into consideration. After 2009, China Mobile's domestic market share declined. This is mostly because it has had considerable troubles in converting its well established 2G customer base into 3G customers. Nevertheless China Mobile remains the most important domestic player with a 62.1% market share (Marketline, 2014). China Mobile is mostly present in the mobile segment, as it was only allowed to engage in fixed-line services in December 2013 (Marketline, 2014).

Throughout the recent years China Mobile has encountered some serious challenges. One example of these challenges is related to the diffusion of the domestically developed 3G standard TD-SCDMA. China mobile engaged in massive investments to support the TD-SCDMA

standard. One example is the 600 million yuan investment in developing the handset value chain. China Mobile even launched its own handheld device with a proprietary Operating System (OS), the OPhone, at the end of August 2009. The OPhone was never a big success and reached just over 300 thousand sales by the end of the third quarter of 2010, well-below the envisaged targets (Vialle et al, 2012). Next to the domestically developed handsets, some high-end international phones , such as the Samsung Galaxy S2, were being offered compatible with the Chinese domestic standards. A big thorn in China Mobile's eye was that an agreement with Apple on adopting the TD-SCDMA standard was not reached until January 2014, when China Mobile started offering Iphones as well. This would show to be very important, as China Unicom benefited greatly from such an agreement (see *infra*).

A final example of challenges faced by china Mobile is related to its massive investment in WiFi hotspots. The company spent roughly \$2.75 billion to develop 4.3 million hotspots over the country, but has stated that they will abandon the program and focus all their attention on the 4G program. The reason for this action is that wireless internet is not profitable enough. (Chirgwin, 2014)

Ironically it was the reason that caused most problems for China Mobile before, that is now seen as its main competitive advantage for the future (e.g. Marketline, 2014). The fact that the – in China prevalent - TD-LTE 4G standard is compatible with their fully developed TD-SCDMA network is likely to give them an edge over their competitors in the years to come. This is the case because the Chinese government has favored the domestically TD-LTE standard over the more globally accepted FD-LTE one by licensing the first one over a year before the latter one (December 2013 vs Early 2015, see *supra*).

To conclude this part on China Mobile's domestic situation, it is clear that over the recent years some challenges arose. Nevertheless China Mobile has remained the dominant domestic player in the network provision sector, and its legacy networks award it an important competitive edge for the future.

4.1.2 China Mobile's OFDI position

It could be expected that a company the size of China Mobile would be an aggressive investor abroad. Reasons could be the intensifying competition on an increasingly saturated domestic market or the huge cash reserves China Mobile has built up over the year (\$73 billion on June 28 2014 according to Krause (2014)). In the following China Mobile's OFDI position will be investigated.

In 2007, China Mobile made its first large international move by acquiring 100% of Pakistani company Paktel, through a two-phased investment of approximately \$460 million (The Heritage Foundation & American Enterprise Institute, 2014). The previous owners were Millicom International Cellular Pakistan. Paktel was at the time the fifth mobile company in Pakistan (Morning Whistle, 2013), with a market share of around 2% (Global Telecom Business, 2009). The acquisition can thus hardly be called a very aggressive entry into the Pakistani market. Announcements were made on an aggressive continued investment of \$800 million in 2008 (Global Telecoms Business, 2009), but these do not seem to have been as timely and as large as anticipated. Even though some investment in early stages had clearly been made, success seemed to be rather limited at first, with CMPak (the company's new name) staying in fifth place up until early 2012 (China Business News, 2012). This failure to perform according to the expectations has been cited to be a consequence of "China Mobile's failure on foreign soil without state support" (Morning Whistle, 2013).

More recently, after the company's name was once again changed to Zong, the subsidiary seems to have taken off. In 2014 it progressed to third place in terms of subscriber base with approximately 25 million subscribers (18% market share). At this time Zong was only preceded by Telenor Pakistan (26% market share) and Mobilink (28% market share) (Baloch, 2014). Recently Zong acquired a 3G and 4G license, making it the first 3G and 4G provider in Pakistan (Peng, 2014). Interestingly Zong will operate a W-CDMA network and not the TD-SCDMA standard used by China Mobile in China. It has been said that a further \$1.5 Billion investment is planned to develop the 4G network (UNCTAD, 2014). In conclusion China Mobile's acquisition was not very successful at first, but improved significantly more recently. The future looks rather bright as well, because of the 4G advantage Zong will have over its competitors.

After these investments in Pakistan, it became rather silent for China Mobile on the international playing field. It was not until seven years later, in 2014, that China Mobile acquired an 18% stake in the Thailand-based True Corp for approximately \$880 million, which is “Thailand’s only fully-integrated, nationwide telecommunications provider” (Marketline, 2014: 6). True Corp had for some time been looking for new funds, which can be seen through its launch of True Growth Telecommunications Infrastructure Fund (TGTIF). These funds would be used to pay off the enormous debts it had built up over the years, which led to a 71% drop in interest expenses year on year (Ono, 2015). By selling off its infrastructure network, it raised \$1,8 billion (Venkat, 2014), and the China Mobile investment was the final measure to raise funds. It is also to be noted that the investment was only three weeks after the military coup d’état, which China Mobile failed to mention in any statements (China Business Review, 2014). At a time when foreign investors could be expected to be rather reluctant to invest, China Mobile showed up.

At the time of the investment, True Corp was Thailand’s third mobile company and the first to deploy a 4G network. A strategic partnership deal was signed in the months following the investment, and the main goal for China Mobile Limited seemed to be to assure continued growth in subscribers. This is expressed by Shen Weizong (VP China Mobile Limited International) - as cited in a True Corporation PCL (True Corporation PCL, 2015) press release - as follows: “China Mobile international is expected to get access to new customers, international business opportunities and new earnings growth engines”. It is too early to make any estimation of the investment’s success.

China mobile also has a minor presence abroad through its wholly owned subsidiary China Mobile International (CMI). CMI has representative offices in London and Los Angeles and 3 existing and 6 planned point of purchases (China Mobile International Limited, 2015). This is significantly less than all of its telecommunication industry competitors.

China Mobile claims that “China Mobile has been always actively pursuing global expansion and seeking overseas strategic investment opportunities to develop international business and operations” (China Mobile Limited, 2014: a: 2). Nevertheless, compared to China Mobile’s

turnover and cash reserves, its investments abroad seem to be rather limited with two relatively large investments. When looking at the geographical spread, China Mobile's investment abroad is limited to Asia, focused around Thailand and Pakistan. Even though it has been contemplating other countries such as Germany, South Africa, Brazil, Portugal, and North Korea (Morning Whistle, 2013) for larger investments, no concrete actions have been undertaken so far.

4.2 China Telecommunications (Telecom)

4.2.1 China Telecom's domestic situation

Around 1998 China Telecom was forced to spin off its wireless activities into China Mobile, leaving it mainly with its fixed line activities. After the 2008 reforms, China Telecom was allowed to buy China Unicom's CDMA network assets, opening up the mobile section of the market as well (Fu and Mou, 2010). It has, however, maintained a strong presence in the fixed line services with a market share of over 50%. Especially its fixed broadband services perform very strong (Forbes, 2014: a). It is the world's largest fixed line operator with over 140 million connections (China Telecom Corporation Limited, 2015: a).

As explained above, China Telecom was originally the only player in the market. With revenues of approximately \$50 billion, it ranks as a far second in the network provider subsector, behind China Mobile. It currently has over 180 million mobile subscribers and over 100 million fixed broadband subscribers (China Telecom Corporation Limited, 2015: a). Its recent motto "Stay hungry, stay rich" (China Telecom Corporation Limited, 2015: a) reveals that it aims to increase this subscriber base even further.

Early on after the start of 3G services in China (2009), China Telecom managed to perform excellent with an outstanding 3G penetration amongst its customers of 60% of its mobile customers, compared to just 32% and 48% for China Mobile and China Unicom, respectively (Forbes, 2014: a). Despite its historical role as fixed line service provider, it managed to balance out its revenues from mobile and fixed line services to around 50% each (Forbes, 2014: a). Currently it is also the world's largest CDMA operator in terms of subscribers (China Telecom Corporation Limited, 2015: a). The quality of China Telecom's 3G network is not as good as China Unicom's, which has been said to be four times faster on average. China Telecom has

been posting record profits, attracting much of China Mobile's customers as china mobile has had some issues with the deployment of its 3G network (see supra).

As for the other two large network operators, China Telecom's 4G adventure started with the division of a TD-LTE license in December 2013. In the second quarter of 2014, China Telecom also received a FD-LTE license to start trials (Forbes, 2014: a). These trials were limited geographically to certain cities. In early 2015 China Telecom was then awarded a full FD-LTE license (Shih, 2015). Contrary to China Mobile, China Telecom waited to aggressively deploy a TD-LTE network. Now that it has a both licenses, it is said to be investing in a hybrid network (Forbes, 2014:b). Given the very recent release, it is hard to assess the success of these investments. It is clear, however that China Telecom has been put at a disadvantage compared to China Mobile during the whole 4G deployment stage. For the 3G standards the domestically developed one was licensed at the same moment, delaying the others as they had been ready for a while (see supra). For the 4G standards the government went even further, delaying the licensing of the standards developed abroad to such an extent that the licenses for these were only granted well after the ones for the domestically developed standards. China Telecom's incompatible network clearly put the company at a disadvantage.

In conclusion, China Telecom is well behind its two main competitor network operators in terms of mobile business. This can largely be attributed to the forced divestment of its mobile activities and the Chinese government's standard policy. Nevertheless, it seems to stay a healthy company with an interesting future.

4.2.2 China Telecom's position abroad

Even though China telecom is the country's second largest telecommunication network provider in terms of revenue, it has up until now largely refrained from making large investments abroad. Even though this case may thus not seem very relevant at first, it can give some insights on the drivers behind this decision. The following contains a very brief overview of its limited international operations.

In their latest announcement on investments abroad (China Telecom Corporation Limited, 2011), China Telecom talks about its position abroad. Although the announcement talks about a

strong growth abroad, the position is very limited and everything but deeply integrated. Their 23 abroad offices with points of purchase in 17 cities (China Telecom Corporation Limited, 2011) are far from impressive. Their international infrastructure investments are also always connected to China and give the impression to have as a goal to ensure a good quality service for their domestic clients, rather than establishing a strong presence abroad. Finally, they are also engaged in some R&D and standard development initiatives. Once again these do not seem to be focused on commercial expansion abroad, but rather at a learning experience to be exploited domestically.

Next to ensuring a qualitative service in the Chinese home market, the second objective of China Telecom's activities abroad is to serve Chinese customers abroad. A first move to do so was the establishment of China Telecom Europe Ltd. By establishing a presence in London and Frankfurt, China Telecom aimed to provide its services to "Chinese customers looking to move into Europe, and to European businesses expanding into Asia" (The Wall Street Journal Asia, 2015). A more concrete example of this is their deal with Everything Everywhere in the United Kingdom. In this rather small deal they are using their partner's network to offer their services to Chinese customers and businesses and they claim they were the first Chinese carrier to establish such a virtual network abroad (Vitirovitch and Owen, 2012). China Telecom also has a similar presence in the United States through China Telecom Americas. Again its goal is to offer telecommunication services to business that require "China domestics services" (PR Newswire, 2011).

It has been reported that China Telecom is currently investigating a \$10 billion investment opportunity in the Mexican telecommunication network infrastructure, and this was confirmed by a company spokesman (Murray and Shih, 2015). No decision has been taken in this case so far, however. Thus, even though some change may be happening in their future strategy, China Telecom's position abroad is rather limited.

4.3 China Unicom

4.3.1 China Unicom's Domestic situation

As was already mentioned, China Unicom was introduced in 1994 to create competition for the monopolist operational arm of the MPT. In the early stages of its existence, it suffered from the phenomenon called “regulatory asymmetry”, which is the “situation in which the regulator has a stake in the monopoly enterprise and often initiates favorable policies towards the monopoly enterprise” (Fu and Mou, 2010: 650). In this case it was obviously the MPT that favored China Telecom at that time. The MPT remained in fact regulator as well as operator in the sector given that all China Telecom funding and personnel came from the MPT. This put China Unicom at a serious disadvantage compared to China Telecom, leaving it only the mobile phone market. Even in this subsector its market share was very limited during the first years (Loo, 2004). After these though first years, China Unicom was incorporated in its current form in 2000. After the 2008 telecommunication sector reforms, it was forced to sell its CDMA network to China Telecom, leaving it only with its GSM network for mobile services. It received, in turn, the Fixed line network from China Netcom (which stopped operations afterwards) (Fu and Mou, 2010). These restructurings turned it into a mobile and fixed line player, just as its main two competitors China Mobile and China Telecom.

With revenues of around \$40 billion it is the third historical player in China in terms of revenues (China Unicom Limited, 2015: a). With a total of ~450 million subscribers (~300 million mobile and ~150 million fixed line), it ranks well above China Telecom in terms of total subscribers (~320 million), but it seems to have issues reaching its competitor's average return per user (ARPU). China Unicom has a significantly lower margin than its peers China Mobile and China Telecom (MarketLine, 2014). Just as was the case for China Telecom, the historical business line (in this case the mobile one) seems to stay relatively more important for China Unicom.

When considering China Unicom's domestic history, one has to investigate its relationship with Apple. In the fourth quarter of 2009, China Unicom reached a deal with Apple to distribute the iPhone (The Associated Press, 2009). The partnership really took off around September 2010, when China Unicom started offering a new version (Iphone 4). Sales were in the 100,000's in the first few days and it has been said that China Unicom took away a considerable share of China

Mobile's subscriber base, given that China Mobile did not offer Apple devices (Vialle et al, 2012). The partnership with Apple remained exclusive up until March 2012, when China Telecom started offering package deals with iPhones as well. Even though its partnership with Apple was very successful, China Unicom partly changed its strategy. By starting to offer lower-end phones from manufacturers such as Huawei and ZTE, it managed to significantly increase its 3G subscriber growth (Tighe, 2012).

When it comes to standard policy, China Unicom opted for the W-CDMA standard as its 3G standard, which is globally diffused. At the end of 2013, China Unicom had around 122 million 3G subscribers, which represents a mobile penetration rate between the ones of China Telecom and China Mobile (MarketLine, 2014). When considering 4G, the case is very comparable to the China Telecom one. As was the case for its competitor China Telecom (See Supra), China Unicom was not very happy with the government's decision to favor the domestically developed TD-LTE standard (Mozur and Osawa, 2015). One reason was obviously that this standard was incompatible with its legacy 3G network.

In conclusion, it can be said that China Unicom is a player focused more on the mobile side of the telecommunication spectrum. It has a large subscriber base, but seems to have some troubles to convert this subscriber base into financial performance. Its deal to sell Apple devices brought China Unicom considerable success, but it may have some tough times lying ahead because of the incompatibility of its network with the government-supported TD-LTE 4G standard.

4.3.2 China Unicom's OFDI Position

Even before the 2008 Chinese telecommunication sector reform, in March 2006, China Unicom engaged in a minor investment abroad. It acquired a CDMA 2G network in Macao, with plans to apply for a license to turn it into a CDMA2000 3G network (Li, 2006). The planned investments (around \$9 million) and the potential revenues can hardly be called significant for a company the size of China Unicom. Li (2006) cites an anonymous analyst who concludes that the goal of the acquisition was to gain experience in the commercial deployment of a 3G network. This experience could then help China Unicom in an eventual deployment of a commercial 3G

network on the Chinese mainland. It is to be noted, though, that the 2008 reforms probably decreased the usefulness of this potential experience, given that China Unicom was forced to divest its CDMA network to China Telecom. After the 3G licenses in China were awarded, China Unicom chose to develop a W-CDMA network and therefore the experience it gained through this foreign investment might be rather limited. Nevertheless it gives useful insight into the idea behind the investment.

Overall, China Unicom's overseas operations are very limited, with only 4 smaller (overall only 200 employees abroad) subsidiaries abroad in Hong Kong, Japan, Europe and "the Americas" (China Unicom, 2010). The main goal of these operations abroad seems to be rather similar to China Telecom's one: assuring a proper service outside the mainland for customers abroad that need close ties to China. Points of Purchases are also located in large global cities but their number is very small. Next to these subsidiaries abroad, China Unicom also has partnerships with other large telecommunication network operators. The goal is once again to "provide high-quality international voice and private line service" (China Unicom, 2012).

There is, however, one investment that kind of sets China Unicom apart from the cases discussed above. In 2009 China Unicom and Spanish telecommunication firm Telefonica decided to enter into a strategic partnership. This partnership was made official through the acquisition of \$1 billion in each other's stock. This meant, at the time, that China Unicom acquired a 0,88% stake in Telefonica, while Telefonica acquired an 8% stake in China Unicom (O'Brien, 2009). Even though most of the FDI definitions would not consider a 0,88% or even an 8% stake FDI (e.g. World Bank, 2015), I would like to argue that these mutual investments do qualify for this thesis' analysis. A first reason is that Telefonica's investment made it the largest non-government shareholder in China Unicom's capital (O'Brien, 2009). A second reason is that both companies announced far-reaching initiatives to cooperate, rather than simply being financial investors in each other's capital. Examples of these are the joint purchase of equipment, the sharing of knowledge, and a manager swapping program (China Unicom, 2009). A third reason that I believe validates the inclusion of this strategic partnership in the analysis is the fact that in 2011 both companies agreed to invest another \$500 million in each other's capital, raising the respective shares to 9,7% for Telefonica and 1,4% for China Unicom (BBC News, 2011). This

latest investment also granted China Unicom a seat on Telefonica's board of directors. The investment is thus not only a financial investment at all and, even though the strict control over one another is missing, the case can allow for valuable insights in the overseas investment strategy of China Unicom.

In recent years China Unicom's Telefonica partnership seems to have decreased in importance, at least in terms of stock ownership. In June 2012 Telefonica sold a 4,6% stake back to China Unicom, reportedly to improve its balance sheet structure "to contend in a tough European climate" (Daniel, 2012). Even though Telefonica stated this would not have any influence on their cooperation (Telefonica S.A., 2012), a Citi analyst cited by Daniel (2012) said one of the reasons was the questionable strategic benefit for Telefonica. In November 2014, Telefonica sold off another half of its remaining shares, leaving it with an approximate stake of 2,5% (Hu, 2014). No statements have been made by China Unicom on the issue and no divestments have been announced by China Unicom so far.

In conclusion, the "depth" of China Unicom's OFDI seems to be rather limited, with only limited wholly owned subsidiaries and a minority stake in a large European player, Telefonica.

4.4 Huawei

4.4.1 Huawei's domestic situation

Huawei started in 1987 as a small company providing local line communication services and only broke through in the telecommunication market in 1993 with switching technology products. Huawei started off by targeting the peripheral, rural areas of China, after which it moved on to target the more urban areas (Barbieri et al., 2013). It expanded rapidly, eventually also offering GSM and CDMA products (Luo et al., 2011). With a ~\$47 billion 2014 revenue its size is comparable to the some of the companies discussed above, but its unbelievable growth rate (12% five-year CAGR) sets it apart (Huawei Investment & Holding Co. Ltd., 2015). Unlike the companies discussed above, Huawei is more active in the equipment side of the telecommunication sector, rather than the network operator side. Nevertheless it also has operations in the network infrastructure side of the industry, being contracted by China Mobile

domestically, but also abroad by customers such as T-Mobile, Bharti Airtel and Algeria Telecom Mobile (Luo et al., 2011).

Huawei is currently the largest Chinese telecommunication equipment manufacturer, but it would be a mistake to dwell too long on its domestic situation as only ~38% of its 2014 revenues were realized in China (Huawei Investment & Holding Co. Ltd., 2015). They report their revenues outside of China as being divided into ~35% in Europe, Middle East and Africa, ~15% in the Asia Pacific Region and another ~11% in the Americas (Huawei Investment & Holding Co. Ltd., 2015). Huawei currently produces a wide variety of products ranging from the well-known personal handheld devices, over cloud services to Ethernet switches (Huawei.com, 2015).

Huawei has always put a large focus on innovation, as can be seen through its 70,000 plus (>45% of total workforce) employees engaged in R&D. In 2012 its spending on R&D was no less than 14% of its revenue. According to an economist report (Economist Intelligence Unit, 2008), both measures are well above the standard for firms engaged in similar activities. A Boston Consulting Group Report (Wagner et al., 2014) also cites Huawei as the 50th innovative company worldwide. In 2014, Huawei was the largest patent filer worldwide, which emphasizes its innovative attitude even further (World Intellectual Property Organization, 2015). In terms of R&D expenditure, Huawei was ranked as the 31st company in the world (European Commission, 2013). This innovative attitude has greatly influenced the company's OFDI strategy.

Even though Huawei is supposed to be a private company, in recent years some concerns have been outed on its ties with the Chinese government, not in the least by the US Congress. In a report (Rogers and Ruppertsberger, 2012) the latter accuses Huawei (and ZTE) of not having provided sufficient information to investigate whether or not Huawei's operations in the United States pose a serious security threat. The report recommends extreme cautiousness when dealing with the companies, and discourages government operations to use any of the equipment they manufacture. Especially Huawei's ties with the Chinese military have often been cited as problematic (e.g. Philip, 2013). Huawei was cited in the New York Times to describe the accusations as "little more than an exercise in China-bashing and misguided protectionism" (Pfanner, 2012). Even though these ties with the government and the military

have always been denied by the CEO and founder, the perception is unlikely to change significantly in the near future (Braga, 2013). At least some signs that indicate a rather strong connection between the Chinese government and Huawei can be shown. One is clearly the financial support, such as government grants of ~\$40 million and ~\$70 million Huawei received for various R&D projects (Barbieri et al., 2013). Wu et al. (2011) also mention arguments such as the fact that Huawei is not publicly listed and thus has limited transparency and the rumors that Huawei would have supplied regimes such as the Taliban. Another example to show indications of at least some degree of government ties are the loans with very low interest rates granted through government-related institutions. In the next section it will become very clear why this perception has been and will remain of great importance for Huawei's OFDI strategy.

In conclusion, of our five cases, Huawei is certainly the company displaying the largest growth. Its domestic operations only make up a minor share of its total revenue and its focus has always been on innovation. Even though Huawei is a privately-owned company on paper, there are also some clear indications of ties with the Chinese government.

4.4.2 Huawei's OFDI Position

Given its impressive sales in Europe (see supra) it is not surprising that Huawei has a vast presence in Europe as well in terms of OFDI. As one of the reasons for Huawei's investment in Europe Ren Zhengfei, the company's founder, was cited to have said the following: "In a few years our idea is to make people perceive Huawei as a European company" (Schechner, 2014). With entities ranging from the likes of R&D centers over training centers to logistic centers (Huawei, 2012: b), Huawei's presence is major in Europe.

One particular investment to be investigated when regarding Huawei's OFDI presence in Europe is its logistics center in Hungary. Although no exact figure has been announced on the amount of investment, several sources (e.g. The Heritage Foundation & American Enterprise institute, 2014; China Business Newswire, 2012; Sasin, 2012) have indicated it to be no less than \$1,5 billion. Some remarks have to be made for the proper analysis of this investment, as the circumstances were rather particular. Firstly, the Memorandum Of Understanding on the deal was signed during a large meeting with the Chinese Vice-Premier when a large amount of

investment agreements were signed, amongst which also a deal with ZTE (see *infra*). Fu et al. (2012) also mention that the investment decision was taken during a time when Hungary was in financial difficulties.

Another particularity often cited in the literature on Huawei's operations abroad is its presence in Africa, where it commenced its operations as early as 1999. In terms of customers, Huawei has partners in almost all African countries. To serve these customers, it has established an office in 18 countries. It has also established 7 training centers that train both students and customers and 1 R&D facility in South Africa. Altogether, Huawei employs over 5,800 employees on the African continent (Huawei, 2012: a). Obviously the exact investment amounts for these R&D centers, learning centers and regional offices are hard to quantify in dollar amounts, as these have been running projects. In an outdated publication (Huawei, 2009) Huawei estimates their fixed asset investment in these African establishments during the decade leading up to 2009 to be no less than \$1,5 billion. Huawei was also interested in a massive investment, said to be \$627 million, in Nigerian Nitel (Eto, 2013). This deal never went through as the company went bust. The company was in financial distress at the moment though, so it is an interesting case for the analysis. Some problems have occurred for Huawei in Africa as well as it was banned from operations in Angola due to corruption claims (Center for Chinese Studies, 2012). Huawei's OFDI position in Africa has thus been built up over a large period of time and seems to be of significant size.

The next particularity of Huawei's OFDI strategy is focused around innovation. It has set up its own research facilities in several countries such as Germany, the United States and Russia. Some of its important investments in the area of R&D have also been done in India, where it has recently opened a \$170 million R&D campus in Bangalore (Huawei Technologies Co., 2015). One source (Wang, 2015) estimates that this investment brings Huawei's total R&D investment in India up to \$300 million over the last decade and a half. Next to these centers it also often acquires already existing centers such as very recently the company Neul for \$25 million, which it plans to make its "center of excellence for the internet of things" (Rockman, 2014). Another example is Huawei's acquisition of Caliopa, a Belgian Ghent university spin-off which will be integrated into its current Belgian R&D center (Caliopa, 2013).

Huawei has more recently also begun to produce its equipment abroad. In 2012, it began to produce network equipment in two facilities in Chennai, India. 90% of the plant's workers was said to be Indian professionals (The Economic Times, 2012). The local production plan was said to be rather small though, given the regulatory requirements in India (Krishna, 2012). It has also commenced local production in 2013 in Brazil for handsets, mainly for tax exemption purposes (Ozores, 2013). The size of these operations seems to be rather small. This leads to believe that the lion's share of Huawei's products is still being produced in China.

Huawei's impressive presence abroad could have been even more impressive if it had not been perceived to have such close ties with the Chinese government and military. A first example is a strategic partnership that had been negotiated in the form of a 51% Huawei owned joint-venture agreement with the American inventor of Ethernet 3COM. This agreement would have given Huawei a much better distribution channel in the U.S., while counteracting some IP concerns it had with Cisco. The deal was cancelled because 3COM delivered equipment to the Pentagon, which the Committee of Foreign Investment in the United States (CFIUS) deemed "opening the door to a potential Trojan horse" (Luo et al., 2011: 71). Huawei has not only encountered this unwillingness in the U.S., but examples exist in other countries such as the U.K. and Australia as well. For example in the U.K. it was planning to acquire its former strategic partner Marconi, but the deal "stumbled over its suggested close links with the Chinese government and armed forces" (Clegg and Voss, 2012: 27). Huawei's response to the issue was that such investigations must have had a "predetermined outcome" (Huawei Technologies Co., 2012). Whereas they denied sustained interest in the US in 2013 - stating their focus would now be on Europe - (Boehler, 2013), they denied this lack of interest in 2014 (Yu, 2014). What is certain is that some OFDI in the countries at hand has been forgone because of issues due to their perceived link with the Chinese government.

In conclusion it seems to be hard to deny that Huawei has the largest presence abroad of the investigated cases. R&D seems to be a driving factor for its operations domestically as well as abroad. Not only has it moved out earlier than its Chinese counterparts, the geographical variety seems to be larger as well. It remains hard to call Huawei's presence global, as it is severely struggling in countries such as the US because of its alleged political motives.

4.5 ZTE

4.5.1 ZTE's domestic situation

The second telecommunication equipment player investigated in this thesis, ZTE, was founded around the same time as Huawei (in 1985) as a semiconductor company. Early on the focus was on “multi-product R&D” (ZTE Corporation, 2015: a), which eventually led to their current business portfolio in the telecommunication sector. Its 2014 revenue of ~\$13 billion puts it well behind the companies investigated above, and these revenues have been fluctuating around this number over the last five years with a remarkable degree of fluctuation (ZTE Corporation, 2015: b). Even though it seems to be a company significantly smaller than the ones above, ZTE is well worth analyzing as approximately 50% of its revenues are generated by its international operations (ZTE Corporation, 2015: b).

The parallels between Huawei and ZTE are plenty. This can for example be seen in the fact that ZTE has also always put a special emphasis on innovation. To achieve these innovations, it invests an approximate 10% of its revenues annually in R&D. An interesting anecdote to show this focus on R&D is that ZTE was the first telecommunication equipment manufacturer to have produced a CDMA mobile handset with a detachable SIM card (ZTE Corporation, 2015: a). ZTE applied for the third most number of patents worldwide in 2014 (World Intellectual Property organization, 2015). In 2012 ZTE was ranked as the 94th Company in terms of R&D expenditure worldwide (European Commission, 2013). This focus on innovation has had a large influence on ZTE's OFDI strategy, as will be shown below.

As was the case for Huawei, it is necessary to investigate the company's relationship with the Chinese government. The fact is that, even though the company is publicly listed, its main shareholder is a holding company dominated by two institutional shareholders with clear links to the People's Liberation Army (PLA) (Hille, 2010). For ZTE – as was the case for Huawei as well - the opinions on the alleged ties with the Chinese government and military are divided. The same US commission that labelled Huawei as a security threat investigated and condemned ZTE. ZTE reacted in a completely different manner to the allegations than Huawei did, though. Where the latter reacted more aggressively by accusing the investigators of being subjective, ZTE prided itself on its good cooperation with the investigation (Schmidt et al., 2012). Obviously

the company denies the allegations and this opinion is shared by others as it has been said that “many feel its [the US’s] real worry is protecting local companies” (Sharwood, 2013). Nevertheless for some the perception exists that ZTE poses a security threat, which may limit its potential investments abroad, especially in the US (see *infra*).

It may thus seem as though ZTE is a second Huawei. ZTE, however, tries to do everything to differentiate itself, not in the least to improve its access to countries where Huawei has encountered problems. A ZTE executive, cited in a Wall Street Journal Article (Hille, 2010), states the following: “We are quite different from other Chinese vendors... We are more transparent and less aggressive”. There is also a clear difference in shareholder structure. While Huawei is privately held by its employees, the shares of ZTE are publicly traded. This gives some credibility to ZTE’s transparency claim. Another difference between the two is that, even though the relation may be less clear as was the case for the three large network operators (China Mobile, China Unicom and China Telecom), ZTE is *de facto* an SOE.

In conclusion, it seems that ZTE is a second Huawei. Some very clear similarities have been exposed in this analysis on the domestic situation. Nevertheless, there are also some important differences such as ZTE being government-owned and its attitude towards the allegations coming forth from its ties with the Chinese government. In the following ZTE’s OFDI position will be investigated more closely.

4.5.2 ZTE’s OFDI position

This section begins, once again, with some parallels between Huawei and ZTE. As early as in 1998 it opened an R&D facility in the United states (ZTE Corporation 2015: a). In the early years the focus was mostly on developing countries, though, after which it turned to the more developed ones (Munich Innovation Group GmbH, 2014). Nicolas (2009) attributes the success of their OFDI strategy to this particular strategy. As was the case for Huawei’s early internationalization efforts, ZTE’s first OFDI steps were well before most of Chinese companies started their large internationalization efforts and before the installment of the Chinese government’s policy shift.

ZTE's investments in Europe include 26 local offices in 24 countries. A first investment which is important for our analysis that has already been mentioned is in Hungary. During the negotiations in 2012 which resulted in, amongst others, the Huawei logistics center (see supra), a deal was reached on a \$10 million network operations center (Budapest Business Journal, 2012). Obviously the same considerations of Chinese government intervention and financial distress have to be taken into account for this deal. Another investment by ZTE in Europe is its logistics center in Greece. For this, the agreement was signed in march 2014 between ZTE and logistics operator Cosco. A government publication mentions that the deal was negotiated during a visit by the Greek prime minister to China (Enterprise Greece, 2014). The same publication also declared that the deal was "an important step... in the strategic collaboration between China and Greece, supporting the country's effort to exit the financial crisis" (Enterprise Greece, 2014). The parallels with Huawei's Hungarian logistics center could not be larger. Overall, ZTE seems a to consider its European investments as a key part of its OFDI strategy.

ZTE also has a large presence on the African continent, with 32 offices in 31 countries. Around 7,5% of its revenues is generated by its African operations (ZTE Corporation, 2015: b). Its strategy in Africa is different from the one Huawei executed though: it decided to go for a pure low-cost strategy. In a report (Executive Research Associates (Pty) Ltd, 2009: 53), Duncan Clark (telecoms research firm chairman) was cited to have said: "ZTE is willing to forgo its branding, go the white label approach and customize to what operators and customers want". ZTE, as Huawei, has also done some investments in training centers, but this seems to be rather limited. ZTE has clearly made large investments in Africa, but seems to be more of an opportunistic player than Huawei, which has established a vast presence all over the continent.

As was the case for Huawei, there is an important aspect of ZTE's OFDI position linked to innovation. In 2011 Dai Shu, at that time the CEO of the company, stated in an interview the following: "innovation is essential. It is no exaggeration to say that no innovation, no overseas market" (Hu, 2011). It has, for example, established R&D centers in Chile and Pakistan, which are said to be dedicated to adapting their products to the local requirements (UNCTAD, 2006: a). Another example of its R&D-oriented investment strategy is that in the United states alone,

it has deployed 5 R&D centers (ZTE Corporation, 2012). More recently, ZTE has also set up a joint innovation center with TIM Brazil “to develop broadband technologies of the future” (ZTE Corporation, 2014).

A recent important investment that needs to be discussed as well is ZTE’s 2011 investment in an industrial park in Brazil. The investment is estimated to be somewhere between \$200 million and \$250 million (respectively The Heritage Foundation & American Enterprise Institute, 2014 and China.org.cn, 2011). The facility will focus both on the production of equipment as on R&D and will employ over 2000 people, of which ~200 in R&D (Hille, 2011). Nevertheless – as was the case for Huawei – most of ZTE’s production is still being executed in China.

As was stated before, ZTE’s operations abroad are often scrutinized because of security concerns, especially in the US. As already stated, its attitude towards these allegations was rather positive (at least towards the outside world). One example is its announcement only months after the US congress’s ruling that it would invest \$30 million extra in the US (ZTE Corporation, 2012). Huawei’s reaction was completely different (see supra). It should be noted, however, that the scrutiny from countries as the US has to have some impact on ZTE’s OFDI strategy. Even though there are no concrete reported cases of deals gone wrong, the mere fact that some of their commercial deals are made impossible decreases the attractiveness of OFDI in these countries. ZTE chairman Hou Weigui was not very optimistic that this perception would change anywhere soon. He therefore said ZTE would focus on their handset business in the US, abandoning a major part of their business potential (Subler, 2013). To conclude this part on ZTE’s problems related to their ties with the government/military, it seems that some OFDI opportunities have been forgone. ZTE, however does not seem to be very close-minded, and continues to fully exploit the remaining opportunities such as R&D investment.

In conclusion, ZTE’s presence abroad is impressive. Already in 2007, ZTE was said to have over \$1.7 billion in foreign assets, over 30% of its assets at that time (UNCTAD, 2009), and it would be very hard to argue that this number has decreased since. Some parallels with Huawei can certainly be found, but its attitude towards the US (and other scrutinizing countries) seems to be different.

5. Analysis of the drivers behind Chinese telecommunication OFDI

In the following the theoretical framework developed above in the methodology part will be used to investigate the case studies elaborated above. In a first part the domestic and firm-specific characteristics will be investigated using the three-aspect approach suggested by Mihailova and Panibratov (2012). The three investigated aspects are institutional home country environment, sectorial specificities and firm-level resources and capabilities.

In a second part the external and investment specific drivers behind the investments in our case studies will be investigated. For this the market seeking-, strategic asset seeking – and efficiency seeking motives will be analyzed. As a conclusion to this section the facilitating or triggering factors such as host country government policies and target country and company (financial) situations are investigated. In this final part there will also be a short note on china's overall economic policy and its influence on OFDI strategies.

5.1 Domestic and firm-specific characteristics

5.1.1 Home country institutional environment

The first influencing factor for this part that requires investigation is the home country institutional environment. In this respect, the analysis will start by investigating the connections to the government, both in terms of ownership as in terms of less-structural ties. Afterwards two of the most important policies orchestrated by the Chinese government are analyzed. Firstly an analysis of the banking policies and their influence on OFDI is presented, after which the diplomatic support is investigated.

5.1.1.1 Government connections

The first factor in this respect is the government ownership. The fact that four out of the five cases presented above are effectively state-owned, suggests that there should be some differences between Huawei and the other four cases. The degree to which Huawei can be categorized as a private company, is questionable though. As stated above, there are some clear arguments that can be made that there are some considerable links to the Chinese government, albeit it through the military or not. It will nevertheless be investigated whether or not there is an influence of government ownership on the OFDI strategy. Wang et al. (2012: a) state in their

work that “state ownership is often associated with significant political and economic advantages and better public provision that can widen the scope of their resource base and help firms with high state ownership invest abroad” (Wang et al., 2012: a: 429). They conclude that Chinese firms with a higher degree of state-ownership are more likely to invest abroad.

When this analysis is compared to our cases the conclusion is that, for the Chinese telecommunication industry, Wang et al. (2012: a)’s findings do not apply. The only firm that has no government ownership, Huawei, is clearly the most advanced in terms of foreign presence. This may be attributed to the fact that, even though it might not be an SOE, Huawei still largely receives the benefits resulting from preferential government treatment such as cheap financing and diplomatic support. In a next study executed by Wang et al. (2012: b), an important support for our findings is presented. Government involvement should not only be evaluated through ownership, but also through what they call government affiliation. Government affiliation is defined as the degree to which relations with the government influence the international trajectory. Their findings are that government affiliation has a significant influence on market seeking OFDI for Chinese companies and no significant influence on resource seeking OFDI. On the other hand, they found that government ownership has a significant influence on resource seeking OFDI for Chinese companies and not on market seeking OFDI. As stated in the literature review, the raw material seeking motive is not considered to be of major importance in the telecommunication industry. This supports the findings that, for the telecommunication industry, not the degree of ownership, but rather the extent to which preferential policies apply should be taken into account when analyzing government involvement.

These findings lead to a very interesting finding when the three large network providers China Mobile, China Unicom and China Telecom are compared amongst each other. This approach allows to control for any potential sectorial differences, since they all operate in the exact same business. Government policies have consistently been favoring China Mobile over the other two, amongst others through the standard and licensing policies (see supra). The best example of these policies are the licensing and standard policies for 3G and 4G. China Mobile clearly has a larger presence abroad than the other two network providers, illustrated for example through its investments in Pakistan and Thailand. China Unicom and China Telecom, on the other hand,

have been less involved in OFDI, even though they have a slightly larger presence in terms of representative offices. It would be impossible to attribute these differences to a difference in ownership given that China Unicom, China mobile and China Telecom have a respective percentage of approximately 37%, 27% and 17% public shares outstanding (China Unicom Limited, 2015: b; China Mobile Limited: 2015; China Telecom Corporation Limited, 2015). It would be wrong to conclude that all of this is attributable to government policies favoring China Mobile, but here can certainly have been an important influence.

To conclude this part on government connections, it is clear that actual ownership is not a major determining factor for OFDI strategies. The case of Huawei clearly shows that government affiliation is playing a more important role. This case is supported through a comparative case with the three network providers. Even though their degree of government ownership cannot explain the differences in their presence abroad, it seems that government support may have played a role. China mobile clearly received most of the Chinese government's support, which may have contributed to its presence being slightly larger abroad. In the following a more specific deep dive on these policies will be performed.

5.1.1.2 Banking Policies

The first analysis of preferential policies is focused on the banking policies, for which a short introduction to the sector is necessary. Even though there has been a long ongoing reform in the Chinese banking sector, it is still largely dominated by state-owned banks. The four largest state owned banks possess no less than "80% of all banking assets and between 65% and 70% of all loans" (Kumaravadivel, 2013). Next to these, the Chinese government has created three banks to use for its foreign policy interventions: Bank of Communications (BoC), the CDB and Export Import Bank of China (EIBoC). It is especially the banks of the latter kind that have played an important role in our cases. In 2006, 87% of total funds raised by Chinese non-financial firms were loans (Bailey et al., 2011), so it is hard to overestimate the importance of bank financing in the Chinese investment strategies.

When considering the question whether or not this state-dominated banking system significantly influenced our cases' OFDI strategies, it is necessary to fully understand that, in

China, loans are certainly not only awarded based on creditworthiness or investment plans. This can clearly be seen by the fact that Chinese banks tend to provide more loans to firms in financial difficulties. The announcement of these loans typically also has a negative impact on stock performance, as financial markets effectively understand this mechanism (Bailey et al., 2011). Another important specificity that needs addressing is the fact that state-owned enterprises are generally provided with loans at a mere third of the cost of their private counterparts (The Economist, 2012). Cull et al. (2014) confirm this by showing that government ownership is a significant factor in determining whether or not firms are financially constrained. They add another layer, though, by not only looking at ownership, but also at connections with the government (they use as a proxy whether or not the CEO is appointed by the government). The conclusion is that government connections also have a large influence on Chinese firms' financial constraints. These two findings lead to believe that the investigated cases, for which at least some degree of connection with the government has been shown, might have received some preferential treatment from the banking industry. It would thus seem logical that there would be ample evidence of practices supporting OFDI of our firms. In the following this evidence is provided.

Since there are no published data of the policy lenders (such as CDB and EIBoc), it is hard to estimate the extent to which policy lenders influence OFDI strategy. On top of this, when data are found it is very hard to determine which proportion was actually used for OFDI purposes. Some publications exist with limited information, such as a \$10 billion credit line from the CDB to Huawei in 2006 (IBM, 2006), a \$30 billion "credit boost" from the CDB to Huawei in 2012 (Said, 2013) and a \$20 billion facility from the CDB to ZTE in 2012 (Yee, 2012). It would be a mistake to think, however, that the policy loans are only directed towards these companies or that it would be limited to these amounts. One estimation mentions an average of \$30 billion OFDI financing per year since 2007 (Irwin and Gallagher, 2014). Most of the OFDI finance is done by CDB and EIBoc, and over 95% of the loans provided for OFDI specifically go to SOE's (Irwin and Gallagher, 2014). In their work on OFDI finance in China, Irwin and Gallagher (2014) also clearly mention not only that these loans are often subsidized, but also that their rates can vary

greatly. They, for example, mention a loan that Huawei took out in 2009 at commercial rates, while other loans are subsidized until they reach LIBOR rates.

To conclude this part, it has to be mentioned that providing subsidized finance for OFDI purposes may not be welcomed by the host economies because of competition law issues. Since many of our cases have already encountered some OFDI problems because of perception issues (see supra), there might actually be a negative effect from favorable OFDI finance. This, together with the measurement problems, render it rather hard to estimate the exact extent to which the government's banking policies influence our cases' OFDI policies. It is certain that our cases' OFDI strategies were influenced by the banking policies orchestrated by the government, but it is hard to analyze the extent of this influence.

5.1.1.3 Diplomatic Support

The second part of the home government policies in promoting OFDI analyzed here is the diplomatic instruments utilized by the Chinese government. Zhang et al. (2014) show in a study on China that visits of senior government officials are positively correlated to Chinese OFDI. They do, however, rightly mention that the causality could go either way in this correlation, but it is not hard to imagine that the diplomatic instrument could be used to promote OFDI deals. Deych (2012) mentions that these visits are a critical moment in the process of reaching a deal. It has been mentioned that developing countries in particular are very sensitive to this kind of political lobbying (Cooke, 2012). Therefore Cooke (2012) also mentions that the influence is of particular importance to ZTE and Huawei's large investments in Africa. He also argues that CSR activities such as the use of donations contribute to these diplomatic lobbying exercises. Another particularity that should not be overlooked is the fact that China has the habit of not interfering with domestic affairs. This allows their companies to operate in countries that are forbidden to their competitors from other parts of the world. This has, for example, been proposed as one of the reasons for Chinese (telecommunication) companies' success in Africa (Cissé, 2013). These findings suggest that our cases' OFDI strategies could thus greatly be influenced by diplomatic support. In the following some evidence for this is provided.

The first example that can clearly be linked to the theory are the investments of ZTE and Huawei in Hungary and Greece (see supra). In both cases there was interference of very senior government officials directly related to the conclusion of the deals. Statements were also issued by both governments to express their mutual approval and support and to confirm their partnership. Huawei and ZTE's investments in Africa are also often said to be facilitated by diplomatic efforts. Deych (2012) mentions for example a development aid amounting to as much as \$1-2 billion a year on the African continent in the form of "debt relief, technical and humanitarian cooperation, and training of personnel" (Deych, 2012). The claim that Chinese companies can do business in countries unavailable to many others due to political considerations seems to hold for our telecommunication cases as well. One example that caused a lot of buzz in the press is ZTE's activities in Iran. In March 2012 the press reported on ~\$130 million deal on telecommunication equipment (Stecklow, 2012). It has to be said, though, that ZTE stopped active business development in Iran days after the press release (Muncaster 2012). It continued to supply already existing customers, however.

In conclusion of this part, fact that the announcements are often not very clear and contradictory makes it very hard to assess the actual influence of diplomacy on the Chinese telecommunication firms' OFDI strategy. Nevertheless, it seems clear that diplomacy played a certain role for at least some of the investigated cases.

5.1.2 Sector-specific characteristics

Mihailova and Panibratov (2012: 162) mention "market, capital, technology, and infrastructure requirements" as factors that could influence differences between sectors in OFDI strategies. For the analysis of the telecommunication sector, the most important ones are probably the technology and infrastructure ones. In the following the analysis some differences between the network providers (China Mobile, China Telecom and China Unicom) and the telecommunication equipment providers (Huawei and ZTE) will be shown. It is clear that the latter are more advanced in terms of presence abroad.

The first factor analyzed for its sector-specific influence on the OFDI strategy is technology. Obviously a large amount of technology is common over the two sectors, but some differences

are present. Where the network providers are limited to use the technologies they have obtained licenses for, the telecommunication equipment providers are much less limited in their use of technologies. When, for example, China Mobile wants to expand abroad it needs to acquire licenses to do so. Even though all OFDI in a sense needs approval from the host economy, these licensing procedures can be particularly costly and time-consuming. This severely limits the potential for greenfield investment. China Mobile for example voided these issues in Pakistan by acquiring Paktel as a whole, with the licenses included. This restriction can clearly have meant a barrier to invest abroad and may explain at least partly why the network providers seem to be performing worse than the telecommunication equipment providers.

When now turning to the infrastructure requirements, a similar argument of barrier to entry can be made. Network providers are very much dependent on the infrastructure. They need a network infrastructure that offers a minimum scale in terms of coverage to operate effectively. The only solutions to this problem is to acquire someone's network or to build a network of their own. This network then again needs to be compatible to the standards and technologies they use. Both solutions are costly and time consuming. The telecommunication equipment providers, on the other hand, do not necessarily need a large investment. They can start off very small through a representative office and ramp up their investment gradually. One example from the cases is Huawei's investment in Hungary, where it only had a representative office and afterwards invested more heavily with an R&D center and a logistics center.

To conclude this part, both of the analyzed examples of sector specifics may have acted as a barrier to investing abroad. The influence of both seems relatively more important for the network providers. Licensing to use certain technologies as well as infrastructure to do so require a large commitment that may explain some of the differences between the network providers' and the telecommunication equipment providers' presence abroad.

5.1.3 Firm-specific characteristics

The analysis of firm-specifics concludes this part on the internal and domestic characteristics driving the OFDI strategies. Kimura (1989), in his work on Japanese semiconductor firms, develops an analytical framework to evaluate the firm-specific factors influencing OFDI

strategies. He concludes that a firm must possess some strategic assets that can allow it to cover for the costs to operate in an environment it is not used to operate in. On top of this he concludes that these assets are not necessarily distributed evenly in the same industry. In his theoretical work on the resource-based view of the firm, Michalisin et al. (1997) has a go at the definition of strategic assets. They state that only intangible assets can be strategic and cites examples such as “employee knowhow and culture”, “patents,..., reputation and networks” (Michalisin et al., 1997: 364). Barry et al. (2003) state that “R&D and superior product differentiation through advertising are generally found to be the most important firm-specific assets associated with multinationality” (Barry et al., 2003: 346). Based on these findings, this part will try to investigate how these firm specific characteristics have influenced the OFDI strategies in our cases.

One clear example from our cases where the possession of certain strategic assets has influenced the OFDI strategy is related to the telecommunication standards. As good case where these standards have had an important influence is the choice of China Unicom’s partner, Telefonica. As stated above, China Unicom has long had a strategic partnership with Telefonica, which utilizes a W-CDMA network. This is the same standard as China Unicom uses for its 3G network. Given that the strategic partnership is aimed at, amongst others, sharing knowledge it must have certainly played a role in the choice of the partner. It could be imagined that the other companies would have made another choice of partner, depending on the respective standards they use.

In conclusion, it seems very hard to determine from our case studies which firm-specific characteristics have influenced the OFDI strategies. From the example described above it nevertheless seems to play a certain role, and it is clear that this role needs to be investigated more thoroughly. However, the scope of this thesis does not allow for a deeper analysis.

5.2 External and host environment-specific characteristics

When considering the motives underlying OFDI strategies, some remarks need to be made. A company’s investment strategy will rarely be motivated by just one of these motives, but rather a complex combination of all of them. There may also be differences in motives for OFDI in

developing and developed countries respectively. For example, Rehman et. al (2014) state that ZTE deploys different strategies when operating in developing as opposed to developed countries. They state that in developing countries ZTE focuses on profit maximization and market share, whereas in developed countries the focus lies more on “R& D, seeking technological development, Innovations by establishing R& D centers, joint ventures, agreements with other telecom operators for improvement and developing its brand” (Rehman et. al, 2014: 1331). An analysis thus needs to take into account that motives may very well differ widely for different investments and host environment characteristics. Nevertheless the developed framework will help in investigating which motives are most important for the Chinese telecommunication case.

In the following the validity of the three most important motives identified in the framework (see supra) will be tested: the market seeking-, strategic asset seeking- and efficiency seeking motives. In a final section the identified “facilitating factors” are briefly elaborated.

5.2.1 The Market Seeking Motive

The market seeking motive is “by far the most common type of strategy” (UNCTAD, 2006: b: 158) for companies from developing economies to go abroad. It has also been proven that the market seeking motive is the most important one for OFDI by Chinese companies in particular (Fontagné and Py, 2013). In the following is analyzed to which extent this is also the applicable to the elaborated cases.

One first very clear example of market seeking investments are the numerous representative offices of Huawei and ZTE over almost all countries on the Africa continent. These investments in representative offices have often been cited as motivated by the lack of proper network coverage (Cissé, 2013). As the telecom equipment providers provide the necessary equipment to establish this network coverage, this is a clear indicator of the market seeking objective. Even though this presence also incorporates learning centers and R&D investments, it seems that the main focus is on acquiring large procurement deals. Di Minin et al. (2012) also state, in their work on R&D investments abroad by Chinese companies, that adapting products to the local market is the most important reason for R&D facilities abroad. They mention the terms

“technology exploration VS technology exploitation” (Di Minin et al., 2012: 190), where the latter would be categorized under the market seeking motive in the framework used to analyze the OFDI strategies of our cases. This market seeking approach of foreign investment has been very successful up until now, as can be seen through their impressive sales on the continent (see supra). Obviously the telecommunication equipment providers’ investments in Africa are not at all their only market seeking efforts, but they are a clear example to prove the importance of the motive.

The network providers have also made considerable investments that point to the market seeking motive. The first example, related to the previous paragraph is obviously their representative offices that mostly try to serve Chinese people abroad or business that require services tailored to engage in Chinese business (see supra). China mobile in particular has also made an acquisition which was clearly motivated by the market seeking objective. As Paktel certainly struggled to gain market share in the early years after the China Mobile acquisition, China Mobile chairman Wang Jianzhou visited the Pakistan team. According to Wassay (2014), his only message was that they needed to increase the scale and thus their market share.

In conclusion, the market seeking motive certainly seems to have had a very significant impact on the telecommunication cases’ OFDI strategies. Both greenfield investments as well as acquisitions have been identified. Even when statements related to certain investments at first seemed to point to the strategic asset seeking motive, the technology exploration vs exploitation (Di Minin et al., 2012: 190) point of view learns that one should be cautious as these investments may actually be more motivated by the market-seeking motive.

5.2.2 The Strategic Asset Seeking Motive

Once again use Kimura (1989)’s definition of strategic assets will be used, meaning that only intangible assets can be taken into account. Even though the UNCTAD (2006) does not attribute a large importance to the strategic asset seeking motive when considering companies from developing economies, it is questionable to which extent China should still be viewed as a developing economy. Gugler and Boie (2008) state that for Chinese companies expanding

abroad the strategic asset seeking motive is the most important one after the market seeking motive.

A particularly important part of the case studies is focused on technology and R&D and thus the analysis of the strategic asset seeking motive will be focused on this aspect. As already stated above, R&D facilities can often be more motivated by the market seeking motive than the strategic asset seeking motive. It would, however be a mistake to categorize all R&D investment under the market seeking motive. An interview in Di Minin et al. (2012) cites an anonymous ZTE representative as follows: “It is not enough to rely solely on the R&D forces in China to catch up with our competitors in a short time” (Di Minin et al., 2012: 194). In their study on European R&D investments, they conclude that Chinese companies’ investment in technology-intensive areas is an indication for the strategic-asset seeking motive and that market seeking- and strategic asset seeking motives can often exist next to each other. Lu et al. (2011) also show that firms in a technology-intensive industry are significantly more motivated by the strategic asset seeking motive. It would be hard to argue with the fact that the telecommunication industry is not technology-intensive, which will make it very interesting to analyze whether or not the theoretical findings hold for our cases.

When only considering the network providers, it seems that most of their R&D activities are located domestically in China. On top of that, they do not publish any data on their R&D expenses. Their overall R&D activity seems to be rather limited when compared to the telecommunication equipment providers. Indeed, the image could not be more different when looking at the telecommunication equipment providers. Huawei and ZTE proudly publish data on R&D expenditure and each have a large number of R&D facilities located abroad (see supra).

This already seems to give some preliminary evidence for Lu et al. (2011)’s findings that sectors with a high technology-intensity are more likely to engage in strategic asset seeking OFDI. The strategic asset seeking motive for the network providers thus seems to be rather low when only considering technology. This, however does not mean there are no other strategic assets being sought after by their OFDI but this is out of scope for this thesis.

When now only considering the telecommunication equipment providers, the question is whether or not these foreign R&D centers are truly motivated by the search for strategic assets, rather than by the search for new markets. There are some very obvious examples of investments that are undeniably strategic asset seeking such as ZTE's joint innovation center in Brazil to develop their broadband technologies or Huawei's acquisition of Caliopa (see supra). The locations of the foreign R&D centers also seem to be mostly in more developed countries, which would lead to believe that the strategic asset motive is the relevant one. Even though there are some clear indications that some of the OFDI is motivated by the strategic asset seeking motive, Di Minin et al. (2012)'s arguments about technology exploitation rather than exploration still hold for some of the OFDI announced as R&D investments.

In conclusion, it seems apparent that the strategic asset seeking motive is mostly influencing the OFDI strategies of the equipment providers, rather than the network providers. Especially on the R&D and technology side, the strategic asset seeking motive seems to be of great importance. Nevertheless caution is always necessary when investigating an investment proudly labelled as R&D investments as they might not be entirely motivated by the strategic asset seeking motive.

5.2.3 The Efficiency Seeking Motive

Buckley et al. (2007: 501) give the following definition for the efficiency-seeking motive: "Efficiency-seeking FDI will occur when outward investors seek lower-cost locations for operations, in particular in the search for lower cost labor". In another work on Chinese OFDI, Buckley et al. (2008) do not attribute an important role to the efficiency seeking motive in influencing Chinese companies' OFDI strategies. The reason they give for this stance is that there are plenty of cheap production factors still available in China, especially in the central and western regions. The chapter is outdated, however, and Buckley et al. (2008) also state that these cheap production factors may become less available in the future. Overall, there does not seem to be a lot of attention for the efficiency seeking motive in the literature on Chinese OFDI. Nevertheless Li (2014) emphasizes the importance of this motive in some industries (see supra). In the following will be investigated to which extent the efficiency motive has played its role in influencing the OFDI strategies for the telecommunication cases.

For the network providers, the efficiency motive seems to be of very minor importance. The nature of their business and their investments abroad do not even justify a thorough analysis. The picture is somewhat different for the equipment providers, however. Both of them have production facilities abroad which could lead to think that they were motivated by efficiency motives. For both of them some remarks have to be made as well, though. The first one is that the production remains largely situated in China, so there is no exodus towards lower wage countries. A second remark is that other motives than only cost efficiency may be at hand. In India, for example, both Huawei as well as ZTE are scrutinized for more or less the same reasons as in the US. Producing locally could provide them with the necessary goodwill to create a more favorable business environment. This type of driver, that can hardly be called efficiency-related, has also been mentioned in Li (2014)'s work on the textile and clothing industry. A final investment that is certainly motivated to some extent by efficiency considerations is the network equipment providers logistics centers. The discussed examples were logistics centers for Europe in Greece and Hungary (see supra). Therefore, for the telecommunication equipment providers, there seems to be some evidence for the efficiency seeking motive, albeit rather limited.

In conclusion, the findings in the literature seem to hold for the network providers cases. For the equipment providers, the efficiency motive seems to have played a some role. Nevertheless even for these players the role seems to be of less importance than was the case for the market seeking – and strategic asset seeking motives.

5.2.4 Facilitating Factors: Distress, host country policies and Chinese overall economic strategy

It goes without saying that some investments abroad may be triggered by an opportunity arising from distress. This distress can take various forms such as political distress or financial distress. The distress can be both on the country-level as on the company-level, and both are investigated in this thesis. The literature on the influence of distress on OFDI strategies is limited, but, for example Clegg and Voss (2012) mention the influence of the European economic and financial crisis on Chinese OFDI. For the political aspect, Kim (2010) mentions that

politically unstable countries attract more FDI. He even shows that the level of corruption is positively correlated with a country's performance in attracting FDI.

When once again testing the theory to the cases, it can be seen that there can certainly be found some evidence supporting the stance that countries in distress tend to attract FDI. In our telecommunication cases examples can be found for both the network providers as the telecommunication equipment providers. For the first category the China Mobile investment in Thailand during extremely unstable times can be mentioned. For the equipment providers the best example is obviously ZTE's investment in the Greece logistic center. In the announcements following the latter decision the financial crisis was even specifically mentioned (see supra).

Next to the host country or company situation, its incoming FDI policies need mentioning as well. The textbook example of such policies are the policies implemented following the 1976 reforms in China itself with e.g. the SEZ's. In these SEZ's preferential treatment, for example in the form of tax incentives, was put in place. As a thorough analysis on all relevant countries' incoming FDI policies would justify another thesis, this aspect has been placed out of scope for this thesis. Nevertheless these policies certainly deserve mentioning as facilitating factors.

One final important particularity of Chinese telecommunication OFDI is that it might be influenced by deals made in other industries. Mark Natkin (managing director telecom consultant Marbridge) was cited in an Institute of Development Economics report as follows "It might be coincidental, but many of the telecom deals done by Chinese vendors in Africa and other developing countries have been with oil-producing countries" (Executive Research Associates (Pty) Ltd, 2009: 50-51). The high degree of government intervention and central planning in different industries in China makes this factor even more important. Even though no direct connections between telecommunication deals and deals in other industries have been found for the investigated cases, there might certainly be some.

In conclusion, it is hard to claim that the chosen "facilitating factors" have played a major role because firm evidence is hard to retrieve. Nevertheless they should always be taken into account when analyzing the drivers behind Chinese telecommunication OFDI.

6. Conclusion, implications and limitations

In this final part of the thesis the summary of the findings will first be addressed. Afterwards the theoretical implications will be presented. The thesis will be concluded by pointing out some of the limitations linked to the methodology and data used for this thesis.

6.1 Conclusion

The main goal of this thesis was to develop and test a framework to investigate what drives Chinese OFDI in the telecommunication sector. The question is subdivided into two parts being the “internal and domestic” driving factors and the “external and host environment” driving factors.

When considering the first, the “domestic and internal” driving factors, it seems that all three identified factors have played their role. The Chinese government intervenes in different ways in the telecommunication OFDI, influencing the various identified aspects. Important is to understand that the Chinese government does not only intervene through ownership, but also through a variety of policies. Next to this, some sector- and firm-specific characteristics certainly proved to matter in determining the investigated cases’ OFDI strategies. The fact that these latter two are still largely being influenced by the Chinese government, makes the Chinese government a very powerful player in influencing the domestic and internal factors.

The second part of the analysis focuses on the host environment of the investments and should thus be regarded per investment rather than per company. For clarity’s sake this part is split into “the motives” and “the facilitating factors”. When considering the three relevant motives for our telecommunication case, some certainly seem to be more important than others in influencing the overall OFDI strategy in the telecommunication sector. The most important motive seems to be the market seeking motive. Some investments that might seem strategic asset seeking at first may very well be market seeking and therefore caution is required to not overstate the importance of the strategic asset seeking motive. After the market seeking motive, the strategic asset seeking motive seems to be the second most important motive. For our cases, especially the OFDI strategy of the telecommunication equipment providers seems to have been influenced by this motive. The efficiency seeking motive seems to be of only minor

importance, but might become more important in the future. As already mentioned, the natural resource seeking motive is not very relevant for our case. The host environment analysis also pointed to three investment-specific facilitating factors: the target country/company situation, the host government policy incoming FDI policy and the overall economic strategy. The country/company situation, with a special emphasis on distress, seems to have played an important role as a facilitating factor. As mentioned before, the second factor was considered out of scope. When it comes to the overall economic strategy factor, the available data was too small to test the theory for the telecommunication cases, but it will certainly have had an influence.

The final conclusion of this thesis should be that it is hard to consider any motive more important than another for any investment, let alone for a company or an entire sector. All different aspects of the elaborated and tested framework require attention to fully understand the true drivers behind OFDI decisions in the Chinese telecommunication industry.

6.2 Implications

This thesis can have theoretical implications through its conclusion, through the developed framework and through the methodology used to test the framework.

The conclusion, describing all different drivers influencing the Chinese telecommunication industry can be a guideline. The drivers identified as being most important certainly need some deeper theoretical investigation, without neglecting the ones that seem to be less important at the moment.

The developed framework is a combination of earlier theoretical work, but combining all aspects is a necessary exercise to get a comprehensive view on the drivers behind a company's OFDI strategy.

The methodology of investigating both the domestic situation as well as the position abroad allows to fully understand all aspects of the framework. The thesis can certainly be reproduced for other countries or sectors, conditional on sufficient adaptation to the topic.

6.3 Limitations

It would only be fair to end this thesis by pointing out some of the more important limitations. These limitations mainly originate from the used methodology and the data available.

The first major limitation is the fact that no statistically significant conclusions can be drawn from the sample of cases used. The limited amount of available cases and the limited amount of available information per case simply does not offer the opportunity to construct the research otherwise. The goal of describing the different OFDI drivers and providing relevant examples has nevertheless been reached.

The second limitation to this thesis is linked to the communication from Chinese companies, research institutes and government institutions. The quality and trustworthiness of the published statements, reports and other means of communication might not be entirely to the standards the readers are used to. Through the means of triangulation via different types of sources, the influence of this issue was attempted to be limited. Nevertheless, the quality of the analysis may have suffered from this.

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8. Exhibits

Exhibit 1: A list of Chinese Telecommunication OFDI deals larger than \$100 million

2007	January	China Mobile	\$280	89%	Paktel	Technology	Telecom	Pakistan	West Asia
2007	May	China Mobile	\$180	11%	Paktel	Technology	Telecom	Pakistan	West Asia
2009	September	Unicom	\$1,000	1%	Telefonica	Technology	Telecom	Spain	Europe
2009	December	China Mobile	\$500			Technology	Telecom	Pakistan	West Asia
2011	January	China Unicom	\$500	1%	Telefonica	Technology	Telecom	Spain	Europe
2011	April	ZTE	\$200			Technology	Telecom	Brazil	South America
2011	November	Huawei	\$130			Technology	Telecom	Italy	Europe
2012	May	Huawei	\$1,500			Technology	Telecom	Hungary	Europe
2012	June	CIC	\$490	7%	Eutelsat	Technology	Telecom	France	Europe
2012	September	Xinwei	\$300			Technology	Telecom	Nicaragua	North America
2012	September	Huawei	\$150			Technology	Telecom	India	West Asia
2013	May	CDH	\$110	10%	Mobile World	Technology	Telecom	Vietnam	East Asia
2013	October	Huawei	\$200			Technology	Telecom	Britain	Europe
2014	January	Lenovo	\$2,910	100%	Motorola Mobility	Technology	Telecom	USA	USA
2014	February	Huaxin	\$310	85%	Alcatel-Lucent	Technology	Telecom	France	Europe
2014	March	Alibaba	\$220	20%	TangoMe	Technology	Telecom	USA	USA
2014	April	China Mobile	\$520			Technology	Telecom	Pakistan	West Asia
2014	June	China Mobile	\$880	18%	True Corp	Technology	Telecom	Thailand	East Asia

Source: *The Heritage Foundation & American Enterprise Institute (2014)'s: the China Global Investment Tracker.*

Exhibit 2: Developed framework to evaluate Chinese telecommunication OFDI drivers

