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Name: Min LI

Supervisor: Dr. Jeroen van Haaren

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Policy Effectiveness on Foreign Direct Investment in Chinese Real Estate Sector between 2000 and 2014

Min Li

People's Republic of China

Supervisor: Dr. Jeroen van Haaren

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Summary

Foreign Direct Investment in real estate (FDIRE) market has raised researchers attention when discuss economy and urban development. In China, FDIRE policy intervention closely follows the cycles of the real estate market in most countries. However, researchers stand on two opposite sides on policy effectiveness on foreign investment. This research is focused on whether FDIRE policies released by Chinese government really affected FDIRE inflow from 2000 to 2014. Firstly, according to review of FDIRE policy files, there were 17 restriction policies and 1 stimulation policy released in China between 2000 and 2014. Secondly, through P2 distance policy index, implementation degree of each policy is computed. Thirdly, policy index and control variables in panel data regressions of 25 provincial data show that FDIRE policies really influenced FDIRE inflow, and high policy implementation degree has negative effect on oversea capital inflow, because most policies are restriction rules. Thirdly, according to the regressions adding spatial dummy variables representing eastern, central and western China, eastern regions attracted more FDIRE than central and western provinces. However, policy effectiveness did not show significant difference among these three regions. Data limitation may be one reasons for this insignificant spatial result, therefore, more researches should be done to explore into this field in the future.

Keywords

Foreign Direct Investment Real Estate Market Policy Index Policy Effectiveness Spatial Difference

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Abbreviations

IHS	Institute for Housing and Urban Development
GDP	Gross Domestic Product
FDI	Foreign Direct Investment
FDIRE	Foreign Direct Investment in Real Estate
MOHURD	Ministry of Housing and Urban-Rural Development of Peoples' Republic of China
MOC	Ministry of Commerce of the People's Republic of China
SETC	State Economic and Trade Commission
MFTEC	Ministry of Foreign Trade and Economic Cooperation
SAFE	State Administration of Foreign Exchange
SAIC	State Administration for Industry of Commerce

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Chapter 1: Introduction

1.1 Background

Foreign investors are important actors in the real estate markets of countries all over the world. Recently, a new policy has been issued by Chinese government on August 2015 to simplify application procedures and loosen limitations for loans of Foreign Direct Investment (FDI) in real estate (FDIRE). It may imply that China begins to take a positive view of attracting investment from foreign companies or institutions, as well as involving more participants to strengthen its declining real estate market.

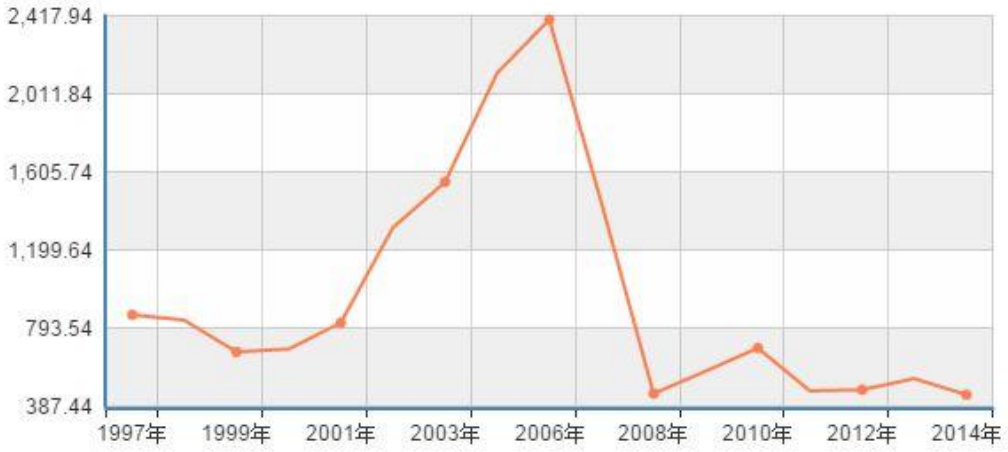
Looking back in time, foreign investment inflow in real estate market in China and Chinese cities fluctuated, due to policy changes and market developing conditions. From 2001 onwards, companies and institutions from Singapore and western regions began to invest in China following the Asian financial crisis and dot-com-era bubble in the American NASDAQ index. Real estate was often perceived as one of the most attractive sectors for these investors, because the speeding urbanization process in China implied high potential profits, as compared with developed cities in Japan, South Korea and western countries (Hua, 2007). Meanwhile, governments at different spatial levels in China provided incentives for foreign investors. Often taking the form of taxation and lenient land use policy, both cases aim to accelerate the inflow of capital on the real estate market.

However, with the amount of investment in real estate development increasing substantially from 2003 onwards, some scholars noted that a sharp increase of investment from foreign regions may have created a bubble in this sector, resulting in high investment risks (Zhang, 2004). Concerned with these developments, the Chinese government, in 2006, issued a policy to limit foreign investors to participate in real estate development project in China directly. One of the clauses released by the Ministry of Construction of the People's Republic of China (2006) states:

"……affiliated agency of a foreign intuition or company that registered less than one year in China will not be allowed to purchase housing that is not for self-use."

This policy made it impossible or at least more difficult for investors from abroad to invest in real estate. This is clearly supported by data as the number of real estate developing projects which foreign investors directly participated suddenly declined in 2007.

Figure 1 Number of real estate development projects that foreign investors directly participated in China



SOURCE: Author, 2016 based on data from National Bureau of Statistics of China, 1997 - 2014

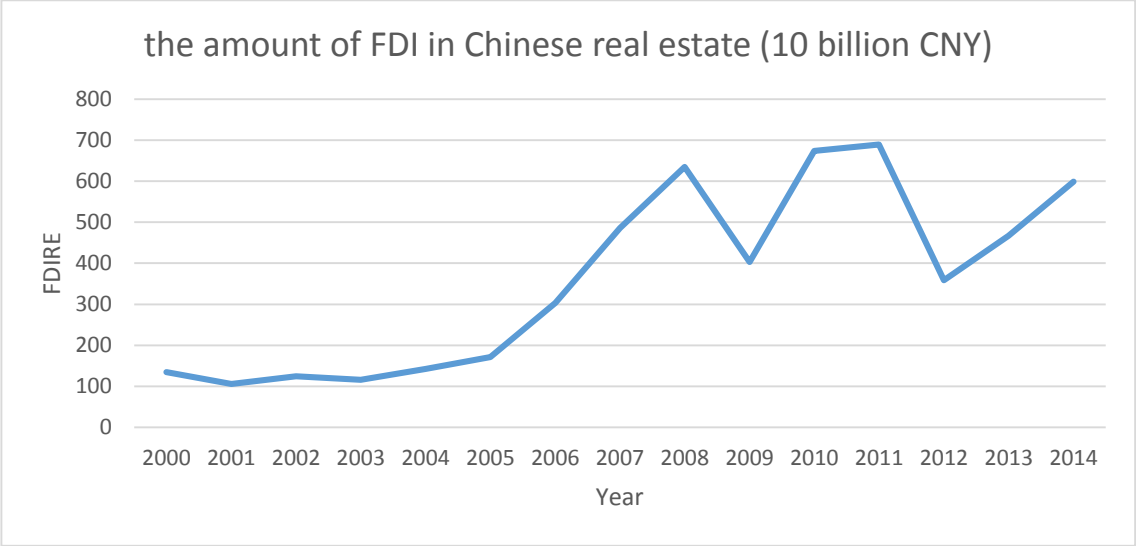
From 2012 onward, economic growth in China slowed down. The overheated real estate market negatively affected the manufacturing industry by squeezing out the investment because of the higher profitable attraction of real estate (Li and Zhang, 2009). Bubbles in the Chinese real estate development field created an imbalance between supply and demand, which has had significant negative effects on this sector since 2014 (Liu and Cai, 2010). In addition, devaluation of RMB and the appreciation of U.S. dollar encouraged investment flowing out of China (Li, 2015). Further compounding the problems the Chinese real estate market, countries from Southeast Asia, such as Vietnam and Indonesia, emerged as newly developing regions, which increasingly gained western investors' attention. These countries also began to attract more FDI by relaxing policy restrictions. For example, foreigners are permitted to purchase different types of real estate, including apartments and landed property such as villas and houses in Vietnam, and all properties owned by foreigners can be leased, succeed and mortgaged (Batt, A., 2014) . The Indonesian government has also finalized new rules that will permit expatriates to buy luxury homes in the archipelago (Sito, P., 2015). Moreover, western countries and cities also experienced a recovery of their property markets. For instance, since 2011, when Europe gradually revived from financial crisis, Dutch cities have attracted much investment from foreign countries because of its stable economic environment and lower risks perception. A report from ABN Bank (Vlek and Steinmaier, 2015) noted that the Netherlands attracted 9 billion euros in 2014 into its real estate sector alone, this number was approximately two times the amount of 2013 and 2012. Incidentally, the current revival on the Dutch market is mainly attributable to foreign investors, they are responsible for 66% of the total investment volume.

In order to cope with the consequences of an interconnected global environment and the stagnated condition of real estate markets in China, the Chinese government decided to view foreign investors in the same way as any other participant in the real estate market. Therefore, the government tried to absorb capital from abroad in this sector and guide the global investment towards real estate in China, thus resulting in the previously mentioned new policy at the beginning of this thesis.

1.2 Problem statement

Policy intervention closely follows the cycles of the real estate market in most countries. This is also the case in China, mainly because the real estate sector is essential for a rapidly urbanizing country with a large population and ample land resource endowment. However, the extent to which policy can directly influence the amount of FDIRE is limited. Other factors also play important roles, including economic and non-economic indicators, such as land supply, GDP growth rate and interest rate (He, 2011). Therefore, policy evaluation of FDIRE is a complex issue. For policy makers, this means that properly guiding investment from foreign investors to benefit the local real estate market in China, is at best a difficult task.

Figure 2 the amount of FDIRE in China during 2000 to 2014



SOURCE: Author, 2016 based on data from National Bureau of Statistics of China, 2000-2014

According to figure 1 mentioned above, the restriction policy implemented in 2006 significantly reduced the number of real estate project foreign investors involved in China. However, from the data of FDIRE in China from 2000 to 2014, the total amount of FDIRE actually did not decrease immediately in 2006. It experienced a fluctuation during the period, along with several other policies released by Chinese government (NBSC, 2014). Reliable conclusions can't be drawn whether policy had a direct influence on FDIRE inflow figures. In other words, it remains uncertain whether FDIRE inflows derived from restriction or stimulation policies, because other factors, such as economic conditions in China and the economic crisis (and recovery) both in China and foreign countries also affect Chinese FDIRE (Cushman, 1987, Culem, 1988, Grosse and Goldberg, 1991, Moshirian and Pham, 2000). Additionally, FDIRE changes may not be represented simply by total amount of FDIRE, but also ratios and other indices. In essence, changes in the structure of FDIRE, perhaps the number of investments became smaller, but the size of these investments grew. In other words, it is still not clear for policy makers and other related stakeholders whether the restriction or stimulation policies released by Chinese government had significant effect on

FDIRE inflow in the past 15 years. Furthermore, this country is an emerging market with large territory, therefore an urgent need for Chinese government is to figure out effective differences of restriction or stimulation FDIRE policies in various regions and implemental degrees, in order to cope with FDIRE in different economy context and make improvements to guide these capitals from abroad in the future.

1.3 Research objective

The main objective of this thesis is to work out whether the restriction or stimulation policies released about FDI in real estate sector in the past 15 years have had significant effects on FDIRE inflow of China. In addition, this thesis has a number of sub-objectives. Firstly, to understand the nature of major policies released by Chinese government related to FDIRE in the past 15 years, and to construct a timeline. This timeline forms the basis of the remaining research. Secondly, to clarify the degree of implementation of each policy identified. Thirdly, to test the policy effectiveness of each policy. Fourthly, to find out spatial differences in FDIRE policy effectiveness between Eastern, Central and Western regions of China between 2000 and 2014.

1.4 Main research question

Did restriction or stimulation policies significantly affect FDIRE inflow in China between 2000 and 2014?

1.5 Research sub-questions

- What were the restriction or stimulation policies of FDIRE released in China from 2000 to 2014?
- To what degree were these FDIRE policies implemented?
- To what degree were these FDIRE policies effective?
- Was there any spatial difference of FDIRE policy effectiveness among Eastern, Central and Western regions of China between 2000 and 2014?

1.6 Significance of the study

1.6.1 Scientific Relevance

Foreign Direct Investment is one of the most important elements when researchers concentrate on urban competitiveness, because FDI can reflect countries' or cities' sources of new technology for innovation job creation (Schwab and Sala-i-Martin, 2015). FDI in real estate sector is also one indicator that implies competitiveness of real estate market in the increasingly globalized world economy context. However, most of the existing researches and theories have been investigating on determinants of FDI and how real estate FDI can influence domestic capital market or economy growth rate. Only few articles mentioned how policy affecting on foreign investment amount, especially in quantitative ways. Additionally, there are always heated discussion among scholars whether policy can significantly affect FDIRE in the host market, and arguments differs for different countries with unique context. In China, one existing research done by He (2011) applied provincial fiscal expenditures for each research year as the public intervention degree, but did not find different effects of policy results in different time period and spatial regions. This article will attempt to contribute to a broader view of how FDI in real estate interacts with policies, and it will provide a possible research methodology for further studies on FDI.

1.6.2 Policy Relevance

Real estate and FDI are both important fields for urban development and management. As DiPasquale and Wheaton (1996) mentioned in their book, real estate market, including housing price, rent and supply, may structure the density, the industry distribution and the economy of metropolitan area. Foreign investor with FDI in host real estate markets are essential actors, so that they are closely related to urban development. Besides, in China, real estate investment was responsible for 30% of the total investment volume (National Bureau of Statistics of China 2014), which means this sector is an essential field when dealing with wealth creation and urban competitiveness. As one of the main outcomes of this research will be a series of policy recommendations for Chinese central government and local policy makers to cope with policy implementing and evaluating on FDI in real estate market, it is helpful for them to understand the policy effectiveness and to clarify policy implementation degree in FDIRE field. Results of policy effect will be clearly interpreted based on economy context, and reasons are also to be found to explain these results. With the expectation to help Chinese governments to improve FDIRE policy implementing processes or methods, the final conclusions will be both in country and urban level.

1.7 Scope and Limitations

1.7.1 Scope

As this research is mainly focused on quantitative method with several panel data regressions, several data scopes should be outlined here. Firstly, geographical scope (Figure 3) of this research are provinces in China, including 11 provinces in the eastern area, 8 provinces in the middle region, and 12 provinces in the west of the country (NBSC, 2016). Secondly, data used for panel data regressions are from 2000 to 2014 according to the database of National Bureau of Statistics of China (2016). Thirdly, the foreign investment that the research includes in policy history review and quantitative analysis is limited on FDI, excluding stock investment and other indirect investment from abroad.

Figure 3 Economic geographical scope of the research: three main parts of China

SOURCE: Author, 2016 based on information from National Bureau of Statistics of China, 2016

1.7.2 Limitations

One limitation is that FDI policies released by Chinese government during 2000 to 2014 may differ from emphasis on various types of real estate, including residential, commercial and industrial properties. But the dependent variable is the overall FDI in real estate, which ignores these problem and may cause reliability weakening of the results. Another limitation can be several policies released in the same year, or several policies released among continuous years, which will add challenges when forming policy implementation index and regression models.

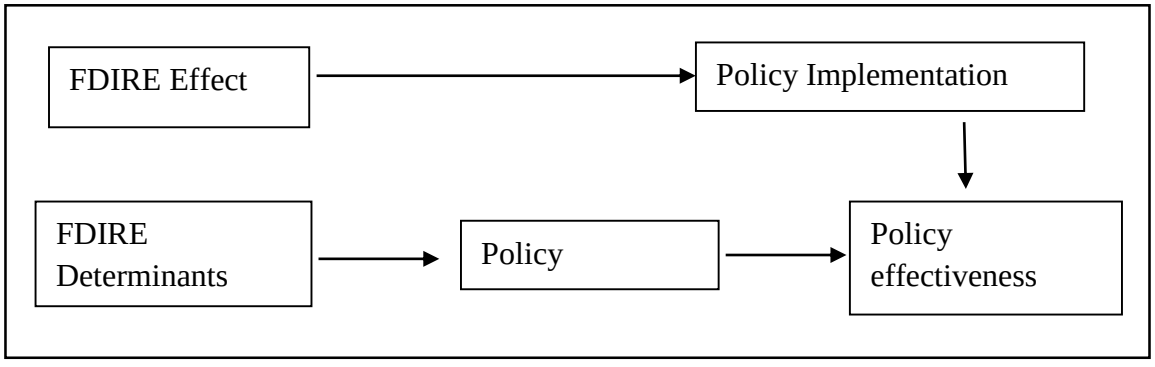
Chapter 2: Literature Review

In the 1970s, Foreign Direct Investment (FDI) captured people's attention, because the world experienced a sharp growth of global capital interaction between 1950 and 1980. Meanwhile, academic publications related to FDI also increased, although most of them were focused on determinants of these foreign investments in developed areas such as the United States and Europe (Agarwal, 1980). Studies on FDI connected with heritage, multinational firms and importance of monetary policy were worked out by Stevens (1974), Hymer (1976) and Ragazzi (1973), paving a way for further exploration of FDI. According to Agarwal (1980), the increasing number of hypotheses were grouped into four pillars. The first two are determinant analysis, based on perfect or imperfect competition market respectively. The third one is region or industry selection, following the fourth group related to FDI attraction and restriction. This thesis falls on the fourth area.

In terms of Foreign Direct Investment in Real Estate (FDIRE), studies mainly started to appear in 1980s. FDIRE study is more linked with portfolio theory, which was proposed by Markowitz (1959). Nevertheless, studies about FDIRE did not gain much attention until the late 20th century when scholars began to analyse FDI level (Dunning, 1988) and geographical disposition of these investments (Woodward, 1992). For example, one study found out some indicators that might affect FDI location across America, based on data from 1979 to 1983 (Bagchi-Sen and Wheeler, 1989, Gerlowski, Fung, et al., 1994).

However, FDIRE research in China grew even more slowly than in the U.S and Europe. After the Asian Financial Crisis in 1997 and China joining in World Trade Organization (WTO) in 2001, FDIRE publications experienced a boom. Determinants of FDIRE level and location, such as GDP growth rate and other fundamental indicators, are already explored by many literatures (Cheng and Stough, 2006), while only a few articles have included policy and governance into these factors (He, Wang, et al., 2011). Policy evaluation is the main target area for this thesis to work. In order to access to the main research target of this paper, a review of literature is organized as follows.

Figure 4 Framework of literature review



SOURCE: Author, 2016

2.1 FDIRE Effects

The first step of literature review is to clarify FDIRE effects and then find out why policies are issued by governments. However, before reviewing works on FDIRE effects, there are many definitions of FDI in different publications. The FDIRE inflow in this paper refers to real estate foreign direct investment announced and utilized by government in the host country, which can achieve more assets and lower unemployment rate, excluding speculating activities (Salem and Baum, 2016, Ball, Lizieri, et al., 1998). According to benefits and weaknesses of FDIRE in host countries, government policies differ from stimulation emphasis or restriction emphasis based on economy conditions during different time periods. From 1991 to 2002, there were more than 1500 policy changes made to stimulate FDI inflows, while less than 100 policies were issued to restrict it in host countries (UNCTAD 2003).

2.1.1 Benefits of FDIRE

Since globalization began to act as one of the main actors in country development, the exploration of FDIRE benefit is a continuing effort. For investors, as FDIRE research triggered by portfolio theory, one of the initial and the most important advantages for foreign investor is the diversification benefits to get stable rate of return by holding foreign real estate property (Ross and Webb, 1984). Based on panel data from 1958 to 1979 of 14 countries, Ross and Webb applied CAPM model and concluded that real estate had less systematic risk, so that it could be applied as a tool by portfolio managers for diversification. Another important function of FDIRE is to hedge currency risks for investors according to Ziobrowski and Boyd (1991).

For countries and cities that want to actively attract and stimulate FDI in real estate sector through policy instruments, scholars also worked out important reasons and explanations. Firstly, according to Jiang (1998), foreign direct investment, no matter in real estate sector or other related industries, can prevent local real estate market from macro-economy fluctuation. The author also reaches a conclusion that portfolio investment is a more essential character for FDI in real estate compared with other industries. Secondly, investment from foreign countries benefits domestic economy growth and wages for workers. FDI in different industries are found to be vehicles for high-technology transformation, and FDI may contribute more than domestic investment, as long as the invested city has proper capability to absorb it (Borensztein, De Gregorio, et al., 1998). The attendance of these investment can have positive effect on workers' wages and improve it above market-based average, especially in developing countries and cities (Lipsey and Sjöholm, 2005).

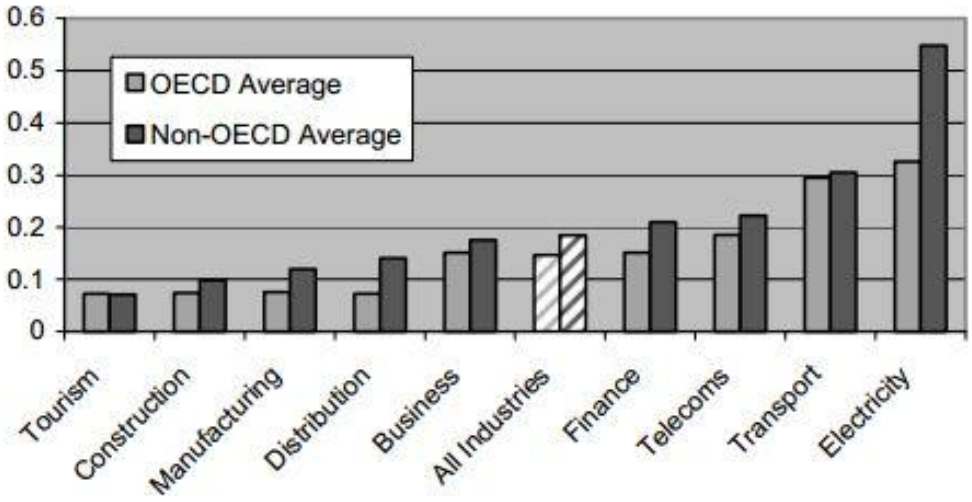
From a more specific perspective in Chinese cities, firstly, Weng and Liu (2005) explained advantages for local real estate development market and firms to use foreign investment. They state that the real estate sector can establish a "self-running system"

to avoid investment risk spreading, which means real estate foreign investors can improve flexibility when choosing capital resource and establishing financial structure. Secondly, Weng and Liu argue that foreign companies can also take part of the financial risks for domestic investors when bad condition appears in financial process that is closely linked with capital market in China. Thirdly, FDIRE also flows in China with advanced investment opinion and new financial derivatives such as Real Estate Investment Trusts (REITs), accelerating the speed of Chinese real estate market to connect with the worldwide market in profit and risk sharing. Additionally, real estate firms can achieve a more sustainable development through improved capital structure and operation capability of employees. For example, foreign companies may take part in broker business of real estate trading which is now not developed enough among Chinese firms compared with abroad area (Han and Zhu, 2006).

2.1.2 Weaknesses of FDIRE

Along with the increasing amount of FDI, its marginal effect for the host country is diminishing. In some conditions, FDI even spills over domestic investment when foreign companies hire high-qualified workers with higher wages, leaving only poor-skilled employees to domestic firms (Lipsey and Sjöholm, 2005). Yang and Shen (2002) put forward an investment model, testing the squeeze-in and squeeze-out effect of FDI in China based on data from 1983 to 1999, and find out that FDI crowded out domestic investment by heating up market competitiveness, and it also arose slightly negative externality on macro-economy. Additionally, FDI may also cause environmental pollution and excessive energy consumption in host countries, especially for developing markets (Cao, 2010). Consequently, governments from different countries released policies to regulate FDI in their local industry markets with different restriction degrees.

Figure 5 Regulatory Restrictiveness Index by Industry, OECD and Non-OECD Average



SOURCE: OECD's FDI Regulatory restrictiveness Index, 2006

To be specific in FDI in real estate market, several negative effects have been found by researchers, explaining why governments of most countries have released policies to restrict and monitor FDIRE. Firstly, investment with speculation or arbitrage

motivation in real estate cannot be clearly recognized, so it may arise bubbles in real estate market and even impact negatively for the whole capital market in the host country (Lv, 2007). Secondly, for ensuring higher rates of return, large parts of FDIRE concentrate on luxury residential or commercial real estate projects, not the high-demanding affordable housing, broadening the gap of imbalance between demand and supply (Han and Zhu, 2006). Thirdly, when the economics conditions began to decrease in host market, foreign investment would flow out quickly to avoid financial or credit risk, leading to the burst of real estate bubble and severe shocking of capital market (Li, 2015).

2.2 Determinants of FDIRE in Host Market

In order to include important control variables in the research model of this thesis, determinants found by scholars that can significantly effect FDIRE inflow should be reviewed here. According to Dunning's eclectic theory (1980), the paradigm that can explain foreign investors' decision to invest cross borders is OLI. OLI refers to ownership, location and internationalization advantages. One explanation of this theory is that the host countries and cities must provide advantages to encourage firms to enter their local market rather than just exporting products. This is a natural supportive point for real estate because it cannot be exported, and the supply of local products is an essential pre-producing process before real estate investment (Norman, 2001).

2.2.1 Economic determinants

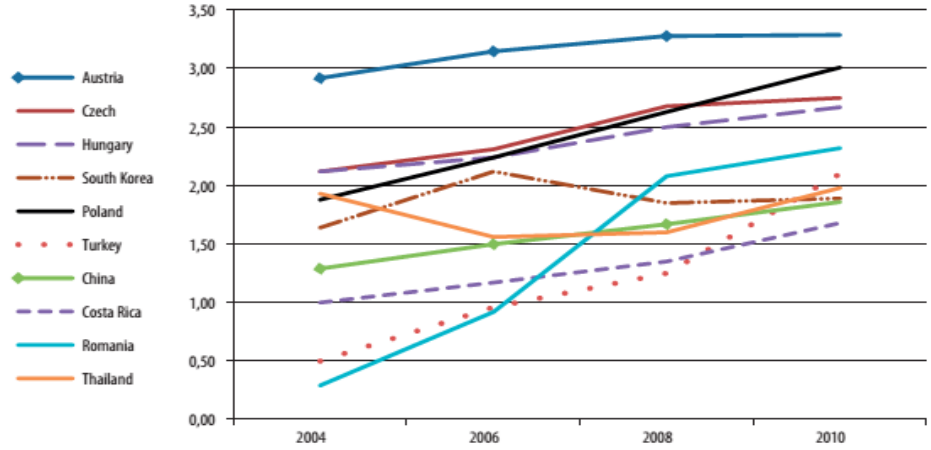
Economy related factors are always acting as important roles in determinant research of FDIRE. According to literatures, real GDP, income level, market size of host countries and cities, rate of return and labour cost have positive relationships with real estate investment from abroad (Cushman, 1987, Culem, 1988, Grosse and Goldberg, 1991, Moshirian and Pham, 2000). Besides, economy influential scale is also emphasized by Culem. He stated that influential scale of a city can be one of the main factors considered by foreign investors, which means that to some extent, it can reflect competitiveness and network building of the host market. Another article focused on emerging market notes that education degree, standard of living and larger institutional real estate market also contribute to higher FDIRE (Salem and Baum, 2016).

2.2.2 Non-economic determinants

Another group of indicators are more correlated with non-economic aspects. Several researchers found that foreign investors prefer to locate cross-border real estate investment on markets which can get higher scores on information transparency (Figure 6) with more professional market participants. Scholars believe that transparency can reduce information and operating cost for foreign investors, achieving better performance in host real estate market (D'Arcy, Tsolacos, et al., 2005, Eichholtz,

Gugler, et al., 2011). This opinion is tested again by Salem and Baum (2016) that location advantages, especially the "recurring costs of being foreign" in host market because of information asymmetry, may reduce investment from abroad. Institutional context and regulatory fences are also considered to be important pillars influencing FDIRE of a country or city. To clarify it, a publication by Holsapple in 2006 states that host markets' political indicators (fiscal, monetary policy, political risks, regulations and laws) will be considered by investors when choosing investment locations.

Figure 6 Real estate transparency scores in some of the countries



SOURCE: JLL Real estate transparency index (2004, 2006, 2008, 2010)

One indicator that should be mentioned here is Bandwagon Effect of foreign real estate investors, which arises controversial discussions among researchers. Several articles have worked on this area and conclude that investors may follow their peers to invest abroad and may hold spatial bias (D'Arcy, 2009). But Bandwagon Effect is not limited in real estate industry, Goldberg and Johnson (1990) found that FDI from multinational banks and other associated industries can attract further real estate FDI into the host market, based on analysis about real estate investment from United States in the 1980s. However, other scholars disagree with this opinion, such as Fuchs and Scharmanski (2009). They argue that rational decisions can be made by investors only according to company strategies and conditions.(Goldberg and Johnson, 1990)

2.2.3 Unique determinants and spatial distribution differences of FDI in China

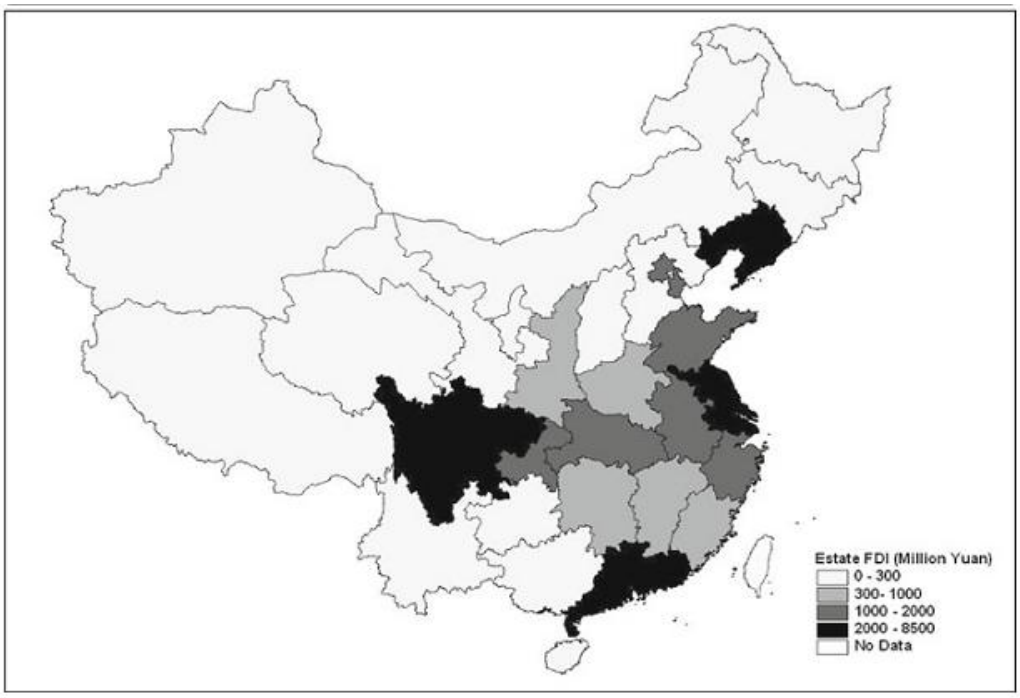
The last group of concepts that this thesis wants to involve includes several Chinese unique determinants of FDIRE and spatial indicator. China is experiencing a transitional process from government-oriented market towards a more market-oriented one.

Firstly, for unique determinants mentioned above, from an opinion of Li and Park (2006), Chinese real estate market distinguishes significantly with other regions because of institutional changes and economy reform, including decision-making authority decentralization (Qian and Weingast 1997). Land commercialization,

enforcement from law, and proper local governance are tested to be important fields for real estate foreign investors by He (2006).

Secondly, as for the spatial distribution differences of FDI, HE mentioned in one published articles in 2009 that it was the local government enforcement power which varying from one city to another, not the legislative power of central government that had great effect on FDIRE distribution in China (Figure 7). Another three scholars, Lu, Tao and Du (2008), also test FDI location choice in China from American companies. They described that FDI distributed unevenly in China and the east coast area takes "the lion's share". This imbalanced location of FDI can be effectively explained by regional openness level, industry agglomeration and governance capability of different cities. Consequently, spatial factor should also be included into the policy evaluation variables in the conceptual framework of this thesis.

Figure 7 Provincial distribution of FDI in China's real estate development 2007



SOURCE: HE, 2011

Since the research objective and main research question are more focused on whether policy has had significantly effect FDI in Chinese real estate sector in the past 15 years, the following literature review will concentrate on existing studies of policy importance controversy and regulation pillars.

2.3 Policy Effectiveness Controversy

Policy effectiveness study related to FDI is divided into two groups. The first group of scholars hold that policy does not have significant effect on FDI, such as Green and Cunningham (1975) and Reuber et al. (1973) in the early period of FDI research. They specified political instability as a relatively less important indicator influencing FDI

inflow in developing countries. The policy incentives, such as income taxation exemption, are also not considered by foreign investment providers when making decisions based on a survey evidence by Aharoni (1966), especial during the early period of a cross-broader investment program. Furthermore, incentives provided by host governments may be restrictive on ownership, size and locations etc., so that investors from abroad must fulfil several limitative conditions to be eligible to get these incentives (Situmeang, 1985). One current research on real estate sector for eight MENA markets by Salem and Baum (2016) find that although some of policy indicators are surly to have significant positive or negative impact on FDIRE, but results from quantitative models based on these countries' data indicate government policy did not show significant influence on these investment in Africa.

However, another group of researchers have worked out many evidences to oppose the insignificant opinion. Agarwal (1980) mentioned that some early researches included political factor when they working on FDI, because scholars at that time believed that investment and capital flow more slowly from richer countries to the third world, and this phenomenon could get more explanation on noneconomic factors than economic determinants. Stronger regional governance, as a factor involved in this kind of studies frequently, is the most important concept this thesis wants to explore. Several scholars, including He who has been mentioned in the above dissertation, states that FDIRE in transitional markets prefer better regional governance (Fu 2000 and He 2009). Empirical results from data of FDIRE inflow (from 2000 to 2007) in province level in China, show that favourable market institution and good local governance significantly influenced FDIRE in that period. Investors also prefer areas with less public intervention from government for market, higher awareness of local policy makers to protect property rights, better legal infrastructure establishing and stronger law protection. Moreover, institutional quality is mentioned to have inter-relationship with economy agglomeration, which has been mentioned above to affect FDI location choice in China (Du 2016).

Other important governance related factors are real estate registration restriction and uncertainty regulatory system of foreign real estate investment rules or laws. Restriction and unclarified regulation may confuse investors and weaken their confidence. Policymakers in host countries and cities should not only consider technological and economy improvements, but also take into account of how to establish foreign real estate investment regulation system and reduce real estate registration in a proper process (AHMAD, MEI, et al., 2015, LaSalle, J. L., 2008). Two unique policy indicators that have been showed to be significant for FDIRE in China are land commercialization and housing marketization, which triggered momentum and stimulated the inflows of FDIRE during 1992 to 2000 (He 2009).

Based on the controversial arguments above, this research is going to test whether restriction and stimulation policies released by the government did have influence on

FDIRE inflow in China, through clarified history of policy changes from 2000 to 2014 and the implementation degree of these policies.

2.4 Policy Approaches in FDIRE Regulation

The main research question is to find whether policy can significantly affect FDIRE, consequently, previous studies exploring into FDIRE policy intervention pillars should be clarified.

Wen et al. summarized in their work published at 2005 about regulation fields foreign countries usually involved in FDIRE policy, according to their researches of laws, policy files and IMF reports in different countries. They divided them into seven main pillars. The first pillar is regional regulation of foreign companies' investment or purchase of real estate. The amount of square meters and the total amount of money are respectively the second and third pillar in their article. Then it comes to foreign investors' identity or qualification authentication, being the fourth aspect, which is linked with market entry regulations and laws. The fifth pillar is about usage of foreign direct investment in real estate, such as policies released by Finland and Australia. The percentage and the holding period of real estate property owned by foreign investors are also introduced by the United States and Australia, etc.

In terms of China, Yu (2007) states that the policy file issued in 2006 is the main oriented regulation destination that Chinese government wants to intervene. The regulation policy can be divided into two fields which are market entry regulation and taxation. To be more specific, according to studies and policy files released, three regulatory pillars are related to market entry. Firstly, distinguishing different types of FDIRE is usually the first step to regulate investment. Secondly, financial regulations, such as credit or loan restriction and capital structure of foreign investors, are another essential area to reach. Thirdly, foreign exchange settlement is also mentioned in policy files about its settlement process. Taxation is another common filed to restrict or stimulate foreign investment, which has been tested by many studies. In China, local government usually include taxation discount offer in their policies to attract more foreign investment (Rao and Liu, 2007, Yin, 2006).

2.5 Policy Implementation Measurement

Heritier (2003) states in his research about politics and society that involving more affected actors should be considered when working on policy capacity, and to some extent, it can be represented by department participation in policy making. This opinion consists with the theory of negotiating democracy that the more stakeholders included in policy making period, the less problematic the legitimatory basis of the policy is. Choices among different modes of governance based on political transaction theory

(Epstein and O'halloran, 1999) is another essential factor significantly affecting policy effectiveness.

Existing studies working on policy effectiveness have concentrated on fiscal or monetary policy which can be represented by annual fiscal budget of government, or reflected by M1 in the market circulation. Models used on these studies are VAR model, Granger causality test, cointegration and vector auto-regression method (Kuttner and Posen, 2002, Yan, Liu, et al., 2009). However, one indicator that these studies taking into consideration in policy effectiveness measure is policy transparency. According to Eijffinger and Geraats (2002), monetary policy transparency can be measured through an index based on a series of indicators, including administrative transparency and operational transparency, etc. Xu (2006), one scholar from China, also applied this model to evaluate policy transparency. He established a four-pillar index involving target transparency, economy data transparency, decision making transparency and predictable transparency. All these pillars are also measured by sub-indicators respectively. Through empirical research based on data from 1985 to 2005 in China, Xu concluded a positive relationship between monetary policy effectiveness and transparency (Xu, 2006).

In terms of policy enforcement degree, in one determinants research of FDIRE by He et al. (2011), policy variables are also measured by other figures provided by governments. For example, the local public intervention degree in local economy is represented by annual fiscal expenditures of each province. Local law enforcement which is beneficial for policy implementation is reflected through the ratio of amount concentrated on social security organization, prosecution organization and local courts. These indicators are also measurements of policy implementation degree, which should be considered in the research models of this thesis.

2.6 Literature Summary

Literatures of FDI were driven by the increasing number of cross-border trading that countries involved in worldwide scale. This research field achieved its booming from the beginning of the 1970s. However, studies about FDIRE were pushed ahead only after FDI researching into a more detailed filed in the late 1980s, following the portfolio theory and the spreading of capital globalization trend. Essays published by Stephen Hymer on FDI analysis of multinational enterprises in 1976 and Dunning on eclectic paradigm of FDI in U.S in 1988 are among the most influential studies to pave the way for further FDIRE research.

Reasons why China and Chinese cities, or other developing regions want to attract and stimulate FDIRE in their local markets are also found in some existing studies. FDIRE can prevent local market of host country from violent fluctuation with macro-economy environment. It also benefits economy growth and workers' wages, especially in

developing host areas (Borensztein 1997 and Tomohara 2010). Specifically, for Chinese real estate market, FDIRE can help local companies establishing "self-running system" through risk sharing and capital structure re-organization, connecting more with worldwide capital market in the globalization process. However, restriction policies can also be issued by government because of the negative influence that FDIRE may impact on its local economy, including crowding out domestic investment, causing bubbles in real estate market and broadening the gap of imbalance between housing demand and supply.

Determinants for host area choosing are found out after FDIRE benefits and weaknesses being clarified. Except for common indicators such as GDP per capita, exchange rate, material cost and market size being acknowledged having significant effects on FDIRE, policy influence has aroused controversial discussion. Consequently, the effect of restriction or stimulation FDIRE policies released in China during 2000 to 2014 is going to be tested in this thesis. Besides, some studies point out that FDI and FDIRE inflow is located unevenly in China because of economy agglomeration, so spatial variable is another factor that should be considered when doing regressions to test FDIRE policy influence.

Although there are controversial discussion, policy or regulation is discovered to be an important part for government to stimulate and monitor FDIRE, especially in a transitional Chinese real estate market. The pillars that Chinese government already involved in FDIRE policies are market entry (distinguishing different types of FDIRE, financial regulations and foreign exchange settlement) and taxation.

As for how to measure policy implementation degree, two aspects are found by existing studies. One is policy transparency, while another is policy enforcement. Both factors should be quantified and included in the model of this thesis to form effective policy indicators in regressions together with dummy variables representing policy issuing time.

Except for the topic content itself, research methodology of these studies can be divided into two groups. For articles investigating into policy field, or in the early researching period before the 1990s, the main research process is qualitative method, including case study, surveys, interviews and cross-case comparison. Quantitative method, as another methodology used especially in determinant exploring and spatial differences analysis after 1990.

2.7 Conceptual Framework

2.6.1 Conceptual Framework description

The dependent variable of this paper is foreign direct investment in real estate market (FDIRE) in China. As for the independent variable, there are three groups of variables to be considered, including a group of control variables and one main research variable.

The first group of variables are determinants that reflect different regional context. At the beginning of this research, according to the existing literatures, economic indicators can have significant influence on FDIRE. Cushman (1987), Culem (1988), Grosse (1991) and Moshirian (2000) stated that GDP, income level, material cost, market size and rate of return were main factors should be considered as control variables when research into FDIRE.

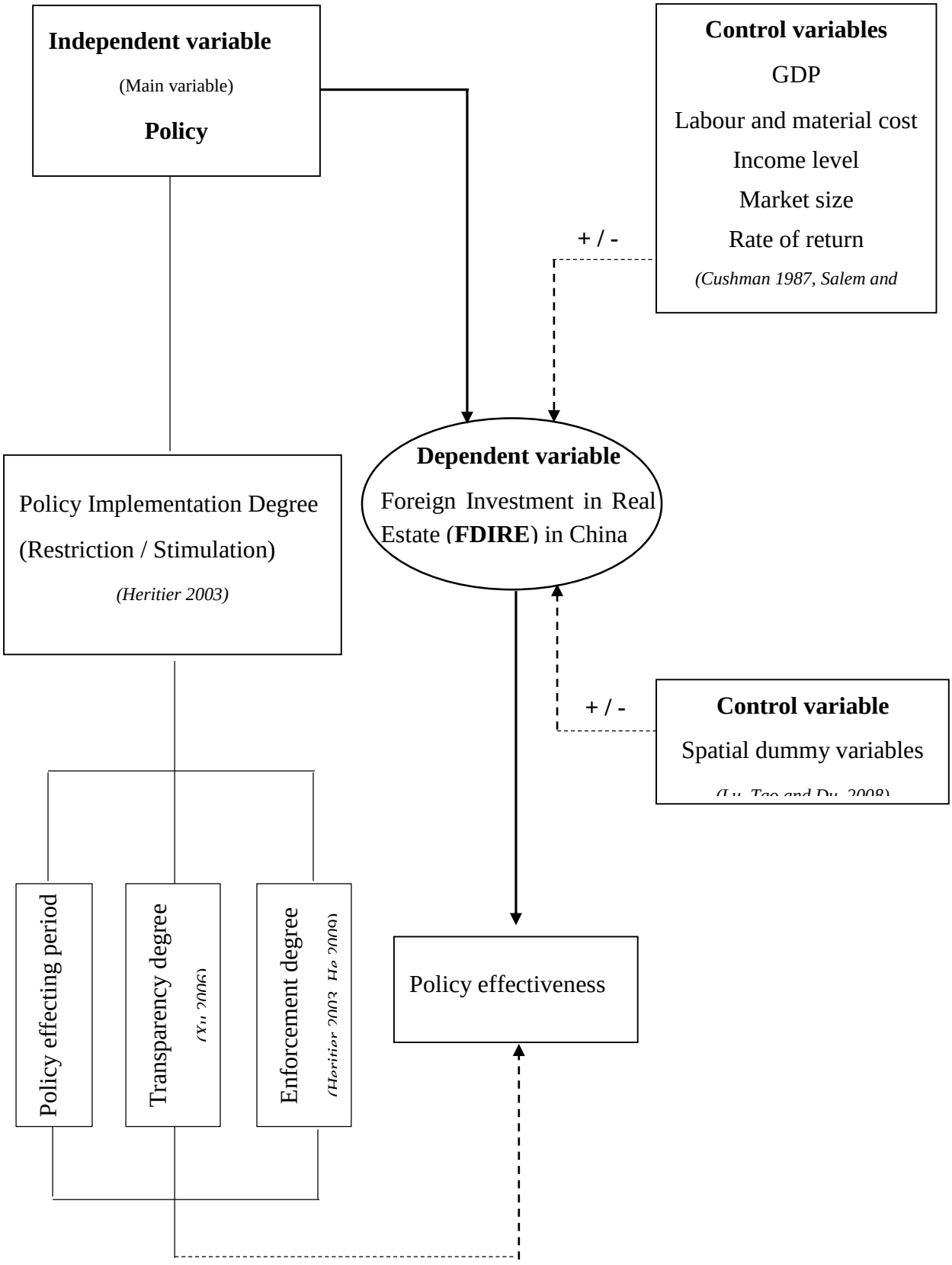
Secondly, some scholars give an opinion that spatial distribution of FDIRE in China is uneven, varying from eastern area to the west because of openness level and economy agglomeration (Du, Lu, et al., 2008). Variables representing spatial locations of these provinces will be tested in regressions, to find out whether FDIRE policy effectiveness showed any spatial difference during 2000 to 2014.

The main research process of this paper is non-economic indicator testing that related to policy regulation. However, based on the consideration that FDIRE policies released in different time may have different emphasize level or influential scale, a series of indexes should be established and used to weight these policies. According to previous studies, indexes include three parts, which are policy effecting time period, policy transparency and enforcement degree (Fu 2000, He 2009 and Yu 2007).

The outcome of this research will be whether the restriction or stimulation policies released in China about FDIRE have significantly influenced the amount or the growth rate of FDIRE inflow between 2000 and 2014. To improve FDIRE policy effectiveness in China, some recommendations based on spatial factor and policy implementation degree will be made for local governments.

2.6.2 Conceptual Framework Figure

Figure 8 Conceptual Framework



SOURCE: Author, 2016

Chapter 3: Research Design and Methods

3.1 Research Questions Review

To begin with the research design and method description of this thesis, objectives and research questions should be reviewed here.

The main objective of this thesis is to work out whether the restriction or stimulation policies released FDI in real estate sector in the past 15 years have had a significant effect on FDIRE inflow of China. In addition, this thesis has a number of sub-objectives. Firstly, to understand the nature of major policies released by Chinese government related to FDIRE in the past 15 years, and to construct a timeline. This timeline forms the basis of the remaining research. Secondly, to clarify the degree of implementation of each policy identified. Thirdly, to test the policy effectiveness of each policy. Fourthly, to find out spatial differences in FDIRE policy effectiveness between Eastern, Central and Western regions of China between 2000 and 2014.

Main research question: did restriction or stimulation policies significantly affect FDIRE inflow in China between 2000 and 2014?

Sub-questions are:

- What were the restriction or stimulation policies of FDIRE released in China from 2000 to 2014?
- To what degree were these FDIRE policies implemented?
- To what degree were these FDIRE policies effective?
- Was there any spatial difference of FDIRE policy effectiveness among Eastern, Central and Western regions of China between 2000 and 2014?

3.2 Operationalization

Based on the research objectives and problems of this thesis, together with literatures being found, the dependent variable (Y) can be defined as foreign direct investment inflow in real estate market announced and utilized by government in host country annually, which can achieve more assets and lower unemployment rate, excluding speculating activities (Salem and Baum, 2016, Ball, Lizieri, et al., 1998). Data come from annual FDIRE inflows between 2000 and 2014 in province level. There are 31 provinces included in this research, excluding Hong Kong, Macao and Taiwan because of lacking data problem. Additionally, different measures can be used to represent FDIRE inflow in China, except for total amount of inflow, annual or year-on-year growth rate will also be reasonable to represent FDIRE fluctuation. As for the number of observations, there are 375 (25 provinces multiply 15 years) observations for each dependent indicator showed in Table 1 below.

Table 1 Dependent Variable

Concept	Variable	Indicators	Data type
FDI in real estate sector	Overall FDIRE	Annual amount of FDIRE from 2000 to 2014 in province level	Ratio

(continued on the next page)

(continued)

	Growth rate of FDIRE	Annual growth rate of FDIRE from 2000 to 2014 in province level	Ratio
		Year-on-year growth rate of FDIRE from 2000 to 2014 in province level	Ratio

SOURCE: Author, 2016

Independent variables (X) are divided into three parts (Table 2). Firstly, economic determinants are involved as control variables. Secondly, two spatial dummy variables are to represent different regions that provinces come from.

Policy is the main variable that this thesis is going to study, and it will be measured through four pillars. Firstly, policy type variable is to divide policies to restriction group or stimulation group. Secondly, for each policy, it will be a dummy variable representing its policy effecting year, in other words, it represents the time period from the releasing year to policy expired year. Thirdly, policy transparency is one of the three pillars that should be combined into a total policy index. According to Xu (2006) and Hahn (2002), policy transparency can be summarized into three parts, which are objective transparency, information transparency of policy implementation and decision making transparency. Fourthly, another variable to form a total policy index is policy enforcement degree. Policy enforcement degree reflects mechanisms that can monitor or guide policy implementation, which involves government intervention, legality monitor and department participation (He 2011). Independent variable matrix can be established as follows.

Table 2 Independent Variables

Concept	Variable	Indicators	Data type
Control variables reflecting different provincial context	GDP	Annual GDP	Ratio
		Annual GDP per capita	Ratio
		Annual growth rate of GDP	Ratio
	Consume level	Average wage of worker	Ratio
		Annual CPI	
	Material cost	Annual PPI	Ratio
			Ratio
	Market size	Population	Ratio
	Rate of return	Fixed asset investment rate of return	Ratio
Policy	Policy type	Restriction policy or stimulation policy	Nominal
	Policy effecting time	the time period from the releasing year to policy expired year	Dummy variable

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(continued)

	Weighted index : Policy Transparency	Clarified & measurable target	Dummy variable
		FDIRE information available: whether government provide the information of policy implementation or target completion progress	Dummy variable
		Decision making transparency: whether government provides meeting minutes	Dummy variable
	Weighted index : Enforcement degree	Number of government departments involved in the policy releasing	Ratio
		Annual fiscal expenditures	Ratio
Spatial regions	Location of a certain province	Spatial location of a certain province on eastern, central or western China	Dummy variable

Source: Author, 2016

3.3 Research strategy and methodology

3.3.1 Research strategy chosen and explanation

The main strategy of this research is secondary quantitative data analysis with panel regressions. This strategy is chosen for the following four reasons. Firstly, quantitative analysis with several regressions through STATA will be used in the following research process. The data used in this process are from a large geographic scope in 25 provinces of China, with more than 20 measurable indicators. Secondly, this thesis is more concentrated on breadth than depth. The main objective is to find out whether restriction or stimulation policy had significant effect on FDIRE in China, in other words, it is not the effect mechanism, but the general relationship between policy and FDIRE that is the main target of this thesis. Thirdly, to achieve the main research objective, FDIRE amount or growth rate between 2000 and 2014 is the dependent variable, which means changes over a period time will be tested in the following process. According to Verschuren and Doorewaard (2010), panel research can work well in fluctuation exploring within research units. Fourthly, the data of dependent variables and independent variables, such as annually amount of FDIRE, GDP and population, can be found in the existing database offered by National Bureau of Statistics of China (2000 to 2014). Consequently, from these reasons described above, secondary quantitative data analysis is suitable for this research.

However, before carrying out panel data process, the history of restriction or stimulation FDIRE policies released over 2000 to 2014 should be clarified as the timeline basis for

quantitative regressions. Meanwhile, primary data should be collected to quantify policy implementation degree. These data are not available directly in the existing database.

3.3.2 Strategy implementation

Several steps and regressions should be done to test whether policies had influenced FDIRE inflow during the past 15 years. Firstly, all the policies directly related with FDIRE should be listed (excluding indirect policies, such as tax incentives). The next step is to find out each policy's effecting time and then weight them based on implementation degree and transparency to form a total policy index and combines policy indexes according to the year. Finally, put economic determinants, spatial dummy variables and policy indicators in one panel regression model which is going to be displayed in the following text.

3.3.3 Limitations and challenges

There are some limitations using secondary database and quantitative research process. Firstly, the average investment rate of return of real estate development project for foreign investor is not available in the existing database. It can be represented, to some extent, by ROE (Return on Equity) of real estate development firms, which can be calculated through data (Net Income/Equity) provided in NBSC database. However, although it also reflects the profit earning in Chinese real estate market, ROE is not the actual average investment rate of return for foreign investors. If this indicator has significant effect on FDIRE in China, the data used may influence the validity of results. Secondly, for the policy enforcement degree, number of government departments involved in the policy releasing can reflect policy participation and how important a policy is, but it cannot represent how many departments actually contribute to its implementation. Besides, expenditures concentrated on public security agencies, prosecution agencies and courts by provincial governments are not available from 2000 to 2007, but expenditures on general public services are provided. General public services includes cost on public security agencies, prosecution agencies and courts, but it also involves other government related departments, such as wages for officers who work in the City Hall. Thirdly, some data of provinces in western China are missed, consequently, plenty of work should be done on missed data collection, or a few provinces will be excluded in the regression, which may influence the validity of this research.

For the most urgent challenge to be conquered, policy index is a complex variable that combines with transparency, implemental degree and time. A method is to be found to form a valid and reliable index. Secondly, this thesis will research into several policies released by Chinese government. However, several policies may come out within a same year, so the effectiveness of these policies may interact with each other. One solution of this problem is to combine these policies and their policy indexes as a total policy index indicator to represent policy implementation degree of that year. Thirdly, these policies are all implemented across the mainland of China, but this research is based on panel data. Therefore, policy indexes should also be panel and vary according to different provinces and years. This challenge can be solved through combination of policy indexes and annual fiscal expenditure in provincial level.

3.4 Data collection methods

Most of the data reflecting economy conditions and spatial regions are from existing database. Firstly, secondary data from NBSC will be annual data from 2000 to 2014. This kind of data

are mostly economic determinant measures, such as GDP, population and CPI index. Secondly, for the dummy variables representing provinces location region (on the eastern, central or western China) will be set as D_1 and D_2 (if D_1=1, it means the province locates in the east; if D_2=1, it means it locates in the central China; neither, it means in western China). According to NBSC (2016), 11 provinces are divided into the eastern area, 8 provinces in the middle region, and 12 provinces in the west of the country. Thirdly, some data is not available in NBSC, but can be calculated based on existing data, such as FDIRE annual or year-on-year growth rate.

For policy indicators, more work should be done to quantify policy transparency and policy enforcement degree. To prepare data for dummy variables representing policy type, releasing time and transparency index, policies released between 2000 and 2014 should be reviewed to find out their main target and information availability. For example, if a policy has a clear and measurable target, its representing dummy variable $D_{index,\ t}$ will be set as 1. For policy enforcement index, data reflecting department involved in policies are accessible through policy file review, and the fiscal expenditure data is available on NBSC website.

3.5 Validity and reliability

This research process can be repeated following steps described above, and it also can be popularized to other FDI policy effectiveness testing programs in different countries, because all economic determinants, spatial indicators and policy indexes can be found and set according to various economic and political context.

As for the internal validity of this research, results of panel data regressions will show whether policy indicators are significant, then the main research question can be answered. Furthermore, significance of spatial indicators in regression result forms are related to the third and fourth sub-questions, contributing to achieve final policy recommendations for Chinese government. For the first two sub-questions, economic context and policies released by government during 2000 to 2014 will be described. Every policy will be clearly reviewed with its releasing departments, policy target and information availability. However, validity challenges should also be mentioned. Since there are plenty of indicators affecting FDIRE, missing determinant may cause statistical problems when doing regressions. Moreover, policy implementation degree is a complex concept that remains to be explored in FDIRE area.

For data reliability, most of them can be found in the database in online website of NBSC, and they are all official data offered by central government of China. Moreover, the data used cover different regions in China, which can also contribute to research reliability. One challenge for data reliability is on policy primary data collection. “Clarified and measurable target”, as one of the indicator related with policy transparency, may be subjective to some extent, because whether the target of a policy clear or not is based on researcher’s judgement, therefore this indicator should be treated carefully and critically.

3.6 Analysis methods and techniques

According to the secondary data collected from existing NBSC database, most of the data for dependent variable and control independent variables can be found, except for several missing data after 2009. For validity and reliability consideration, these data will be eliminated before regression. The overview of analysis methods is displayed below.

Table 3 Data analysis methods

Research Question	Data used	Method	Tool/ Software	Outcome
1. What were the restriction or stimulation policies of FDIRE released in China from 2000 to 2014?	Primary data	Policy file review	Excel	Policy effecting time; policy types; policy target; government related report
2. To what degree were these FDIRE policies implemented?	Primary data	Policy index calculating	R/ Excel	Policy implemental index
3. To what degree were these FDIRE policies effective?	Primary and secondary data	Panel data regression	STATA	To what extent that policies have significantly affected on FDIRE inflow between 2000 and 2014 in China
4. Was there any spatial difference of FDIRE policy effectiveness between Eastern, Central and Western regions of China between 2000 and 2014?	Primary and secondary data	Interaction variable combining spatial dummy variables with policy indexes will be included into models.	STATA	Spatial differences of FDIRE policy effectiveness and explanation according to context

Source: Author, 2016

In order to work out all the research questions, fixed-effects models and random-effects models will be used in the following research process. Hausman test will also be done to find preference between fixed-effects and random-effects, which can contribute to research reliability. These two types of models are showed below.

Fixed-effects regression with robust:

$$\mathbf{Y}it = \beta_0 + \boldsymbol{\beta i}\mathbf{X}it + \boldsymbol{\alpha}i + \varepsilon it$$

Where

- Yit is the dependent variable (FDIRE) in province i at time t.
- Xit represents the independent variable in province i at time t.
- βi is the coefficient of independent variable Xi.

- αi is the unknown intercept for province i (province-specific intercepts).
- εit is the error term
- i = 1,2,3,⋯,n; β_0 is the constant term.

Random-effects regression with robust:

$$\mathbf{Y}it = \beta_0 + \boldsymbol{\beta i}\mathbf{X}it + \varepsilon it$$

Where

- Yit is the dependent variable (FDIRE) in province i at time t.
- Xit represents the independent variable in procince i at time t.
- βi is the coefficient of independent variable Xi.
- εit is the error term
- i = 1,2,3,⋯,n; β_0 is the constant term.

Chapter 4: Research Findings

4.1 FDIRE policies released in China from 2000 to 2014

With the spreading of globalization, the growing centre of Foreign Direct Investment inflow is shifting from developed to developing countries, and the Asia-Pacific region has risen people's attention because of its fast economic growth (Lu, 2007). China is one of the most important market in East Asia since its founding, and FDI in China experienced three main stages.

The first stage is from 1979, the beginning of Reform and Opening Policy in China, to 1991. According to Lu (2007), during this period, most of the investment projects were small and concentrated on basic industries, such as agriculture, energy and raw materials. Several policies were released by State Council to guild and stimulate these foreign capitals to flow to basic industries, including *Regulations on Joint Ventures Using Chinese and Foreign Investment (1983)* and *Provisions on the Encouragement of Foreign Investment (1986).* Since the year 1985, the implementation of housing reform policy, and the commercialization and monetization of real estate began to attract foreign investors to switch capitals into real estate market.

The second stage is between 1992 and 2000, with the channel of foreign investment shifting from loans (Indirect Investment) to Foreign Direct Investment (FDI). The amount of FDI increased sharply and spread to different industries. Chinese government released series of stimulation policies and incentives to attract more oversea capitals, especially to export and high-technology enterprises. Meanwhile, during this period, the FDI in real estate market also roared up and reached 8 billion US dollar, which was responsible for quarter of the total investment in Chinese real estate industry in 1994. However, with the Asia Finance Crisis in 1998, FDIRE in China experienced slightly decline and fluctuated around 5 billion until 2004.

Since 2000, the foreign investment in China entered into a stage of adjusting and restricting. With the recovery of economy and development of real estate market, oversea capitals that flew into real estate market backed to 6 million again, and spread from residential housing to commercial, industrial and tourism real estate. In case of bubbles and fluctuation of local housing market caused by foreign speculation capital, government released 17 policies to restrict FDIRE inflow between 2000 and 2014. Only one stimulation policy was released at the end of 2014. However, this stimulation policy only mentioned that recordation form of foreign real estate company should be changed from paper to electronic data. The registration and monitoring of these enterprises is still involuted and complicated (see Table 4).

Table 4 FDIRE Policies released between 2000 and 2014

Releasing Time	Name	Departments	Description
04/03/2002	①Catalogue of Industries for Guiding Foreign Investment (2002 Revision)	NDRC SETC (Has been abolished) MFTEC(Has been abolished)	Foreign investment admission of Chinese industries, including encouraged industries, restricted industries (RE) and forbidden industries.

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11/2004	②Catalogue of Industries for Guiding Foreign Investment (2004 Revision)	NDRC Ministry of Commerce	Foreign investment admission of Chinese industries, including encouraged industries, restricted industries (RE) and forbidden industries.
11/07/2006	③Opinions on Regulating the Access to and Administration of Foreign Investment in the Real Estate Market	Ministry of Construction\ Ministry of Commerce\ NDRC\ PBOC\ SAIC\ SAFE	The most important policy on FDIRE in China. It emphasize on market admission and monitoring of FDIRE, including purchasing and investing managing and restricting rules.
14/08/2006	④Relevant Issues Concerning the Implementation of the Opinions Concerning Regulating the Access to and Administration of Foreign Investment in the Real Estate Market	General Office of the Ministry of Commerce	Restriction rules on real estate foreign-funded enterprise type, total registered investment capital ratio, registration procedures mergers and acquisitions activities were clarified.
01/09/2006	⑤Notice on Regulating the Administration of Foreign Exchange in Real Estate Market	SAFE/ Ministry of Construction	Foreign exchange settlement restriction rules.
23/05/2007	⑥Notice on Further Strengthening and Regulating the Examination, Approval and Supervision of Foreign Direct Investment in Real Estate Industry	Ministry of Commerce/ SAFE	Implementing strict identification procedure of cross-border real estate companies. The amount of limitation in
10/07/2007	⑦Notice on Issuing the List of the First Batch of Foreign-Funded Real Estate Projects Having Passed the Procedures for Archiving with the Ministry of Commerce	General Department of the State Administration of Foreign Exchange	Foreign-invested real estate enterprises which were registered after 1st June 2007 cannot raise loans.
31/10/2007	⑧Catalogue of Industries for Guiding Foreign Investment (2007 Revision)	SDRC/ Ministry of Commerce	Foreign investment admission of Chinese industries, including encouraged industries, restricted industries (RE) and forbidden industries.
01/07/2008	⑨Notice on Doing a Good Job in Archival Filing of Foreign	Ministry of Commerce	The Ministry of Commerce shall authorize the competent provincial departments of commerce to check the archival materials on foreign investment in the real estate industry.

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	Investment in the Real Estate Industry		All foreign-funded real estate enterprises should be registered at the Ministry of Commerce.
08/07/2008	⑩Notice on Further Strengthening the Administration of Foreign Investment Projects	NDRC	Strictly executing the ratification system on foreign investment projects.
18/06/2008	⑪Notice on Doing a Good Job in Archival Filing of Foreign Investment in the Real Estate Industry	Ministry of Commerce	Part of the approval authorities were delegated to local governments from central government.
29/08/2008	⑫Notice on the Relevant Operating Issues concerning the Improvement of the Administration of Payment and Settlement of Foreign Currency Capital of Foreign-funded Enterprises	General Affairs Department of SAFE	Capital (RMB) obtained from the settlement funds should be used within government approved business scope. Except for foreign real estate enterprises, other companies are forbid to purchasing real estate for commercial use.
06/03/2009	⑬Circular on Delegation of the Authority to Examine and Approve the Establishment of Investment Companies by Foreign Investors	Ministry of Commerce	Provincial department of commerce should be responsible for the founding or important changes of foreign real estate firms which registered less than USD 100 million.
04/11/2010	⑭Notice on Further Regulating the Administration on House Purchase by Overseas Institutions and Individuals	Ministry of Housing and Urban-Rural Development/ SAFE	An overseas individual can only purchase one unit for his own living. An overseas institution which establishes a branch or representative office within the territory of China can only purchase non-residential properties for office work in the city where it registers, unless it is otherwise provided by any law or regulation.
22/11/2010	⑮Notice on Strengthening the Approval and Filing Administration of Foreign Investment in the Real Estate Sector	General Office of the Ministry of Commerce	Real estate enterprises established by foreign capitals cannot gain profits through purchasing or sale of built/ under construction real estate properties. Speculative investment is forbidden.
25/02/2011	⑯Notice on Foreign Investment Management	Ministry of Commerce	Foreign-funded enterprise concerned should handle the formalities at the relevant department.

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24/12/2011	⑰Catalogue of Industries for Guiding Foreign Investment (2011 Revision)	SDRC/ Ministry of Commerce	Foreign investment admission of Chinese industries, including encouraged industries, restricted industries (RE) and forbidden industries.
24/06/2014	⑱Notice on Improving the Recordation of Foreign Investments in Real Estate	Ministry of Commerce/ SAFE	The recordation procedures for foreign investments in real estate shall be simplified. Recordation with the Ministry of Commerce shall be changed from the recordation in the form of paper materials to recordation in the form of electronic data in addition to interim and ex post random inspections.

SOURCE: Author, 2016

Two essential policies should be clarified. One is the *Catalogue of Industries for Guiding Foreign Investment* (hereinafter to be referred as *Catalogue*), which is one of the most important guide policy for foreign investors since released, has classified real estate into the restriction catalogue. This policy has been revised several times (in 2004, 2007 and 2011), but the restriction of FDIRE has not been changed. Another policy, which has been mentioned and discussed in most of FDIRE academic researches, is the *Opinions on Regulating the Access to and Administration of Foreign Investment in the Real Estate Market* (hereinafter to be referred as *Opinions*) released by six departments of Chinese central government in 2006. This policy includes four pillars to restrict FDIRE. Firstly, for market entry, foreign investors have to register new branches in China if they want to invest in real estate, and the register capital must be higher than 50% of the amount of total investment. Secondly, for real estate development and management, foreign real estate enterprises must get several certificate to start operating and getting foreign exchange settlement. Thirdly, for monitoring, foreign enterprises and individuals, which register or live in China less than one year, are not allowed to purchase real estate properties. All the foreign exchange settlement must follow several strict recordation procedures. Fourthly, MOHURD, Ministry of Commerce, Ministry of Construction and other nine department should be responsible for FDIRE monitoring and management. Government should release punishment policies to reduce illegal cross-border real estate transactions and exchange settlement. These two policies mentioned above paved a basic road for FDIRE monitoring activities during the period from 2000 to 2014. Since 2006, most policies related with FDIRE were released to be ancillaries of these two main restriction policies.

The policy regulating system follows the top-down procedure. The content of FDIRE policies released between 2000 and 2014 includes from total investment direction guidance to detailed restriction on registered capital of foreign real estate enterprises. As for departments related with FDIRE policies, Ministry of Commerce is the main responsible party and acts as a pathfinder in FDIRE inflow regulation. However, other departments, such as construction, financing and urban planning, also contributed the implementation of FDIRE policies, which ultimately affected the effectiveness of them.

4.2 Implementation degree of FDIRE policies in China

FDIRE inflow may be affected by economic indicators, spatial agglomeration and policies. As the main research objective of this thesis is to work out whether FDIRE policies really affected FDIRE inflow from 2000 to 2014, the implementation degree of 18 policies mentioned in this research should be measured in order to get comparable data. According to the conceptual framework and operationalization, the policy implementation degree can be measured by policy effecting time, policy transparency and policy enforcement degree. These three pillars are divided into six variables (Table 5), and should be combined into one measurable index.

Table 5 Measurement of policy implementation degree

Concept	Indicator	Variables	Data type
Policy	Policy effecting time	the time period from the releasing year to policy expired year	Dummy variable
	Weighted index : Policy Transparency	Clarified & measurable target	Dummy variable
		FDIRE information availability: whether government provide the data or progress of policy target	Dummy variable
		Decision making transparency: whether government provides meeting minutes	Dummy variable
	Weighted index : Enforcement degree	Number of government departments involved in the policy releasing	Ratio
		Annual fiscal expenditures	Ratio

SOURCE: Author, 2016

4.2.1 Data Collection Results

For policy effecting time, policy target, FDIRE information availability, decision making transparency and the number of departments involved in policy releasing, all these five information can be found in the policy file or on the department website. For each FDIRE policy released in China, the information of these five variables are not changeable since its releasing, and all of the 18 policies are implemented across the mainland of China. In other words, for each policy, the first five variables showed in Table 5 are stable for each province in every effecting year. However, annual fiscal expenditure, the last variable in Table 5, varies according to provinces and years. Fiscal expenditure data can be found in the existing database, and can represent the local government intervention degree of each province during the research period (He, Wang, et al., 2011).

Table 6 Policy implementation data

Policy ID	Clarified & measurable target	FDIRE information available	Decision making transparency	Number of government departments involved in the policy releasing
1	1	1	1	3
2	1	1	1	1
3	1	1	1	6
4	1	1	0	1
5	0	0	0	2
6	0	0	0	2
7	1	1	0	1
8	0	0	1	2
9	1	1	0	1
10	0	0	0	1
11	1	1	0	1
12	1	0	0	1
13	1	1	0	1
14	1	0	0	2
15	0	0	0	1
16	0	0	0	1
17	0	0	1	2
18	1	1	0	2

Note: If a policy has clarified and measurable target, then the value of this variable is 1; if not, 0.

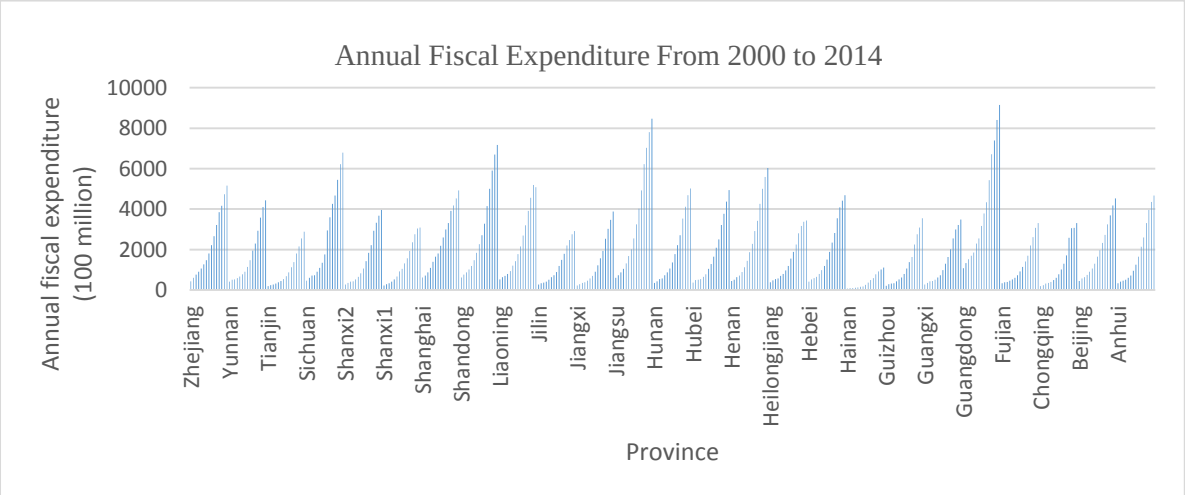
If the information of the main target of a policy is available online, then 1; if not, 0.

If the decision making meeting minutes or procedure can be offered by government, then 1; if not, 0.

SOURCE: Author, 2016

In terms of annual fiscal expenditures on province level, they showed increasing trend from 2000 to 2014, and the growth rate of expenditure also increased annually, especially after 2007. The top 3 provinces which spent the most fiscal expenditures were Guangzhou, Jiangsu and Shandong. These three provinces, which also own large population and achieved most GDP amount during the research period, are all located along southeast coast of China.

Figure 9 Annual Fiscal Expenditure from 2000 to 2014



SOURCE: Author, 2016 based on information from National Bureau of Statistics of China, 2016

4.2.2 Foundation of Policy Index (PI)

As is mentioned in the previous discussion, for each policy, the first five variables (policy effecting time, policy target, FDIRE information availability, decision making transparency and the number of departments involved in policy releasing) showed in Table 5 are stable for each province in every effecting year. But the annual expenditure varies according to provinces and years. Therefore, the foundation process of policy index is divided into two steps. Firstly, combining policy target, FDIRE information availability, decision making transparency and the number of departments to establish an original policy index (PI_0), which can measure the internal characteristics of these 18 policies. Secondly, according to the effecting time of FDIRE policies, including annual fiscal expenditure into PI_0, then the final PI can be worked out and used as panel data, because these policy indexes are different for provinces and years. Additionally, several policies were released in the same year, for example, in 2006, *Opinions on Regulating the Access to and Administration of Foreign Investment in the Real Estate Market* was released by six departments, but two more polices followed it as supplementary materials. In this case, several policy indexes should be merged to calculate the final policy index for this year.

The computation of the policy index uses the P2 distance index. This index is a synthetic value which combines several indicators into one, and make the target index comparable across different entities. This approach has already been applied to establish synthetic index in other social science researches, such as the calculation of well-being index, environmental index and development degree (Bonet-Garc á, P érez-Luque, et al., 2015). Moreover, the index calculation software is called "R". The two steps mentioned above when calculating PI_0 and PI both follow P2 distance method.

To calculate the P2 distance, it started with a matrix X of order (m, n), in which m refers to the number of provinces, and n means the number of indicators. x_{ri} refers to the value of the indicator i in the entity r, forming the P2 matrix. The index DP2 is calculated as:

$$DP2=\sum_{i=1}^{n}\left\{\left(\frac{d_i}{\sigma_i}\right)\left(1-R^2_{i,i-1,i-2,\dots,1}\right)\right\}$$

Where R_1^2=0, $d_i=|x_{ri}-x_{*i}|$ with the reference vector $X_*=(x_{*1},x_{*2},\dots,x_{*1})$

- n is the number of variables
- x_{ri}, is the value of the variable i in the spatial entity r
- σi is the standard deviation of variable i

In this research, DP2 is the final policy index that can be used in panel data regressions. According to the first step, original policy indexes (PI_0) which represents the internal policy characteristics are showed in Table 7 (the reference vector is (0, 0, 0, 1)).

As is mentioned above, the first policy (the *Catalogue*) and the third policy (the *Opinions*) are two essential policies in China after 2000, and they both have clarified target, available information and high department participation. They get 4.85 and 7.97 respectively in Table 7, and zero scored policies mean that these policies are reference policy and have minimum implementation degree compared with others.

Table 7 Original policy index (PI_0)

Policy ID	PI_0	Policy ID	PI_0
1	4.851257	10	0
2	3.239234	11	2.755472
3	7.973473	12	0.704182
4	2.755472	13	2.755472
5	0.806011	14	1.510193
6	0.806011	15	0
7	2.755472	16	0
8	4.045245	17	4.045245
9	2.755472	18	3.561483

SOURCE: Author, 2016

After combining PI_0 and fiscal expenditure, the summary of final PI is showed in Table 8. The mean value of policy indexes is 2.958. The maximum of PI is 11.28 at Guangzhou Province in the year 2014, because several policies were effective at the same time. Meanwhile, the minimum value of PI happened in 2000 at Tianjin and Chongqing, two municipalities which directly under the control central government, with the least fiscal expenditure in 2000.

Table 8 Final policy index (PI)

Variable	Obs	Mean	Std.Dev.	Min	Max
Policy index	375	2.958	2.222	0.07	11.28

SOURCE: Author, 2016

4.3 Effectiveness of FDIRE policies in China between 2000 and 2014

4.3.1 Pre-regression Explanation and Tests

With the policy indexes, policy effectiveness can be measured using several regressions, and both fixed-effects and random-effects models are applied to work out the final results. Firstly, simple description of all variables are showed in Table 9, and several tests should be done to check multi-collinearity, heteroscedasticity and other statistical problems. Secondly, two fixed-effects regression models are implemented. Model 1 includes only control variables, while model 2 add policy index variable into the model. With these two models, result can be found that whether policies were effective and in what degree the effectiveness is. Thirdly, random-effects models should be used, because spatial dummy variables are not allowed in fixed-effects models. There are four models used in this step. Model 3 and 4 are similar with the previous two models, but in model 5, two spatial dummy variables representing different locations of 25 provinces are included into regression (D_1 =1 means a province locates in the eastern China; D_2=1 represents that a province locates in the central China; otherwise, it locates in the western China). Model 6 then introduces interaction variables into the regression, which combines spatial variable with policy index to represent different policy implemented degree in three main economic areas of China, and find out whether there is any spatial difference of policy effectiveness. Fourthly, Hausman Test is done to clarify model preference of data, contributing to validity and reliability of these findings.

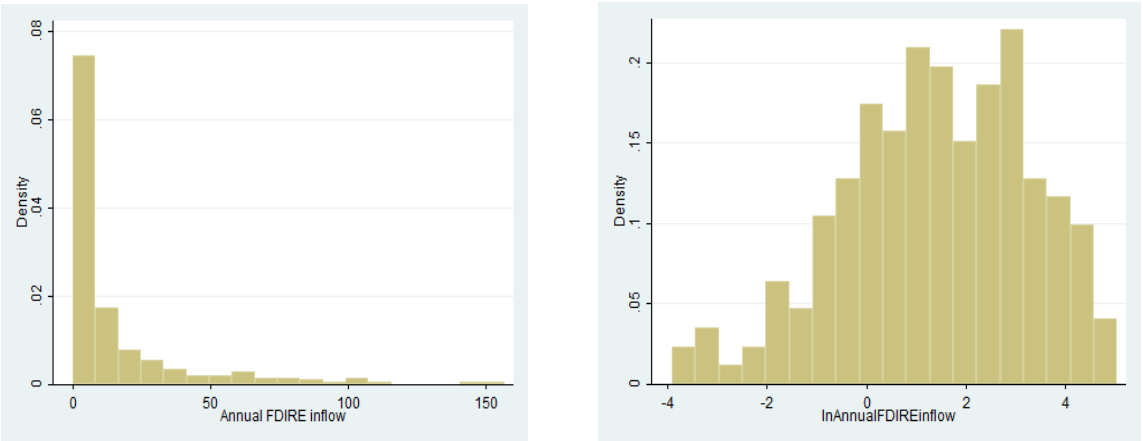
Table 9 Description of Dependent and Independent variables

Variable	Obs	Mean	Std.Dev.	Min	Max
province id	375	13	7.221	1	25
Annual FDIRE	364	14.87	24.01	0.0200	157.2
Annual GDP	375	12342	11896	526.8	67810
Average wage of worker	375	28120	17534	6918	103400
Annual CPI	375	102.3	2.155	96.70	107.8
Annual PPI	373	102.1	5.096	87.40	122.9
Population	375	48.95	25.23	7.890	107.2
ROE of Firm	325	0.0492	0.0485	-0.185	0.214
Policy index	375	2.958	2.222	0	11.28
_ID1	375	0.445	0.499	0	1
_ID2	375	0.309	0.463	0	1

SOURCE: Author, 2016

According to the description of variables above and outlier test using STATA, a group of outliers should be eliminate before regression to improve the accuracy and reliability of these models. Furthermore, as is showed in the left figure below, the value of FDIRE is not normally distributed, therefore, logarithmic FDIRE should be generated as dependent variable in these regressions.

Figure 20 Distribution of dependent variable and Logarithmic dependent variable



SOURCE: Author, 2016

The first test is multicollinearity test. Variance Inflation Factor (VIF) is the main indicator here to judge whether there is any multicollinearity among independent variables. As is showed in Table 10, all the VIF values are less than 10, thus multicollinearity will not influence the significance and accuracy of regression results.

Table 10 Test for Multicollinearity

Variable	VIF	1/VIF
Average wage of worker	4.910	0.204
Annual GDP	4.450	0.225
Policy index	4.310	0.232
Population	2.560	0.391
Annual CPI	1.960	0.511
Annual PPI	1.750	0.573
ROE of Firm	1.630	0.614
Mean	3.080	0.325

SOURCE: Author, 2016

The second test is homoscedasticity test through Breusch–Pagan Test (BP Test). According to the result in Table 11, there is heteroscedasticity problem. P-value of BP test is 0.0357, which is less than 0.05, meaning H_0 should be rejected (in 95 % confidence level). Heteroscedasticity can be modified using robust regression.

Table 11 Result of BP test

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity		
Ho： Constant variance		
chi2(1)	=	4.410
Prob>chi2	=	0.0357

SOURCE: Author, 2016

The third test should be done to check autocorrelation in panel data. The result of Wooldridge test is showed in Table 12. It represents that autocorrelation problem should be concerned and modified when doing panel data regression using robust standard error, because P-value of this test is 0.0008, which is less than 0.01 and rejects H_0.

Table 12 Result of Wooldridge test

Wooldridge test for autocorrelation in panel data		
H_0: no first order autocorrelation		
F(1, 24)	=	14.876
Prob > F	=	0.0008

SOURCE: Author, 2016

4.3.2 Fixed-effect Models

Results using fixed-effects regression models are showed in Table 13. The first model is the basic model with control variables, while Model 2 includes policy index into (PI) into the regression.

Table 13 Fixed-effects Models

	(1)	(2)
	Model 1	Model 2
VARIABLES	lnAnnualFDIREinflow	lnAnnualFDIREinflow
	(Log of total amount of FDIRE inflow)	(Log of total amount of FDIRE inflow)
Annual GDP	0.0526***	0.0746***
	(0.0134)	(0.0172)
Average wage of worker	0.00213	0.0204**
	(0.00870)	(0.00894)
Annual CPI	0.138***	0.127***
	(0.0309)	(0.0317)
Annual PPI	0.00186	-0.000793
	(0.0137)	(0.0136)
Population	0.106**	0.132***
	(0.0427)	(0.0431)
ROE of Firm	5.223**	3.911*
	(2.322)	(2.206)
Policy index (PI)		-0.186***
		(0.0652)
Constant	-8.448**	-5.888
	(3.445)	(3.649)
Observations	299	299
Adjusted R-squared	0.303	0.332
Number of province id	25	25

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author, 2016

Results show that policies released between 2000 and 2014 really affected FDIRE inflow in China, and the relationship between policy index and FDIRE inflow is negative. The coefficient of policy index indicates that keeping other variables controlled, 1 unit increase of policy index could cause 18.6% decrease of FDIRE inflow in China, as the coefficient of PI is -0.186 and significant at 99% confidence level. Moreover, policy index can explain 2.9% variance of

FDIRE inflow in the past 15 years, because compared with the adjusted R-squared of Model 1, the R^2 increased by 2.9% in Model 2 after including PI into the model, indicating that policy index variable really increase the explanation capability of independent variables.

These policies were effective on FDIRE and the relationship between them is negative, because 17 of 18 policies were restricting policies released by government to limit the amount of cross-border capital into local real estate market. On the one hand, this result can be interpreted that policy changes, especially restricting policies, may have considerable influence on FDIRE in China. FDIRE policy is an effective and essential tool for government to intervene into real estate market, and then step further, intervene into urban economic development. On the other hand, 18.6% of FDIRE is a considerable amount of investment. However, 1 unit growth of policy index can be considered from its arrangement scale of index value. For example, in this research, the arrangement scale of policy index is from 0.07 to 11.28. The gap is 11.21. It means that *1 unit increase* represents *8.9% increase of policy index (1/11.21)* in this research. In other words, 8.9% increase of policy index will cause 18.9% decrease of FDIRE inflow. Besides, policy index growth involves different fields and departments, such as policy information availability, department responsibility clarifying and fiscal expenditure increasing. Therefore, these aspects can be reviewed by governments to improve policy effectiveness.

In Model 2, as is expected, control variables, such as GDP, income level and market size, are all positively and significantly affected FDIRE inflow in China between 2000 and 2014. High GDP represents the economy condition of a province, and high income level also means there is investment potential from citizens and private sector, therefore more FDIRE will be attracted into this region. In addition, one indicator should be mentioned here is ROE of firm which represents the profitability of real estate companies. The regression results show that Chinese real estate market is profit-oriented, because the coefficient of ROE is significant at 90% confidence level. However, it has been mentioned in Chapter 3 that ROE is not the actual average investment rate of return for foreign investors, so the validity and reliability of this coefficient should be considered critically.

4.3.3 Random-effects Models

The results using random-effects models are showed in Table 14. Model 5 involves two spatial dummy variables comparing with Model 3 and Model 4.

Model 4 shows that policy index is still significant under random-effects models, and it is also negatively related with FDIRE inflow. 1 unit increase of policy index can cause 13.7% decrease of FDIRE inflow in China. After including spatial indicators into Model 5, the coefficient of policy index is lower than it in Model 4, but it is still significant and negative. Moreover, results indicate that between 2000 and 2014, provinces located in eastern China attracted 78.7% more FDIRE inflow than provinces located in central and western regions (keeping other variables stable), as the coefficient of D1 is 0.787, and it is significant under 90% confidence level. However, the coefficient of D2, which represents a province locates in central China, is not significant. It indicates that FDIRE inflow to central and western provinces in China did not show any significant spatial difference.

Two reasons may contribute to explain this result. Firstly, as is mentioned in literature review, foreign investors may choose eastern coast as investment location because of industrial agglomeration and openness level (Du, Lu, et al., 2008). Compared with eastern provinces, central or western regions perform less agglomeration capacity and potential. According to a report offered by Chinese government, openness indexes of western and central provinces are all less than 20, meanwhile, the average openness index of eastern regions is more than 50

(Research on Openness Index of China, 2012). Secondly, for central and western regions, except for policy variable, other control variables may affect FDIRE more than spatial agglomeration, such as GDP, income level and profitability. Spatial bias of foreign investors is not an essential indicator that will be taken into account when choosing investment locations.

Table 14 Random-effects Models

	(1)	(2)	(3)
	Model 3	Model 4	Model 5
VARIABLES	lnAnnualFDIREinflow (Log of total amount of FDIRE inflow)	lnAnnualFDIREinflow (Log of total amount of FDIRE inflow)	lnAnnualFDIREinflow (Log of total amount of FDIRE inflow)
Annual GDP	0.0396**	0.0574***	0.0468***
	(0.0185)	(0.0208)	(0.0147)
Average wage of worker	0.0116*	0.0201*	0.0178*
	(0.00995)	(0.0111)	(0.0103)
Annual CPI	0.137***	0.128***	0.133***
	(0.0301)	(0.0305)	(0.0386)
Annual PPI	-0.00302	-0.00591	-0.00298
	(0.0130)	(0.0131)	(0.0174)
Population	-0.00585	-0.00563	-0.00191
	(0.0107)	(0.0103)	(0.00839)
ROE of Firm	6.046***	4.712**	4.631***
	(2.126)	(2.095)	(1.739)
Policy index (PI)		-0.178***	-0.137**
		(0.0633)	(0.0733)
D1 (Provinces located in eastern China)			0.787*
			(0.448)
D2 (Provinces located in central China)			-0.452
			(0.486)
Constant	-12.78***	-11.65***	-12.79***
	(2.568)	(2.652)	(3.135)
Observations	299	299	299
Number of province_id	25	25	25

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author, 2016

4.3.4 Hausman Test

According to the result of Hausman Test, P-value is 0, so H_0 should be rejected at 99% confidence level. In other words, fixed-effects model is the preference of this research. It means unknown intercept for each province, which is not included in control variables, was also important for FDIRE inflow between 2000 and 2014. However, in order to introduce spatial variables and interacting variable into regressions, random-effects must be used to work out the sub-question 4.

Table 15 Result of Hausman Test

Hausman Test:		
Ho: difference in coefficients not systematic		
chi2(5)	=	51.37
Prob>chi2	=	0.000

Resource: Author, 2016

4.4 Spatial difference of FDIRE policy effectiveness among Eastern, Central and Western regions of China between 2000 and 2014

Based on the findings of sub-question 3 that policies were effective and FDIRE inflow preferred eastern regions than other places, policy effectiveness may also perform unevenly between eastern China and other regions. Therefore, interaction variable, which combines policy index with D1, is included into Model 6. The result is showed in Table 14. The coefficient of interaction variable is -0.0784, which means that policy effectiveness in eastern area performed similarly with national policy effectiveness, but this coefficient is not significant.

According to the results, the negative relationship between policy index and FDRIE inflow is still significant. From the coefficient of D1, FDIRE inflow in eastern China nearly doubled the amount of FDIRE in central or western regions. However, interaction variable did not show any significant spatial difference from 2000 to 2014. It indicates that during the research period, policies released by government negatively affected the amount of FDIRE inflow in Chinese real estate market, although foreign investors preferred eastern regions than other area, policy effectiveness was not influenced by this uneven distribution of FDIRE. To put it another way, regional policy effectiveness in eastern regions did not keep pace with FDIRE preference. This result can be interpreted that FDIRE policies in China were national policies and strictly implemented by local governments. These policies were not influenced much by spatial agglomeration, uneven economy development and different openness level. FDIRE policy effectiveness between 2000 and 2014 was only affected by policy characteristics and policy enforcement degree, including policy transparency, number of departments involved in policy implementation and fiscal expenditure. Advantages of regional governance did not show its power in FDIRE inflow regulation.

Table 16 Random-effects model with interaction variable

VARIABLES	Model 6 lnAnnualFDIREinflow (Log of total amount of FDIRE inflow)
Annual GDP	0.0540***
	(0.0187)
Average wage of worker	0.0210*
	(0.0108)
Annual CPI	0.125***
	(0.0330)
Annual PPI	-0.00146
	(0.0145)
Population	-0.000991
	(0.00811)
ROE of Firm	4.023*
	(2.141)
Policy index (PI)	-0.131**
	(0.0717)
D1(Provinces located in eastern China)	0.998*
	(0.527)
D2(Provinces located in central China)	-0.426
	(0.550)
Interaction (PI×D1)	-0.0784
	(0.0968)
Constant	-12.27***
	(2.837)
Observations	299
Number of province_id	25

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

SOURCE: Author, 2016

Chapter 5: Conclusions and recommendations

FDIRE policies always follow the economic conditions in China. As the speed of urban development slowing down in China, Chinese central government begins to change its limitation attitude towards oversea capital in local real estate market. Policy makers have taken a positive view of FDIRE attraction, and they released a new policy in August 2015, to reduce the restrictions in FDIRE field. However, policy makers still do not know whether these FDIRE policies can influence FDIRE inflow in China, because according to data from 2000 to 2014, FDIRE inflow fluctuated, but except for policies, GDP, income level and rate of return are also indicators that may affect FDIRE inflow (Cushman, 1987, Culem, 1988, Grosse and Goldberg, 1991, Moshirian and Pham, 2000). Therefore, based on data and policies from 2000 to 2014, the objective of this research is to find out whether policies released about FDI in real estate sector in the past 15 years have had significant effects on FDIRE inflow of China. In addition, other objectives are also to be achieved, such as to clarify the degree of implementation of each policy through index, and to find out spatial differences in FDIRE policy effectiveness between Eastern, Central and Western regions of China between 2000 and 2014.

5.1 Summary of Research Findings

The main research question is to find out whether FDIRE policies significantly affect FDIRE inflow of China between 2000 and 2014. According to the results in Chapter 4, this research find the answer. FDIRE policies released by Chinese central government between 2000 and 2014 were actually effective on FDIRE inflow of China.

As is mentioned in Chapter 2, researchers always hold controversial attitudes towards FDI policies and their effectiveness on economic development. The results of this research is actually in favour of Agarwal (1980), Fu (2000) and He (2011), who introduce policy indicators into FDI researches and explore relationships between FDIRE and regional governance. In this research, FDIRE policies are found effective on FDIRE inflow, and policy implementation degree is measured through index. The higher the implementation degree, the more strictly a policy is implemented. These restricting policies on FDIRE limited foreign capital through market entry, foreign exchange settlement and registration monitoring (Yu, 2007). In order to explain these effects thoroughly, results for sub-questions should also be analysed through theory.

The first two sub-questions can be explained together. There were 18 policies released between 2000 and 2014. 17 of these policies were FDIRE restricting policy and only 1 stimulating policy was released at the end of 2014, therefore, there is negative relationship between policy index and FDIRE inflow. The main basis of government attitude towards FDIRE is restricting, and among these policies the *Catalogue* and the *Opinions* are two basic policies and also get high score in policy index, paving a way for other policies. As is mentioned in the literature review, market entry, foreign exchange settlement and registration procedure are main pillars to intervene for Chinese government (Yu, 2007). These intervention paths, according to Wen et al. (2005), overlap with the *qualification authentication*, and *usage of FDIRE* implemented in USA, Finland and Australia. The common points for these two policies are high department involvement and high policy transparency. Firstly, high department involvement contributes to management effectiveness and strength (Lawler III, 1986). Ministry of Commerce is the main responsible party and acts as a pathfinder in FDIRE inflow regulation, but the *Opinions*, which intervene into several pillars, also clarifies responsibilities for housing, financing and trading departments. Under this circumstance, the *Opinions* contributed most effectiveness on FDIRE

inflow from 2000 to 2014. Secondly, for policy transparency, some policies get low implementation degree because of lacking clarified target and information availability. For example, a policy released in 2007 announced to exercise strict control over foreign investment in luxurious buildings, but government did not definite "strict control", consequently, local governments and foreign investors may confuse on the degree of limitation, and then influence policy effectiveness because of adding operating cost and implementation barriers (Schulte et al. 2005 and Xu 2006).

For the third question, to what degree were these FDIRE policies effective, answers are relatively clear, but it should also be viewed critically. Policy index is significantly related with FDIRE inflow, and policies performed negative effects on FDIRE because of its restricting basis between 2000 and 2014. However, it has been mentioned in Chapter 4 that the coefficient of policy index may be influenced by the method of policy index establishing, reference vector choosing and the arrangement scale. Moreover, one unit increase of policy index is also abstract because it involves transparency and fiscal expenditure. Therefore, the significant policy effectiveness and the relationship between policy and FDIRE inflow are clear, but the coefficient may change according to reference policy vector and index arrangement scale.

For the fourth question, results of regressions answer that there were significant preference of FDIRE inflow distribution in eastern China between 2000 and 2014, but policy effectiveness did not show significant spatial difference. This result partly confirmed that agglomeration and openness level influenced the amount of FDIRE inflow of China in the past 15 years (Du, Lu, et al., 2008). Eastern area of China, such as Guangzhou, Jiangsu and Shandong province, is more open than central and western regions. High openness level reflects that information availability, connections with foreign cities and competitive context are more suitable for foreign-funded enterprises. In terms of policy effectiveness convergence, it can be considered in three aspects. Firstly, this research only involves national FDIRE policies. These restricting policies were released by central government and implemented by local governments across the mainland of China. Secondly, regional capacity of local governance, which mentioned by Fu (2010) in his research, did not show significant advantages in the past 15 years, because reform administrative decentralization between central and local government is still on the way. Thirdly, active right of policy making for regional government concentrates more on tax incentives rather than restricting and monitoring rules. As a result, policy effectiveness did not show much spatial advantages, and this is also a potential part for policy makers to explore deeply.

To sum up, the answer for whether FDIRE policies really influenced FDIRE inflow in China from 2000 to 2014 is positive, which means this research is in favour of the effectiveness opinion in the controversial academic discussion. However, no spatial difference of policy effectiveness is found in this research by introducing dummy variables. Therefore, researches can apply other methods, such as using separate panel regressions to research into spatial difference of policy effectiveness.

5.2 Lessons learned and Conclusions

5.2.1 Research Process Review and Limitations

This research starts from FDIRE inflow fluctuation and policy releasing in China, then the main question is found to find out whether FDIRE policies really influence FDIRE inflow in this country. Based on literatures, researches on policy intervention reasons, policy implementation degree and policy effectiveness controversy have been stated. Then policy

index is established to measure FDIRE policy implementation, adding control variables, and then several regressions are done to draw the conclusions of this research. This research process can be applied to other similar studies in policy effectiveness, and to other countries and regions in the world.

However, there are several limitations in this research. They may affect validity and reliability of conclusions, and should be clarified to reduce misunderstanding and contribute to future research innovation.

Firstly, as the basis timeline of this research, policies chosen are important for the whole research process. As is mentioned in Chapter 4, all policies in this research are directly related with FDIRE. However, other policies, such as real estate policy, land policy and FDI policy may interact with FDIRE policy and weaken the reliability of the regression results. In addition, some FDIRE was released aiming at a certain real estate type, such as commercial housing or luxury housing, but the dependent variable of this research is total FDIRE inflow. It does not divided these types separately. Besides, provincial or regional FDIRE policies may also affect the foreign capital inflow in a province, but in this research, FDIRE policies in China are all issued by central government. In China, provincial and local policy makers usually intervene into FDI taxation incentives only. Therefore, it maybe not a severe problem in Chinese research to focus only on national policies of FDIRE, but for other countries, such as the United States, provincial and local policies should be taken into account in the research.

Secondly, department involvement, as one of the most important indicator which can influence policy index, is not reliable to some extent. Departments found in each policy file are responsible for this policy, but it is hard to confirm that whether these departments actually contribute to policy implementation across China. This problem also challenges the validity and reliability in this research.

Thirdly, as almost all policies in this research are restricting policies, there may be uncertain or different conclusions when applying to stimulating policy effectiveness research. Because in terms of incentives, economic indicators may show more significant effects than policy indicators, even influence the significance of policy index in statistical results.

5.2.2 Research Importance for Urban Development

International connections is inevitable in this global developing era, so urban development should be considered from an international perspective. FDIRE, as one of the participants in wealth accumulation and social development, is a new opportunity and challenge for policy makers and scholars, because FDIRE is related with housing price, rent and supply, so it contributes to structure the density, the industry distribution and the economy of metropolitan area (DiPasquale and Wheaton, 1996).

This research works out that FDIRE policies were effective on FDIRE inflow from 2000 to 2014. In the condition that scholars and policy makers hold controversial opinions for policy effectiveness on FDIRE, this research supplements the empirical evidence in favour of Agarwal, Fu and He, who advocate *Policy Effectiveness Inference*. Government can use policies as tools to intervene into cross-border capital inflow in host real estate market. Policy makers are able to prevent housing bubbles and guide these investment to benefit local macro-economy and to introduce high-technology into real estate industry (Borensztein, De Gregorio, et al., 1998, Jiang, Chen, et al., 1998).

In addition, this research provides a process to measure policy effectiveness and to establish policy index. It can be implemented and popularized to other countries, regions and urban development policies.

5.3 Recommendations

5.3.1 Recommendations for Policy

Under the special economic and political context in China, policy is an essential tool for central and local government to intervene into real estate investment and urban development. In China, real estate investment was responsible for 30% of the total investment volume (National Bureau of Statistics of China 2014). As this research finds the result that FDIRE policies were effective on FDIRE inflow in the past 15 years, policy makers can take this advantages when dealing with FDIRE issues.

For Chinese central government, national FDIRE policies can be released and implemented across China when FDIRE inflow need to be regulated to manage its effects on local real estate market and to prevent oversea capital to become housing bubble booster. In the process of policy making, policy transparency and policy enforcement degree are two main aspects that will influence policy effectiveness. Firstly, one of the most important aspects to improve policy transparency is to set target clearly and measurably. Connecting networks and mutual trust system should be established not only between central and local governments, but also among policy makers, private sectors and foreign investors (Wallis, 1994). Online website is the main method of stakeholders to access FDIRE policies, so that policy implementation targets, rules and regulatory process should also be clarified online. Secondly, policy making process should involve related departments, such as urban planners (MOHURD), financing sector (SAFE) and private sector (Ministry of Construction), and improve their participation degree in policy making and implementation. This is the most important indicator when dealing with policy enforcement degree, and it also takes considerable weights in the policy index of this research.

For local government, regional governance and policy enforcement capacity are two urgent issues to cope with. According to the results of this research, regional governance did not show significant advantages in FDIRE policy effectiveness. Since real estate foreign investors prefer eastern regions, local governments should keep the pace with them and improve regional policy effectiveness. Albrechts, Healey, et al (2003) states in their research that local government should search for ways of strengthening regional identity and promoting regional connections internationally, such as developing connecting infrastructure and institutional arenas to create policy initiatives. In terms of policy enforcement capacity, except for fiscal expenditure to ensure the regulatory capacity of public security agencies and courts, in this research, department involvement and participation is the fundamental basis to measure policy effectiveness. Therefore, local government should incentive related departments and private sectors to take the responsibilities clarified by policy files.

In addition, although national policies on FDIRE have showed their effectiveness on FDIRE inflow regulation, in terms of current conditions of China, FDIRE inflow should not only be regulated, but also rationally stimulated to contribute to urban development. It indicates that policies will be more comprehensive and positive. Under this circumstance, central government releases national policies, but local governments, meanwhile, can focus their attention on the find potential of territorially integrated policy approach according to local real estate markets, and then help central government to reframe policy ideas (Albrechts, Healey, et al., 2003).

5.3.2 Recommendations for Future Research

To measure policy effectiveness, the establishing of policy index is an essential part in the research process. In this research, policy data are collected from policy files. However, the values of policy dummy variables rely on researcher's knowledge and judgement. In the future research on policy effectiveness, researchers can involve more experts, government officers and scholars into policy data collection, or apply more objective methods, such as Quasi-experiment and Delphi method to improvement reliability of policy index.

Another potential field is on interaction between policy making parties and real estate stakeholders, such as developers, investors, bankers and urban planners. Researchers can get feedbacks from them and explore into actual policy effectiveness on these sectors, then use these feedbacks as complements for statistical models. Therefore, more detailed opinions and recommendations for policy makers can be achieved to improve policy effectiveness on FDIRE.

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Annex 1: Do-files

```
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AnnualPPI ROEofFirm
reg AnnualFDIREinflow AnnualGDP Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm Policyindex
predict d, cooksd
display 4/316
list AnnualFDIREinflow AnnualGDP Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm Policyindex Province Year if d>0.01265823
reg AnnualFDIREinflow AnnualGDP Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm Policyindex
vif
rvfplot
estat hettest
reg AnnualFDIREinflow AnnualGDP Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm Policyindex
predict r
kdensity r, normal
swilk r
reg AnnualFDIREinflow AnnualGDP Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm Policyindex
ovtest
linktest
xtset province_id Year
hist AnnualFDIREinflow
gen lnAnnualFDIREinflow=ln( AnnualFDIREinflow)
xi i.D1
Population ROEofFirm, fe robust
est store m1
xtreg lnAnnualFDIREinflow AnnualGDP  Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm policyindex , fe robust
est store m2
outreg2 [m1 m2] using result1,word
shellout using `"result1.rtf"'
Population ROEofFirm, robust
est store m3
xtreg lnAnnualFDIREinflow AnnualGDP  Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm policyindex , robust
est store m4
xtreg lnAnnualFDIREinflow AnnualGDP  Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm policyindex _ID1_1 _ID1_2
est store m5
xtreg lnAnnualFDIREinflow AnnualGDP  Averagewageofworker AnnualCPI AnnualPPI
Population ROEofFirm policyindex _ID1_1 _ID1_2 interaction, robust
est store m6
outreg2 [m3 m4 m5 m6] using result2,word
shellout using `"result2.rtf"'
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