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A Study of Using REITs as an Alternative Way of Financing Affordable Housing in Chinese Major Cities, Based on the Context of Nanjing

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PhD**

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Abstract

This thesis examines the possibility of establishing an affordable housing Real Estate Investment Trust (REIT) in major Chinese cities in order to address the financial problem faced by the country's affordable housing sector. This thesis builds, for the first time, a robust link between the affordable housing sector and REITs in China based on real world scenarios. The link is supported by real data from the affordable housing sector of Nanjing, as well as well-established international practices from Hong Kong and the United States.

In order to establish the link between the affordable housing sector and REITs in China, this thesis uses qualitative methods to address three guiding questions: 1) how affordable housing is financed in Nanjing, what the current problems are in this financing system, and why REITs might be useful; 2) if REITs are useful and necessary in China, what insights can be learned from overseas affordable housing REITs and 3) how an affordable housing REIT can be established in Nanjing based on the Hong Kong and US models and experiences, and what barriers currently exist that prevent Chinese REITs from being created in the affordable housing sector.

This thesis finds that current affordable housing finance in China heavily relies on government borrowings, and public rental housing serves as a source of governmental financial burden as this form of housing cannot be sold to repay the debt. Thus, the Chinese government has considered the vehicle of REITs as the best option to liquidate the existing stock and free resources to fund further investment and repay the debt. In addition, overseas insights suggest that the Hong Kong model could provide the strategic framework, while the US model can provide specific tactics to be adopted in the proposed Chinese REIT in order to avoid some of the difficulties experienced in Hong Kong. This thesis ultimately suggests that a purely affordable housing REIT (containing housing only) would be impossible to establish in Nanjing, or in similar major cities, under current conditions. However, an REIT holding commercial real estate within affordable housing estates would be a workable solution to the affordable housing sector, although it would face barriers of law, taxation and a lack of skilled workers.

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Chapter 1: Introduction

‘Building 36 million units of affordable housing is a wrong policy...’ (Senior Official of China Real Estate Association)

‘Establishing affordable housing REITs...it is a good idea, but I think it cannot work under current conditions’ (Senior Official of Jiangsu Provincial Department of Housing and Urban-Rural Development)

This research concerns affordable housing finance and Real Estate Investment Trusts (REITs) in China. It examines the possibility of setting up an REIT investment vehicle in major Chinese cities in order to support the affordable housing sector by employing the institutional arrangements of Nanjing as lens. The idea for this research originated from recent events in the affordable housing sector of the Chinese real estate market, specifically various conflicts and contradictions that require further investigation in order to find sustainable solutions for affordable housing.

1.1 Background and Challenges

In the last three decades, China’s remarkable economic growth has been recognised as one of the most significant development successes in recent human history. Along with the economic reform, the housing market in China has changed dramatically; a market-oriented housing system is now established in urban China. Despite this progress, China is facing significant challenges, including a very serious housing affordability issue, especially in its major cities. Affordable housing is in urgent need by Chinese urban residents. In China, affordable housing is a government initiative with the aim of providing low and medium income households with low-cost, subsidised or public housing to live in. The country’s local governments in particular play a considerable role in financing and building the affordable housing.

1.1.1 An Ambitious National Affordable Housing Project and the Funding Gap

To address the critical affordability issue, in 2011 the former Prime Minister of China, Wen Jiabao, launched a massive national affordable housing plan with the aim to build 36 million units of affordable housing during China's 12th five-year plan period from 2011 to 2015. The project's goal was to house 20% of the national population in the affordable housing sector. During these five years, many government officials, scholars, and the media speculated that the target was impossible due to severe financial restriction. Even the then-Minister of Housing and Urban-Rural Development (MOHURD), Jiang Weixin, said, 'Investment is really a big problem. In 2011 only, for example, if (proposed) 10 million units of affordable housing are all completed, it requires more than RMB 1.3 trillion'¹ (NPC, 2011). According to publicly accessible government data from the MOHURD, the capital required for constructing affordable housing was estimated to as high as RMB two trillion in 2012 (Qi and Wang, 2013). Ge and Zhang (2015) estimated that the total funding required to achieve this housing target would be more than 5.76 trillion, and the funding shortage on average would be above one trillion for each year between 2011 and 2015. Furthermore, the funding gap of the affordable housing sector would be expanded in the long run (ibid.). In Beijing, for example, the funding gap estimated for the affordable housing sector only in the next thirty years is up to 4.5 trillion (Ding, 2016; Ge and Zhang, 2015).

Nevertheless, based on the data from the State Council of China (2015), 39.7 million affordable units were built between 2011 and 2015. In fact, the ambitious housing target was not just achieved, but surpassed. Given the background of scepticism regarding the finances of the affordable housing sector that persists until today (see: Zhang, 2017; Zhao, 2017), this study argues that it is valuable to investigate and clarify how this funding gap was filled, facilitating the successful achievement of the national housing target for the 12th five-year plan.

1.1.2 Affordable Housing REITs – Governments Ambitions

A lack of alternative funding mechanisms and illiquidity in the capital markets inhibit the ability of Chinese local governments to finance the construction of new affordable properties on the scale required in most urban housing markets. Yet, they hold a large stock of real

¹ **1 British Pound = 8.7215 Chinese Yuan RMB**, on 15 Nov. 2017; see: <http://www.xe.com/currencycharts/?from=GBP&to=CNY>

estate assets and could, in theory, use these assets to raise capital. However, no suitable mechanisms currently exist, constraining the development of this potential market. Starting from the 12th five-year plan period, the government has tried to use an innovative method to finance the affordable housing sector from existing housing stocks and mitigate its financial crisis: establishing affordable housing REITs. Real Estate Investment Trusts, or REITs, are companies that own, operate or finance income-producing real estate assets, primarily commercial real estate. Most REITs have a straightforward and easily understandable business model: by leasing space and collecting rent on its real estate, the REIT generates income, the vast majority of which is then paid out (90% in the United States, for example) to its shareholders in the form of dividends (Nareit, 2017a). It is an important investment vehicle that, according to the European Public Real Estate Association (EPRA), is active in 36 countries and regions including major economies such as the US, the UK, France, Germany, Australia, Japan and Hong Kong (EPRA, 2017).

In mainland China, REIT vehicles have been demanded by the housing industry for years. However, the government had its own plan to launch REITs – not as a commercial real estate vehicle, but from the affordable housing sector. In August 2012, the Housing and Urban-Rural Construction Committee of Beijing announced that the first REIT to be established in mainland China would be developed in the near future and used to support the construction of affordable housing, especially the public rental housing in Beijing (WSJ, 2012). In August 2013, UBS Global Asset Management (China) announced that it would partner with Shanghai Hongkou Public Rental Housing Investment and Administration Co., Ltd., Taiping Asset Management Co., Ltd. and UBS SDIC Fund Management Co., Ltd. to launch and manage the first public rental housing fund in China, which was deemed to be very similar to an equity REIT (Zhang, 2013). This private equity closed-end fund was intended to invest in completed public rental housing projects in the Hongkou District of Shanghai and hold these housing assets in the fund's portfolio (ibid.). In December 2014, China's state news agency, Xinhua, reported that the MOHURD required the four tier-one cities of Beijing, Shanghai, Guangzhou and Shenzhen to submit their affordable housing REIT proposals, and those details have since been under review (Xinhua Net, 2014). In June 2016, the State Council of China issued an official document – *Several Recommendations about Accelerating the Cultivation and Development of the Rental Housing Market*² – which clearly indicated that

² In Chinese: 《关于加快培育和发展住房租赁市场的若干意见》;

the government would ‘steadily promote the pilots of REITs’. More recently in July 2017, nine central government ministries – including the MOHURD, State Administration of Taxation (SAT) and China Securities Regulatory Commission (CSRC) – jointly issued an announcement: *Notice on Accelerating the Development of the Rental Housing Market in Large and Medium-Sized Cities with Net Inflows of Population*³, clearly stating that 12 pilot cities including Guangzhou, Shenzhen and Nanjing need to ‘actively support and promote the development of REITs’.

Although the funding gap for the affordable housing sector to fulfil the housing target set for the 12th five-year plan was solved, after five-years the idea of affordable housing REITs still had not faded from attention. Instead, it rose from local interest to become a national plan, and the proposed REITs have become a state priority to be actively supported and promoted, a large shift from the original status as pilots. Nevertheless, key questions should be asked as it is unclear why the government is especially keen to create REITs, especially from the affordable housing sector, when its funding problem appears to be solved. There is a need to clarify several pressing issues, among them the suitability of these vehicles, how such a vehicle could be established and why no affordable housing REITs have been developed despite many attempts.

The idea for this research originated from the current status of the affordable housing sector of China, and the national initiative for the creation of REITs. In short, many studies have suggested that there is a severe lack of funding for the construction of affordable housing and thus there is an urgent need to expand financing sources such as affordable housing REITs. However, the government announced that the affordable housing target set for the ‘12th five-year plan’ (2011-2015), which was to construct 36 million units of affordable housing, was successfully surpassed. The vehicle of REITs did not contribute in effect to the completion of this housing goal financially, and yet it is actively pushed forward by the government after the goal was accomplished. Based on such contradictory realities and a lack of clarity, this research attempts to establish a robust link between the affordable housing sector and REITs in China.

see: http://www.gov.cn/zhengce/content/2016-06/03/content_5079330.htm

³ In Chinese: 《关于在人口净流入的大中城市加快发展住房租赁市场的通知》；
see: http://www.mohurd.gov.cn/wjfb/201707/t20170720_232676.html

1.2 Research Aim and Objectives

This research aims to use empirical findings to examine the possibility of setting up a REIT vehicle to finance affordable housing in major Chinese cities. In order to achieve this aim, the following objectives need to be attained:

- Investigate how affordable housing is financed in China in detail.

This is the logical starting point of this study, as the idea of affordable housing REITs was derived from the financial difficulties experienced by the affordable housing sector. Thus, it is fundamental to understand the essence and origin of the problem, namely the details of affordable housing finance in China.

- Determine the problems currently existing in China's affordable housing finance system and why REITs are considered to be the solution.

When the status and dynamics of affordable housing finance are understood, then the next logical step is to establish a link between the affordable housing sector and the investment vehicle of REITs in China. This objective is important to address why the government is still keen to promote affordable housing REITs even though the funding gap was theoretically filled and the affordable housing target was fulfilled by the end of 2015.

- Study how existing affordable housing REITs operate in other countries.

Because there are no REIT vehicles available in China, and certainly no affordable housing REITs, this research identifies and studies well-established, affordable housing REITs in other countries and regions. This review provides guidance to China to show how an affordable housing REIT can be established once the link between affordable housing and REITs is clear in the country.

- Identify the opportunities and pitfalls of the Chinese policy of affordable housing REITs.

Finally, based on the objectives above, this research highlights the opportunities, pitfalls and barriers of the establishment and operation of proposed affordable housing REITs in the Chinese context. It draws conclusions on whether setting up a REIT vehicle to finance affordable housing in Chinese major cities is possible, particularly given the failure to create REITs in the affordable housing sector despite heavy promotion by the government.

The specific study area of this research is the city of Nanjing. The REIT vehicles available in Hong Kong and the United States are adopted as references for the proposed REIT in Nanjing. The reasons for such comparisons and more details are provided in following chapters.

1.3 Research Methodology and Methods

To address the research aim and objectives above, this research project employs the research philosophy of pragmatism, guided by the purpose of creating new knowledge that is useful for real world actions and changes. In this case, the real word action examined is the possible establishment of an REIT in the affordable housing sector of Nanjing, which requires background knowledge that was previously lacking.

Based on this research philosophy, this study is a qualitative explanatory case study that multiple cases are involved. It uses qualitative data collected between March 2015 and September 2017 (with intermissions) from key stakeholders and from different areas including Hong Kong, several cities in mainland China and the United States, to examine the possibility of using REITs to fund further new affordable housing buildings in Nanjing.

This research specifically used the techniques of elite interviews and document review to gather first-hand and up-to-date information. The researcher approached important persons who would influence the affordable housing REITs proposal in China from central to local levels, including senior housing officials and members of the Legislative Council of Hong Kong, as well as presidents and CEOs of affordable housing REITs in the United States. The financial results, incentives, barriers and major considerations regarding the proposed affordable housing REITs in China are detailed in the findings chapters of this paper.

1.4 Thesis Outline

This thesis has eight chapters organised in four main sections. The first section (Chapters 2 and 3) provides the literature review, which outlines the housing affordability issue in China, the affordable housing schemes and finance of the country. This review provides the background of how China's affordable housing sector functions. The second section (Chapter 4) explains the conceptual model, research methodology and specific methods employed in

this study. The third section (Chapters 5, 6 and 7) includes the research findings and analysis. The final section (Chapter 8) summarises the major findings and draws conclusions.

Chapter 2 examines the housing affordability issue in China, including the market failure and government failure theories that underpin the housing affordability issue. Chapter 3 specifically explains how the Chinese government has addressed this housing affordability issue. This chapter reviews the affordable housing policies and schemes in China after the housing reform in 1998, examines the situation of the affordable housing finance in the country in comparison to more developed economies and finally highlights the linkage between affordable housing and REITs.

As mentioned above, Chapter 4 explains the conceptual model, research questions, research methodology and methods employed in this study. This chapter elaborates on details such as why Nanjing was chosen as the study region and why and how the fieldwork was conducted in Hong Kong and the United States.

Chapter 5 presents the results regarding affordable housing practice and its finance details in the context of Nanjing. This chapter also explores the rationale of the government to create affordable housing REITs, which is driven by the need for refinancing and public debt management in order to make more affordable housing viable. Chapter 6 then examines international affordable housing REITs in order to gather useful lessons that can apply to the proposed REIT in Nanjing. Based on the context of Nanjing, and the insights gained from international practices of affordable housing REITs, the Nanjing model developed by this thesis is presented in Chapter 7.

Finally, Chapter 8 draws the conclusions of this research, suggests the academic contributions and the social impact of this research. The limitations of this thesis are also outlined and thus suggestions are made for future research.

Chapter 2: Housing Affordability in China

2.1 Introduction

Following the housing reform in late 1998, real estate in China started on the path towards marketisation (Wang, 2000). During this process, especially in recent years, there has been some confusion due to China's need for staggering volumes of affordable housing (for example, 36 million units between 2011 and 2015) and the politics of the ambitious national targets being set for local governments who do not have the resources to deliver such targets. To address this issue, this chapter examines why China is in such a great need of affordable housing.

The chapter starts by discussing market failure theory, underpinning the housing affordability issue. After that, it reviews the concept of housing affordability and investigates the main approaches used to examine the affordability problem of an area by academia and industry. The aim is to fill the gap created by the absence of an official definition of 'housing affordability' in China. Subsequently, the chapter examines urban China, especially major cities such as Beijing, Shanghai, Guangzhou, and Nanjing, to clarify how serious the problems are across the country. Finally, the chapter explains why the government has intervened to correct the market, namely by building affordable housing in China. However, the government itself can sometimes fail too; this is discussed at the end of the chapter.

2.2 Markets Can and Do Fail – Market Failure Theory

It is necessary to dissect an event to see its depth when analysing a situation or conflict, so that its core can then be approached and studied. This research was inspired by the confusion that can be seen and experienced in the real estate market in China, especially in the affordable housing sector, and aims to identify the truth.

To this end, it is necessary to understand why the Chinese housing market failed, which should start with a well-developed and well-defined theory that appropriately explains the distortions in today's Chinese real estate market: the market failure theory. Regarding this

theory, neoclassical economics uses a single criterion to evaluate the function of an economy: efficiency (Van Staveren, 2009). Simply, the most important criterion for an economy to be judged as efficient is that it allocates the limited resources in the most efficient way. However, efficiency does not always dominate in economic evaluation. In his *Wealth of Nations*, Adam Smith argues that a market economy should combine two attributes: efficiency and equity (Smith [1776], 1986). He states that a market economy should be defined not only by the efficiency in the exchange of goods and services, but also by the moral emotions supporting the function of the market (ibid.). In his *Principles of Political Economy*, John Stuart Mill (1848) considers that a good economy should provide freedom for all economic agents, such as women, both socially and politically. Furthermore, in *Capital* [1867], Karl Marx suggests that if an economy allows the exploitation of labour by the unequal distribution of resources, then it is a bad economy (Van Staveren, 2009). Thus, classical economists have deemed that equality, freedom, and justice are significant criteria for economic evaluation, too.

It was only in the 20th century that efficiency came to dominate the evaluation of economy through the development of welfare economics by neoclassical economists such as Vilfredo Pareto (ibid.). Based on welfare economics, efficiency in terms of production, consumption, and exchange of goods and services can be achieved when a fully competitive market exists (Phang, 2013). Also, Barr (2012) suggests that under certain conditions, the allocation of resources in a long-term competitive equilibrium is efficient. Thus, Adam Smith's concept of the 'invisible hand', namely the market, should be at work. However, it should be noted that markets in equilibrium do not always achieve efficiency (Morey, 2017). Hence, just as its name implies, 'market failure', from a simple perspective, refers to a 'should-be' free and effective market failing to function appropriately, leading to a misallocation of precious and limited resources (Phang, 2013).

It can generally be concluded that a market can fail under any of the following five conditions: externalities exist in the market; the information available in the market is imperfect; some markets may be missing in an economy; goods in the market are public; and monopoly power may exist (Baekkeskov, 2007; Charemza, 1992; Williamson, 1971). Among them, Specifically regarding the real estate market, Le Grand et al. (2008) suggest that three reasons are likely to cause a market to fail: externalities, problems arising from imperfect information,

and issues generated by a lack of price adjustments due to supply inelasticity. Moreover, regarding the government, the authors argue that the objective for the housing market should be principally defined as equity, but that efficiency should be an additional goal, though not it should not be the only justification for government intervention (ibid.). More details are addressed in later sections.

2.2.1 Housing Market Failure in China

In terms of housing studies, Le Grand et al. (2008) indicate that in the UK, the market is the main means of allocating housing to almost four in five households. The system has great advantages, but in the meantime, the market system also faces many serious problems, as mentioned above (ibid.). In fact, researchers in the UK suspect that there may be persistent market failure and imperfections in the British housing market, as they have noted that houses are not built across the price spectrum⁴ (The Economist, 2016). In addition, Phang (2013) argues that real estate markets are subject to market failures, and that competitive markets do not work because they commonly contain monopolies, information asymmetries, and externalities. In contrast, government intervention, which is often justified on the grounds of economic efficiency and satisfying social needs (social justice), is argued to result in welfare improvements when traditional examples of market failures exist (Barr, 2012). Based on several researchers' work, it can now be seen that different economists have similar views on the causes of market failure (see: Baekkeskov, 2007; Barr, 2012; Le Grand et al., 2008; Martin and Scott, 2000; Phang, 2013; Stiglitz, 1989). Using mainstream economics, this section considers why housing markets are often viewed as inefficient and why government intervention is often called for and justified in these markets, particularly in China.

2.2.1.1 Externalities

In economics, the term *externalities* refers to the effects of an economic transaction on stakeholders who are not directly involved in that transaction (Rossi-Hansberg and Sarte, 2012). Hence, externalities are said to be consumption or production spillovers that affect third parties to the transaction, and therefore should be included in the costs and benefits taken into account by the transacting parties (ibid.). Externalities are highly common in housing markets, and can be negative or positive. Specifically, Phang (2013) argues that the

⁴ According to *The Economist*, builders do not construct roughly equal numbers of houses for rich people and poor people, in the way that there is roughly an equal provision of supermarkets for both groups.

development and use of real estate may generate many negative externalities, including emissions, vibration, dust, noise, and congestion. Furthermore, retail activities may produce parking problems for nearby residents, and high-rise buildings may generate increased traffic and noise, and blockage of sunlight and views (ibid.). These negative externalities arise when the consumption of a good (real estate) or service (retail service) by a consumer leads to the loss of welfare for other consumers or other social members (Stiglitz, 1993). In practice, property owners do not want negative externalities in their neighbourhood so that their property value is not negatively affected. However, this ‘understandable’ idea may adversely affect the development of high-density construction, affordable housing, hospitals, and other facilities that are of necessity to the local community (Phang, 2013).

On the other hand, externalities may also act positively in the housing market although they still represent market failure, as they are usually a signal that there is an under-provision of something demanded. One example is the preservation of historical properties (Jim and Chen, 2007). During the rapid process of urbanisation, especially in developing countries, historic buildings face the constant threat of demolition to make room for skyscrapers and high-density constructions (ibid.). Yet, there is evidence that the preservation of historical properties could generate architectural merit and historical significance for society (Phang, 2013). For instance, Europe has many historical cities that are beloved worldwide and visited by millions of tourists every year (ibid.). Protecting historical buildings means protecting history, which is of certain benefit for society. Another positive externality is the social and political stability associated with homeownership (ibid.). In many societies, governments feel it necessary to intervene in the housing market, especially in China, to capture and promote this stability.

In addition, Le Grand et al. (2008) show that positive and negative externalities may sometimes be mutually transforming. Suppose two neighbouring house owners plan to renovate their houses. If one does so, the other’s property will benefit too (a higher property value will be expected) because the neighbour’s improved property (for example garden landscaping, replacement windows and doors, or painted or refurbished facade) is a positive externality (ibid.). However, if such renovation is substantially costly, then the best strategy would be to do no maintenance himself, but let his neighbour, who is the owner of the surrounding property, improve her property by her own efforts (ibid.). On the other hand, if

both parties adopt the same ‘best’ strategy, then no properties will be maintained, and their values will decline in the long run (ibid.). In economics, this situation is known as ‘the prisoner’s dilemma’. On the other hand, Pozdena (1988) suggests that in small neighbourhoods with residential property owners and easy means of communicating, this dilemma can be simply overcome, whereas in large urban neighbourhoods, especially for non-residential landlords, solving this dilemma is less feasible. As a result, the ‘should-be’ positive externalities may transform into negative ones.

In China, from a broad perspective, the real estate industry is normally a major contributor to the national economy. In 2015 for example, it represented around 6% of the GDP, and if related industries such as construction, finance, advertising, and marketing were counted, the ratio could be above 20% (Gu, 2016). Thus, it can be stated that real estate itself has been a significant positive externality to China’s national economy. It is worth noting that China’s economy started to slow down in 2014 after 30 years of high-speed growth (India has since taken over as the fastest growing major economy), but real estate is a key element in the plans for economic recovery (Deng, 2015; Liao, 2016). This demonstrates that China’s real estate sector has been the pillar industry in stimulating domestic demand and promoting the national economy over the last 10 years (Deng, 2015). Its strong position as an economic engine will remain in the foreseeable future.

As mentioned above, positive and negative externalities may be mutually transformed. China’s economy has depended too much on the real estate industry, with many local governments becoming greedy in pursuit of GDP growth and thus relaxing the supervision and regulation of this market (Zheng, 2017). The consequence is that China’s national economy has been ‘kidnapped’ by the real estate industry, which has hindered and development of other industries, especially the real economy (ibid.). Specifically, renowned Chinese economist Ma Guangyuan (2016) suggests that the returns on the real economy have been low and will be lower during the economic recession and that as a result, the currency released by the Central Bank will flow into the real estate market to seek higher profits, thus further increasing house prices. However, if the Central Bank adopts a tight monetary policy to control this market, the real economy will be adversely affected and decline before the impacts are felt on the real estate market (G.Y. Ma, 2016). Thus, the real estate and the real economy in China have entered into the aforementioned prisoner’s dilemma. Even more

serious is the fact that real estate is no longer an easy economic issue in China, but is closely interlinked with the country's national economy, its monetary policy, and ultimately its political stability. The focus of this research is not on this area, but it should be noted that real estate in China has been in a conundrum for a long time.

2.2.1.2 Housing as a Merit Good

An extension of the positive externalities argument is the notion that housing is a *merit good* (Whitehead, 1991). A merit good is a commodity that an individual 'should' have such as free health care at the point of consumption or minimum levels of housing (ibid.). It is based on social need rather than the individual's ability and willingness to pay (Phang, 2013). As a merit good,⁵ some housing economists argue that housing should be accessible to households that are unable to afford housing at the market price (ibid.). In other words, social members including some voters, policy-makers, ordinary people, and economists, think housing is of such significance that they are willing to forgo the market allocation and instead intervene to guarantee the minimum levels of housing consumption (Balchin, 2013). Implicit in this argument is the idea that everyone should have the same basic housing rights, shaping the housing policy goals of many governments.

In China, millions of people have benefited from the boom in house prices in last decades, but there are many more people who have not. Indeed, worse still, it has made most forms of housing unaffordable to them and has made even basic accommodation beyond their financial means.

Unaffordable housing⁶, as a typical outcome of housing market failure, means that people are missing out on what is viewed by many as an essential social need. When housing becomes very expensive, millions of households become disenfranchised from the housing market: it fails to meet their individual needs and deliver adequate essential goods, resulting in a break in social equity (Phang, 2013). In the meantime, millions of people in China live in housing in poor conditions in both the private and public sectors. The poor quality of much of the housing stock has an effect on the standard of living of millions of people.

⁵ Here a merit good is service, such as housing, that are perceived to be valuable to society that public finances is used to guaranteed a minimum standard of service which is more than the market would deliver to low income-households.

⁶ More details regarding affordability are addressed in later sections.

Therefore, affordable housing is essential. Schill (1990) suggests that affordable housing must be supported by the government to serve the poor and vulnerable as it contains certain attributes of public goods. Kahneman and Knetsch (1992) argue that it is logically impossible for some public goods to be produced through the market, because private producers are unable to supply them for a profit. Therefore, public goods are provided by the public sector and financed by compulsory taxes (ibid.). Although affordable housing is not a public good, it should be recognised that the free market cannot voluntarily provide for the people who are in need of adequate affordable housing in most housing markets, including China, the US, and the UK. Therefore, government intervention might be necessary. This is further addressed later.

2.2.1.3 Transaction Costs and Information Problem

Recent views of housing market failure focus on *housing transactions and information problems* (Cowen and Crampton, 2002; Ledyard, 2008; Phang, 2013; Quigley, 2002; Stiglitz, 2000). Ledyard (2008) points out that in recent years, information economics has made influential advances in the study of information asymmetries as a typical cause of market failure. However, as early as 1967, Stigler suggested that many of the imperfections in a market could be explained by transaction costs including information costs, and that these are just as real as other economic costs (Stiglitz, 2000). Modern information economics now suggests that even small information costs could have great consequences, and in the real estate market, this situation is real and serious (Stiglitz, 2000; Phang, 2013).

Barr (2012) suggests that at least three kinds of knowledge are required to form complete information for a market: knowledge about the quality of the product, about the price, and about the future. In the housing market, this knowledge tends to encompass housing quality, price, rent, vacancy rate, supply, stock, and risks, and Mishkin (1990) and Phang (2013) suggest that asymmetric and imperfect information can be found mostly regarding the characteristics of the property, the reliability of the real estate agent, the market price of the property, and the uncertainty of future trends. This information is often asymmetrically distributed between seller and buyer, landlord and tenant. In the last two decades, the Internet has played an important role in reducing search and information costs (Phang, 2013), but even so, the information problem is still highly common in the housing market. This is because the real estate development process is complex and time-consuming, which in most

countries involves land assembly, construction, financing, and finally sale or lease to householders (ibid.). During this long and complicated process, there is a lack of information for buyers and renters, so they cannot predict what is likely to happen in the local or regional housing market in which they are willing to purchase or rent properties (ibid.). Developers cannot do so either as real estate is a risky business due to fluctuations in house prices and the time lag between the acquisition of land and the completion of any real estate business. For example, the real estate market played a significant role in the Asian Financial Crisis in 1997 and Global Financial Crisis (GFC) in 2007. In both instances, many developers suffered losses and exited the market, as little information was available to predict the impending crises. During the GFC, many financial institutions did not have the information necessary to assess the potential risks either, so that they were exposed to huge losses (ibid.). The direct consequence was that the stability of major economies, such as the US and the EU, was seriously and adversely impacted. Just as is emphasised by modern information economics, a small information problem may lead to major results. In the aforementioned cases, first the housing market and then the whole financial sector were hit in the US during the GFC, and eventually the national economy was affected.

In addition, neoclassical economics assumes that humans are all-knowing, immortal and perfectly rational beings, which can be defined as ‘economic man’. However, this is not true in the reality. Thus, in his *Models of Man*, Herbert A. Simon (1957) stresses that the vast majority of people in fact are only bounded rational, and tend to act emotionally and irrationally in their remaining part. This is known as ‘social man’. Therefore, behavioural economics studies the effects of psychological, social, cognitive, and emotional factors on the economic decisions of individuals and institutions, as well as the related market outcomes (Lin, 2011). Regarding the information problem, a concept called ‘bounded rationality’ is helpful; it refers to how the complexity of information may lead an individual to make irrational economic decisions, for example, which can eventually lead to market failure (Barr, 2012). Barr (2012) suggests that it is useful to realise the difference between the information problem and the information-processing problem: an information problem can be solved by providing relevant information, whereas in an information-processing problem the complexity of information means economic agents are unable to make rational decisions even if relevant information is provided. Such information-processing problems based on the theory of bounded rationality can occur firstly when there is a failure in the information,

secondly when there is an inability to process small probabilities, and thirdly when the information is essentially complex (ibid.). As a result, Simon (1957) suggests that a market can only operate effectively within bounded rationality, and when gauging the optimum point in the market, namely the market efficiency, one should account for elements such as imperfect information and the transaction costs for dealing with such information, as well as unconventional decision-making functions. Regarding the real estate market, the introduction of transaction data on the Internet has reduced information costs for many home buyers and renters, but has also brought economic agents an explosion of information. Without a doubt, many people do not have the ability or knowledge to process massive amounts of information in the market, and thus irrational economic decisions are expected. For example, Beracha and Skiba (2014) indicate that although the information is available, people still often make poor decisions regarding purchasing property because their reactions to the information could be slow or overconfident, or could reflect loss aversion and familiarity bias. The underlying reason could be their lack of ability to handle complex market information.

In China's real estate market, except for the issues detailed above, a common problem also exists, which the information appears to be asymmetric between government, developer and consumer. Specifically, local governments have the most detailed information regarding an area such as population growth, future planning schemes, and land sales plans, whereas developers might have insufficient information on these matters (X.Z. Huang, 2010). Therefore, during the land bidding process, the possibility is great that a developer will pay a very high premium for a piece of land under heavy competition, deviating from the market value, because of information asymmetry. This kind of situation is seen between developers and consumers too. As previously mentioned, real estate is a complicated business. Hence, most consumers do not fully understand the interactions of factors such as project quality and cost, or price trend in a real estate project. However, developers do have this knowledge. As a result, this information asymmetry could greatly weaken consumers' bargaining power and encourage bubble prices (ibid.).

Scholars such as Carter (1997), Crowley (2003) and Phang (2013) specifically argue that low-income housing projects are more vulnerable to information problems due to the general public's exaggerated perception of volatility: affordable housing projects are seen as unreliable, and thus few developers want to be involved in them. A possible solution to this

problem could be the government's involvement through a partnership arrangement or the setting up of a special semiautonomous authority to facilitate and coordinate private investments and provide timely information on local, regional, and national housing market conditions including prices, rents, vacancy rates, supply, and available stock (Phang, 2013). This is because the involvement of the government and comprehensive, accurate, and timely information on the market would increase stakeholders' confidence. In a situation like the one faced by China, where capital and insurance markets are underdeveloped, it may be necessary for governmental involvement to provide access to affordable housing finance and guarantees against defaults (ibid.).

2.2.1.4 Market Power Imperfection

The market itself contains certain imperfections which are not failures. The concept of *market imperfections* arises from violating the assumptions of perfect competition as described in neoclassical economics. Those imperfections come out naturally as side effects of a market, since a perfect market is not in fact attainable (Kaldor, 1935). A frequently seen example of market imperfection is the increasing economies of scale that result in dominated market power and lead to the creation of a monopoly (Baekkeskov, 2007).

In today's housing market, large real estate developers, dominant land owners and landlords have relatively strong market power. Among them, Feagin (1983) states that established large developers enjoy an incumbent advantage over smaller developers or new entrants. Real estate is a capital-oriented business: lenders, which are mostly banks, building societies, and credit unions, also have market power, and favour large and experienced developers over smaller ones because they represent lower borrowing risks (Phang, 2013). Those large developers may also be listed companies, so that they have the ability to access equity capital, thus broadening the source of funding (ibid.). In addition, Feagin (1983) indicates that the advantage of 'economies of scale' in the real estate industry can be seen in that large firms may have a high number of stocks in their land banks, which may permit them to spread their activities through several development cycles and allow long-term planning. In contrast, smaller firms normally only focus on business on a project-by-project basis (Phang, 2013). The strong market power of big players in the housing market gives them competitive advantages which ultimately reinforces their market share and allows them to gain monopoly or oligopoly power. This kind of monopolistic or oligopolistic structure in the real estate

industry causes concerns about possible collusive activities among developers, and the potential for them to earn above-normal profits and set market prices higher than they would be in a more competitive market (ibid.). Therefore, it can be stated that strong market power may lead to market imperfections, since a monopoly would generate higher profits at the expense of allocative efficiency (Williamson, 1972). In addition, monopolists in a market such as large housing developers seek higher profits from buyers above the cost of resources used in, for example, building an apartment. Higher market prices mean many buyers' needs and wants cannot be satisfied, and this disproportionately impacts families with lower incomes (ibid.). Moreover, this suggests that monopoly may lead to the under-supply of housing, explicit discrimination, and a failure to innovate (Branch et al., 2016).

An added complication in China is that it is a country that adopts a state-owned land system, where the vast majority of urban land is held in public ownership and owned by local governments. Thus, the largest monopolist in the real estate market is the government. X.Z. Huang (2010) argues that monopoly power held by the government in the urban land market distorts land prices in many cities in China, and the tight control that the government exerts on supply has driven up land prices. One view is that local governments have come to rely heavily on 'land finance', so that increasing the supply of land and lowering land prices is not in their interest. There is a famous analogue in China that 'flour (land) is more expensive than the bread (housing)', but this situation has created a paradox for the affordable housing sector. Sun (2011) argues that the potential loss of public finance due to the transfer of land for affordable housing projects is estimated to be RMB 250 billion annually, and the potential loss of land finance discourages local governments in China from proactively building affordable housing (ibid.). As a result, the monopoly of the supply of land in Chinese cities is a significant market imperfection, especially for the affordable housing sector.

The above has used economic theory to argue that market failure has occurred in the Chinese housing sector because of negative externalities, imperfect and asymmetric information for the market, and the monopoly of urban land supply. This has led to failures, which are evidenced by the following discussion.

2.3 A Consequence of Market Failure in China – The Housing Affordability Issue

Harris (2003) suggests that in London, for example, affordability is perhaps the most debated issue resulting from housing market failure. In fact, affordability is more of a problem in London than in the rest of the UK, as it has always been difficult for citizens of London with average earnings to buy property (ibid.). The same situation has occurred in China, but not just for a single city. After the housing reform and the marketisation of real estate in 1998, and especially since 2003, the central government of China has introduced a series of housing policies every year to control house prices, yet these prices, especially in tier-one and -two cities, have continue to increase to a severely unaffordable level due to market failures (Ren et al., 2012). The high house prices across China have resulted in 60% of households in cities of more than 7 million inhabitants being unable to afford basic housing at market rates (Woetzel, 2015). In total, China's affordable housing gap (the difference between market-rate housing costs and 30% of income for households in lower-income groups) equates to about US\$180 billion per year, or about 2% of its GDP (ibid.). That is about 28% of the global gap of US\$650 billion, based on data for 2,400 cities (ibid.), and represents a serious housing affordability issue and a critical under-supply of affordable housing in China, especially before the 12th five-year plan period (Shi et al., 2016).

2.3.1 What Is Housing Affordability?

It is now commonly accepted that housing affordability is a severe problem in China, but there is in fact no official definition of what 'housing affordability' is in the country. It is essential to have a benchmark to gauge how seriously the market has failed. Hence, it is necessary to study and understand this concept through academic circles and other countries' practices. Interestingly, however, there is no uniform definition of the term ***housing affordability*** or how to measure it. Scholars often define and measure housing affordability based on their own understandings and research directions. For example, Leishman and Rowley (2012) state that the housing affordability issue, at a simple level, is related to housing costs and household income levels. Hancock (1993) explains that housing affordability is the ability of a household to afford the cost of housing while maintaining their basic living standards. Ong and Wood (2011) propose the concept of 'acute housing stress' to define affordability. They argue that housing in Australia is unaffordable if net housing costs

exceed 30% of household income (ibid.). Alternatively, Stone (2006) perceives housing affordability as a ‘relationship’ between the social and material experiences of households and their individual housing situations. Based on this relationship between people and housing, Stone (2006) argues that the aim of measuring housing affordability should be to ensure that housing is affordable to every household in society no matter the income group within which a household falls.

These examples illustrate that academics view and define affordability in different ways. Bramley (2012) states that how to define and measure housing affordability and set standards is a long-running debate among scholars and policy-makers that is far from resolved. However, this section summarises the main approaches proposed by scholars and/or used by industry to assess housing affordability to draw a clear and suitable definition that can then be applied to the Chinese context.

2.3.2 Possible Approaches for China to Gauge the Affordability Problem

As the concept of housing affordability has developed over the last three decades or so, different ideas of it have emerged (ibid.). In academic circles, the housing affordability issue is complicated by there being no universally agreed benchmark to define what is ‘affordable’.

Jones et al. (2010) suggest that the starting point for analysing the affordability issue is a normative judgement about the costs of providing an ‘acceptable’ standard of housing and the income that needs to be maintained for other basic non-housing needs. The following sections present the main approaches that have emerged from this point, and also in the literature. This could be used to examine the affordability problem in China.

2.3.2.1 Price to Income Ratio

This approach uses housing rent divided by household monthly income, or median housing price divided by median annual household income, to obtain a percentage or parameter to determine the level of housing affordability within a specified area of spatial analysis (Leishman & Rowley, 2012). Together with the ‘median’, in the UK context, the lower quartile price to income ratio approach has been important too (Meen, 2011).

This traditional approach to measure housing affordability has a long history of use. Back in the 20th century, academic studies generally argued that ‘one week’s pay for one month’s rent’ was affordable for households (Hulchanski, 1995). That is, the monthly cost of property (rent) should not exceed one-quarter of a household’s monthly income. Hulchanski (1995) further suggested that a housing affordability problem would arise if a household paid more than a certain proportion of its income for housing.

Similarly, the World Bank, the United Nations, and the Joint Centre for Housing Studies of Harvard University recommend and employ a method called the ‘median multiple’, which is a typical price to income ratio approach used to measure housing affordability and gauge the extent of the housing affordability problem in housing markets (Cox & Pavletich, 2013). Cox and Pavletich (2013) propose that housing affordability can be assessed and rated based on the median multiple, which uses median house price divided by annual median household gross income. They suggest that if the median multiple is less than or equal to 3, then housing is considered to be affordable; whereas if the median multiple is equal or greater than 5.1, then housing is deemed to be severely unaffordable for a significant proportion of the population within the area of study (ibid.).

Leishman and Rowley (2012) note that over the last 10 years in North America, a relatively broad consensus has developed that housing costs versus income might be a more important indicator to assess affordability than price to income ratio. This takes into account the monthly mortgage repayments (or rent), property taxes, and any other housing-related costs, as considering only housing prices may be insufficient. Stone (2006) also indicates that housing costs relative to income can generate a more appropriate ratio as an indicator of housing affordability. He suggests that the ratio was around 25% of income until the early 1980s, but that this then shifted to 30% of income due to the growth in incomes and relatively high inflation in the general price level, which have continued to the present day (ibid.). In addition, Leishman and Rowley (2012) highlight the overlap in these approaches to housing affordability, as Australian policy-makers and researchers consider a household to have housing stress (rental or mortgage stress) if it has to pay more than 30% of its gross annual income on housing costs.

However, Cox and Pavletich (2013) argue that the price to income ratio is a clearer and more reliable indicator for measuring housing affordability, especially in the owner-occupied sector, as some of the more elaborate indicators often mix up housing affordability and mortgage affordability. They claim that this confusion ‘can mask the structural elements of house pricing’ (ibid.), and they believe that mixed indicators may only show a ‘snapshot’ of housing affordability rather than the whole picture, as interest rates may change during the term of a mortgage (ibid.). Subsequently, a rise in interest rates can make a previously affordable mortgage unaffordable, whereas the price paid for the house has no bearing on the ability of a household to service its debt obligations over the life of the loan (Cox and Pavletich, 2013; Leishman and Rowley, 2012).

No matter which approach is more appropriate, they are all rooted in the same theory: the relationship between housing costs (prices) and household incomes is used as a benchmark to measure the existence of a housing affordability gap and monitor how this changes over time.

Yet, the traditional approach of using the ratio of housing costs (prices) to household incomes has been questioned and criticised by some scholars. Bertaud (2009), Hancock (1993), Wilcox (2006), Yang and Shen (2008), and Ying et al. (2013) indicate that housing affordability cannot be easily defined by comparing house prices to household incomes since affordability is influenced by households’ subjective values and their different social expectations. In other words, a household may spend a large proportion of their annual income on housing costs but not experience their home as unaffordable, whereas another household may spend a small percentage of their annual income on housing costs but still think that housing is unaffordable. The existence of an affordability problem may also be challenged by the disparity between rich and poor households in the same society, and the occurrence of over-crowding and differences in the level of housing quality and surrounding infrastructures (Leishman and Rowley, 2012; Yang and Shen, 2008).

Thus, although the traditional approach of price to income ratio has prevailed as it is the most common form of analysis of housing affordability, it has certain limitations (Wilcox, 2006). This ratio approach overlooks some important factors influencing the affordability issue, and does not sufficiently address the importance of the diverse composition of households within a study area to define the housing affordability problem (Leishman and Rowley, 2012).

Despite the drawbacks, the ratio approach is likely to remain in practice. Objectively, it is an effective measure of housing affordability as it is a relatively straightforward, easily understandable, and simply and well-applied indicator (Cox and Pavletich, 2013).

2.3.2.2 Residual Income

Residual income, also called the shelter poverty approach, is another widely employed approach used to assess housing affordability (Bramley, 2012). It defines affordability as the residual incomes of households that remain for the consumption of non-housing goods and services after housing costs are subtracted (Lau and Li, 2006).

This approach focuses on the adequacy of a household's non-housing spending, relative to a certain minimum level that is normally an official poverty standard for non-housing consumption (Bramley, 2012; Lau and Li, 2006). Based on his analysis of the residual income approach, Stone (2006) suggests that a household has a problem with housing affordability if it cannot meet the minimum or basic standard for non-housing needs after paying for housing. This is a reverse approach that moves the housing affordability issue away from housing to non-housing consumption (Lau and Li, 2006; Leishman and Rowley, 2012). Stone (2006) argues that the residual income approach is a more accurate and carefully crafted indicator for assessing housing affordability, and identifies the latter in a manner that is sensitive to distinctions in household composition and income.

Bramley (2012) notes that the residual income approach reflects the definition of poverty and the use of 'equivalisation scales' to show how poverty varies according to the level of need associated with different (by size and composition) households. Compared to the price to income ratio approach, which does not effectively recognise and capture the importance of household composition in defining housing affordability, the residual income approach does have its advantages (see: Leishman and Rowley, 2012). However, Bramley (2012) argues that it defines affordability on the basis of 'normative standards', for both housing and non-housing consumption. He indicates that there is a firm basis for housing quality standards in England called 'Decent Homes',⁷ together with the 'fitting standards' size requirements for social housing in the UK, but agreed standards for non-housing consumption do not exist

⁷ The Decent Homes Standard is a technical standard for public housing introduced by the UK government, but scholars such as Gibb (2014) argue that this standard is very low.

(ibid.). This is a potential problem that may make it difficult to use the residual income approach to measure housing affordability in practice, as there is a lack of consensus regarding what the standards are or should be. Even across the UK, there is variation in housing standards, and in many other countries widely accepted and adopted standards for housing quality and size do not exist at all, making the application of this measure even more difficult. For example, in China the lack of any housing and non-housing standards makes applying the residual income approach considerably challenging.

All in all, it can be concluded that although the residual income approach may be more precise and finely honed (see: Stone, 2006), it would be more difficult to employ than the traditional ratio approach.

2.3.2.3 Other Approaches

Apart from the main two approaches mentioned above, according to Young et al. (2013), in the UK an approach called ‘Housing Benefit Dependency’ is used to define rental affordability. Housing Benefit aims to help a tenant pay his or her rent if on low income (GOV.UK, 2013). A key feature of the Housing Benefit Dependency measure is the assumption that a threshold income level exists that prevents a household from qualifying for Housing Benefit, and if a household has an income above the income level threshold that qualifies them for Housing Benefit, then they should not have a rental affordability problem (Young et al., 2013).

Also regarding the UK, Wilcox (2005) proposes a definition of the intermediate housing market (IHM) to measure affordability. The IHM focuses on younger households aged from 20 to 39 who can afford to pay more than social rent but cannot afford to pay at the bottom-end of the home ownership market (ibid.). Using the IHM, Wilcox (2005) divides all younger households into five groups: those not in work; those in work but on housing benefit; those not on housing benefit but who cannot buy at the lowest decile level (the narrow IHM); those who cannot buy at the lowest quartile level; and finally, those who can buy at the lowest quartile level. The three middle groups taken together are termed the broad IHM (ibid.). Based on the IHM, Wilcox (2005) identifies the number of younger households aged 20 to 39 who cannot afford to access home ownership at the lowest decile and lowest quartile house prices in each local authority district in the UK. Holmans and Monk (2010) evaluate the

assumptions of Wilcox's IHM approach and highlight that it is based on younger household incomes and assumes the existence of a consistent house price measure for two- and three-bedroom dwellings. They also indicate that the underlying principle for constructing Wilcox's IHM theory is the lower quartile and lower decile,⁸ which is an alternative to the most widely used concept used to measure affordability: the median (ibid.). Gibb et al. (2013) also argue that there are many different measures and definitions used for housing affordability, but that a trend has emerged of these measurements and definitions increasingly relying on the IHM to reveal the housing affordability problem to the group of people with the lowest income and in the most need of affordable housing.

In China, Ying et al. (2013) propose an alternative questionnaire approach using 'self-assessment' to measure housing affordability and identify problems with affordability for the sandwich class in Guangzhou. In a test study, they asked 15,789 participants who were owners of capped-price housing in Guangzhou (representing the sandwich class) to directly assess what they perceived to be an affordable home (ibid.). They used questionnaires containing questions such as 'what is the maximum affordable home price in your mind?', 'what is the maximum affordable down payment in your mind?' and 'what is the maximum affordable monthly mortgage payment in your mind?' to gauge the housing affordability problem (ibid.). It is believed that these empirical findings can help deepen knowledge of the determinants of homeownership affordability in a new emerging economy with an underdeveloped housing system such as China by providing subjective data, since much official data is unavailable or has not yet been collected for traditional affordability analysis (ibid.). However, on the other side, this approach may have the potential for bias as 'social man' has bounded rationality, which has been discussed before (see Section 2.2.1.3).

2.3.3 Owning and Renting

When discussing housing affordability, owner-occupied and rental markets are fundamentally different, and this difference should be recognised and analysed in the present study.

Regarding property purchasers, housing affordability primarily depends on their incomes and housing costs, which contain house prices and interest rates (Yates, 2008). The interaction of

⁸ Lower quartile/decile earnings to lower quartile/decile house price. Lower and lowest quartile/decile are important as they reflect the cheapest market housing available for sale.

house prices, purchasers' annual incomes, and mortgage costs, along with personal savings and deposit assistance, affect the affordability of home ownership (ibid.). Especially since interest rates may change over the mortgage repayment period, affecting the cost of housing, and thus the level of housing affordability. Measurements of affordability are easier for tenants, because at a simple level, housing affordability on the rental market can be easily measured by comparing tenants' incomes and rents to be paid (Haffner and Boumeester, 2010). Therefore, MacLennan and O'Sullivan (2008) further argue that house price to income ratios gauge little about housing affordability in the owner-occupied market, as they are not decent indicators of the capacity of a household to make mortgage payments, nor of the real user costs of housing capital. In contrast, rent to income or earnings ratios have a straightforward interpretation when applied to the rental market. Fundamentally, the difference between owning and renting is rooted in the nature of those different tenures in terms of rights and responsibilities.

However, an interesting point here is that although the problem of housing affordability for home purchasers tends to receive the most attention by academics and the media, those who face the most serious affordability problem are not purchasers but households in the private rental sector (Yates, 2008). Based on an empirical study conducted in the Netherlands, Haffner and Boumeester (2010) argue that the average net housing expenditure to income ratio in the rental market is much higher (24%) than in the owner-occupied market (16%). This divergence in the ratios is due to the average disposable household income for tenants being 56% lower than that of owner-occupiers (ibid.). This reveals that higher-income households may have the means to access the owner-occupied market, whereas lower-income households may be incapable of affording owner-occupied housing and even have difficulty in affording rented housing.

2.3.4 Defining and Measuring Housing Affordability

In general, the price to income ratio reflects a common sense approach towards examining housing affordability and consumer demand theory (Bramley, 2012). It is easy to use and can be easily understood. However, it does fail to adequately capture the significance of diverse household composition in assessing and defining a housing affordability gap, and it neglects some important factors that may influence housing affordability such as housing quality, housing size, over-crowding, and income disparity.

Bramley (2012) suggests that the residual income approach reflects the definition of poverty, the traditions of measurement, and household size and composition. It may be a more precise indicator than the price to income ratio. However, it is more difficult to apply to measure housing affordability since the standards for non-housing consumption are still open to debate, and the standards for housing consumption in many countries and regions are still unclear and ambiguous.

Lau and Li (2006) argue that neither the ratio approach nor the residual income approach takes into account households' subjective preference structures and locational differences in housing costs. Nevertheless, these two approaches are still highly useful and helpful for describing, analysing, and managing the housing affordability issue (Hulchanski, 1995; Lau and Li, 2006).

Glass et al. (2006) suggest that all definitions of housing affordability can be criticised, and there is a need to avoid forcing an inappropriate measure on specific local contexts. Also, Leishman and Rowley (2012) conclude that a single measure of affordability may not be adequate to describe and capture the complexity of the housing affordability issue. Bramley (2012) shares this opinion, and suggests that the traditional ratio approach is still the better single measure; with the use of the residual income approach as a supporting measure, it could better explain and measure the affordability problem.

Hence, in this thesis the housing affordability issue is defined and measured using a mixed approach. It combines the price to income ratio and the residual income approaches to examine the extent of the affordability problem in major Chinese cities. This is necessary because an official definition of the affordability problem is still missing in the country.

2.4 How the Market Has Failed – Examining Housing Affordability in China

After China opened itself to the world in the late 1970s, substantial progress and social and economic development were made throughout the country. Along with this economic development, the housing market in China also developed and changed. However, since the reform was introduced in 1998 in the housing market, urban households, government officers, and academics have been concerned about high house prices in many Chinese cities. These prices are considered to be beyond ordinary residents' purchasing power (Liu et al., 2008).

Thus, the purpose of this section is to examine how serious the housing affordability problem is in China, and specifically in its cities. As previously mentioned, this is because China's land and housing policies in urban areas are different from those in rural areas. Furthermore, when discussing housing affordability, the research scope must be clearly defined, as there are large differences between major and small-medium cities. This section gauges the extent of the housing affordability problem in some major cities such as Beijing.

2.4.1 Affordability in the Owner-Occupied Market

In the current Chinese housing market, owner occupation attracts the most public attention in terms of the growing gap in the affordability of housing. Most Chinese academic studies also tend to focus on this market (see: Shi et al., 2016; Yi et al., 2016).

2.4.1.1 Examination Based on the Price to Income Ratio Approach

A report released in April 2016,⁹ which was based on research conducted by E-house China R&D Institute in Shanghai, provided a general picture of the current state of the affordability issue using the price to income ratio approach on the national level. This study generated ratios by using the average household income and average price for 100m² houses in each local area¹⁰ to examine 30 provincial-level administrative regions in China except Tibet, Hong Kong SAR, Macau SAR, and Taiwan in 2015. The results showed that the price to income ratios in China had a tendency towards serious polarisation. In more than 80% of the areas in West China, the price to income ratios were decreasing. Furthermore, in Central

⁹ See: <http://bj.leju.com/news/2016-04-30/07266131956549222183697.shtml>

¹⁰ Data was sourced from the National Bureau of Statistics of China.

China, the price to income ratios in half of the cities were dropping from their previously high levels. However, in East China, where the most major and advanced cities are located, the ratios had generally increased, and the ratios in 60% of areas in East China were very high. This research project set the ratio of 6 as a reasonable benchmark to test affordability. In West China, the ratio was 5.9, whereas in Central China it was 6.3, suggesting that house prices in these regions were reasonably affordable as a whole. In contrast, the average price to income ratio was much higher in East China at 9.4, implying that house prices there were generally unaffordable. Finally, when all 30 provinces were considered together, the national average ratio was 7.3.

Furthermore, other research has shown that around 60% of major Chinese cities have certain housing affordability problems. Among them, the first-tier cities of Beijing, Shanghai, and Shenzhen are facing the severest housing affordability difficulties in China (see: Kuan and Li, 2012). The Shanghai E-House Real Estate Research Institute also studied the affordability of housing in 35 major cities in China using the same price to income ratio approach mentioned above and published its own report in April 2016.¹¹ The average ratio of those major cities was 10.2, but polarisation was very serious too; see Table 2.1 below.

¹¹ See: <http://money.163.com/16/0414/16/BKKIN1DI00253B0H.html>

Table 2.1: Housing Affordability in Major Cities of China, from Worst to Best

Ranking	City	Price to Income Ratio
1	Shenzhen	27.7
2	Shanghai	20.8
3	Beijing	18.1
4	Xiamen	16.6
5	Fuzhou	14.7
6	Taiyuan	12.2
7	Tianjin	11.7
8	Nanjing	11.3
8	Hangzhou	11.3
10	Guangzhou	11.1
11	Haikou	10.7
12	Zhengzhou	10.3
13	Dalian	9.7
13	Urumqi	9.7
15	Ningbo	9.6
16	Nanchang	9.3
17	Hefei	9.2
18	Shijiazhuang	9.0
19	Nanning	8.8
20	Chongqing	8.4
21	Wuhan	8.3
21	Lanzhou	8.3
23	Changchun	8.0
24	Harbin	7.9
24	Kunming	7.9
26	Xi'an	7.4
26	Xining	7.4
26	Jinan	7.4
29	Chengdu	7.3
29	Qingdao	7.3
31	Guiyang	6.6
32	Shenyang	6.1
33	Hohhot	5.9
34	Yinchuan	5.8
35	Changsha	5.2

Source: Shanghai E-House Real Estate Research Institute, 2016.

The above table highlights four tier-one cities in China, namely Beijing, Shanghai, Guangzhou, and Shenzhen, and one second-tier city, Nanjing. It can be seen that based on the ratio approach, in 2016 Shenzhen was the least affordable city in mainland China, followed by Shanghai and Beijing. As mentioned previously, in 2012 Kuan and Li suggested that Beijing, Shanghai, and Shenzhen had the most serious housing affordability problems. Four years later, this situation remained. However, housing affordability issues in some second-tier cities such as Nanjing, Xiamen, and Fuzhou, were more critical than in the first-tier city of Guangzhou. High house prices could be the underlying reason for this phenomenon. In fact, the Chinese real estate market has changed dramatically since 2015, with house prices in several second-tier cities surging and passing tier-one cities such as Guangzhou, and as of July 2016, Nanjing is the fourth most expensive city regarding house prices in mainland China.¹²

To gain a clearer understanding of the affordability issue in China, it could be more useful and meaningful to compare those Chinese cities with renowned international cities. The Demographia International Housing Affordability Survey 2016¹³ examined affordability issues in 367 housing markets from nine countries and regions including Australia, Canada, Hong Kong, Japan, New Zealand, the Republic of Ireland, Singapore, the UK, and the US; to this end, the previously discussed ratio approach of the median multiple was used. Mainland China was excluded from the survey because the researchers had no access to reliable data on this region. This survey suggested that a housing market was ‘affordable’ if the median multiple was 3.0 and under, ‘moderately unaffordable’ if it was between 3.1 and 4.0, and ‘seriously unaffordable’ when it ranged from 4.1 to 5.0. If the median multiple was 5.1 and over, the housing market was called ‘severely unaffordable’. Based on this survey, the 10 least affordable major housing markets were the following (see Table 2.2).

¹² See Table 4.4.

¹³ See: <http://demographia.com/dhi2016.pdf>

Table 2.2: International Housing Affordability

Rank (Least Affordable Market)	Nation	Metropolitan Market	Median Multiple
1	China	Hong Kong	19.0
2	Australia	Sydney	12.2
3	Canada	Vancouver	10.8
4	Australia	Melbourne	9.7
4	N.Z.	Auckland	9.7
4	U.S.	San Jose	9.7
7	U.S.	San Francisco	9.4
8	U.K.	London	8.5
9	U.S.	Los Angeles	8.1
10	U.S.	San Diego	8.1

Source: Cox and Pavletich, 2016.

From the table above, it can be seen that the highest ratio among those international cities was 19.0 for Hong Kong, which was significantly higher than the second one – 12.2 for Sydney, Australia. London ranked eighth, with a ratio of 8.5. The rest of the markets in the top 10 were all major cities in Canada, New Zealand, and the US.

With reference to major cities of mainland China, Table 1 shows a ratio of 27.7 for Shenzhen, 20.8 for Shanghai, 18.1 for Beijing, and 11.3 for Nanjing. One can suspect that the housing affordability issue might be very serious in some mainland cities of China, and might be even more severe than in major international cities such as Hong Kong, Sydney, Vancouver, San Francisco, and London. However, it should be noted that when using the ratio approach to test the affordability issue, China is accustomed to using the ‘average’ (see the National Bureau of Statistics of China), such as the average household income and average house price, while western countries such as the UK and the US prefer to employ the ‘medium’; for example, the Office for National Statistics in the UK casts the medium household income. As a result, the price to income ratios for mainland Chinese cities and international cities are not directly comparable, as the methodology used to determine the ratios differ. Nevertheless, the

above comparison can be deemed to be authoritative and up-to-date, since all the data used for calculations were official and the most recent. Most significantly, this comparison demonstrates that several major cities in China might have severe housing affordability problems from an international perspective.

2.4.1.2 Examination Based on the Residual Income Approach

Studies on the housing affordability issue in China uses the residual income approach much less than the ratio approach, but it can be seen that most scholars and researchers now tend to use both. Dong (2012) suggests that due to practical problems, for instance the fact that statistics are not comprehensive and that calculation methods are not unified, jointly employing the ratio approach and the residual income approach could be the most effective way to examine this issue.

Specifically, Dong (2012) used the residual income approach to examine the affordability issue for Chinese urban residents in general. His data were all official and from the government, including average household income, average household home size, and average house price. He assumed that housing cost was the mortgage repayment on the following basis: the down payment of 30% had been paid, the remaining 70% was the mortgage, the interest rate was 7% per year, and the term was 30 years. Also, the household had chosen to repay the mortgage using the average capital plus interest method (*ibid.*). The results are presented in Table 2.3.

Table 2.3: Residual Income for Chinese Urban Residents, from 2000 to 2010
(RMB per month)

<i>Year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>
Disposable Income After Non-Housing Costs	465	542	582	667	738	829	975	1157	1378	1478	1673
Housing Costs	575	606	726	779	956	1126	1221	1487	1483	1878	2003
Residual Income	-110	-64	-144	-112	-218	-297	-246	-330	-105	-400	-330

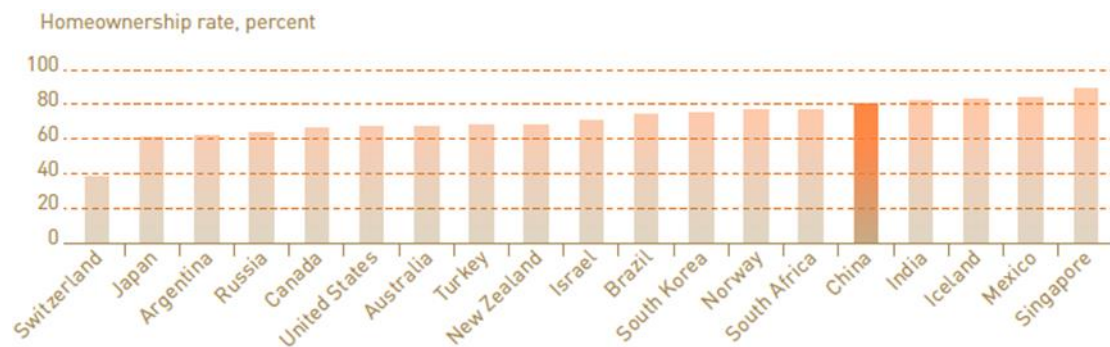
Source: Dong, 2012.

The table shows that in China, from 2000 to 2010, the residual income was always a minus figure, and the gap between disposable income subtracting non-housing costs and housing costs had the general tendency to continue to grow. This reveals that housing affordability in urban China is a common problem, and the ability of the public to afford a house is declining. In short, housing in urban China, especially in major first-tier and second-tier cities, is unaffordable, regardless of the approach used.

2.4.2 Homeownership Ratio in China

The discussion so far has focused on the housing purchasing affordability; however, this is only part of the housing affordability issue. More than 80% of housing is currently privately owned in urban China, which is strong evidence of the promotion of the privatisation policies implemented during the 1980s and 1990s (Barth et al., 2012). In accordance with figures released by the Southwestern University of Finance and Economics of China in the 2014 China Household Finance Survey, the homeownership ratio in urban China was 89% at the end of March 2014, while the ratio was 96.7% for rural China over the same period (CHFS, 2014). Figure 2.1 compares the homeownership ratio in urban China to those in some other countries. From this figure, it can be seen that China has a higher rate than many more developed economies.

Figure 2.1: Homeownership Rates in China and the World (selected countries)



Source: Barth et al., 2012.

In Chinese major cities such as Beijing, 72.4% of urban households owned their homes in the fourth quarter of 2010 (Yao, 2011). This demonstrates that not every urban household needs to purchase property from the open market for living purposes. Since the housing reforms in 1998 enabled most urban households to have a house of their own at very low or heavily discounted prices (ibid.). As a result, if only the affordability of owner occupation is studied but without taking homeownership rate into account, there is the potential to overestimate the housing affordability problem in Chinese cities such as Beijing. However, a serious problem exists for new urban residents with a large population base,¹⁴ such as migrant workers, new university graduates, and local registered populations who want to upgrade their old and poor-quality homes. This large proportion of the urban population feels powerless and frustrated by its inability to buy housing from the open market.

2.4.3 Affordability in the Rental Market

The study of the rental market of China is much less extensive than that of the homeownership market. Based on the homeownership rate proposed by Barth et al. (2012), around 20% of urban residents do not live in their own homes and thus most are in need of rental properties. In addition, it is worth noting that many major cities have restrictions on non-local residents (citizens without *hukou*) purchasing properties. For example, in Shanghai, hukou-less residents must provide evidence that they have paid taxes or made social security payments for more than a year, namely at least 13 months, to purchase a house in the city

¹⁴ For example, in 2012 the population of Shanghai was 24.33 million, of which 10 million were new urban residents, and in Beijing, the population was 20.69 million, including 7.74 new urban residents.

(Shanghai Municipal Government, 2016). The same policy applies in Nanjing (Nanjing Municipal Government, 2016a). The strictest policy is in Beijing, where non-local residents must pay taxes for at least five years before they can buy a house in the city (Beijing Municipal Government, 2016). Therefore, renting properties has become the only option available to many migrant workers and young adults such as new university graduates to live in China's major cities, such as Beijing, Shanghai, and Nanjing. As a result, it is likely that the ratio of urban residents who need to rent a house to live is greater than 20%, especially in major cities.

Recent research shows that in the first-tier cities of Beijing and Shanghai, the average rent to income ratio is generally above 60%, and in Shenzhen this ratio is even greater than 70% (Li, 2015). In second-tier cities, such as Nanjing, the average rent to income ratio is above 50% in general, which is the same as in the first-tier city of Guangzhou (ibid.). Jia et al. (2011) found that in the second-tier city of Hangzhou, the rent to income ratio is around 40%, assuming a household is renting an apartment with floor space of 90m². Furthermore, a research report released in April 2016 by a UK-based non-for-profit organisation, the Global Cities Business Alliance, indicates that the rental affordability in Beijing could be even more serious than the result presented by the Chinese studies, with its rental market ranked as the least affordable in the world (Financial Times, 2016); see Figure 2.2 below.

Figure 2.2: Average Rent to Net Earnings Ratios of World Cities, 2015



Source: Global Cities Business Alliance (2016) cited in Financial Times, 2016

Figure 2.2 shows that Beijing has the world's least affordable rental market among 15 global cities, with average rental prices more than 1.2 times the average income. This is nearly twice as expensive as the city's nearest competitor, Abu Dhabi in the UAE.

As discussed above, the group of people who face the most serious housing affordability problem are not purchasers but households in the private rental sector. Moreover, Leishman and Rowley (2012), Ong and Wood (2011), and Stone (2006) argue that if net housing costs such as rent exceed 30% of household income, then housing is deemed to be unaffordable. As a result, given historic ratios of more than 60% in Shanghai and, more than 50% in Nanjing, and more recently the 120% ratio in Beijing, it can logically be deduced that rental affordability is a serious problem in many other major cities of China. While the research emphasis and the focus of the media in China are not on the rental housing market, renters in Chinese major cities do face a highly severe affordability issue and, as mentioned above, in major cities where rental affordability problems are the worst in the country, renting is the only option for many of the city's new residents.

2.4.4 Poor Quality and Over-Crowding

As previously stated, Leishman and Rowley (2012) and Yang and Shen (2008) indicate that the housing affordability issue is also related to the level of housing quality and the occurrence of over-crowding.

In China, the first urban household survey on housing conditions was carried out in 1985, and the results revealed that the majority of urban residents experienced poor housing conditions and over-crowding (Mak et al., 2007). Mak et al. (2007) examined the results of this survey and found that more than 27% of urban residents shared their dwellings with others, around 7.4% had an average floor space of less than 4m² per person, and around 76% did not have access to their own toilets. Moreover, about 37% had to share a kitchen with others, and 27% did not have running water (ibid.).

The economic and housing reforms have resulted in a great improvement in housing conditions for urban residents in China (ibid.). Liu and Yang (2014) report that the average floor space per person in urban China had reached 31.93m² by 2010, and was expected to grow further to 35m² by 2020. Wang (2013) states that many urban families in China now live in purpose-built housing, which are flats of a high quality that are directly comparable with flats being built in many well-developed housing markets such as the UK (ibid.).

On the other hand, new problems have emerged in terms of housing quality and over-crowding in urban China. It is estimated that over 220 million migrant workers have relocated from rural China to urban areas seeking higher wages, better living conditions, and more opportunities (ibid.). However, these migrant workers are excluded from social and welfare services provided by cities, including housing (ibid.). Given the relatively low wages these migrant workers receive and the high housing prices they face, most are forced to live in informal housing in urban villages after they come to the cities (ibid.).

Zhang et al. investigated urban villages in Beijing in 2009. They found that houses in urban village are over-crowded and poorly maintained, with very narrow public stairways and inadequate public facilities (Zhang et al., 2009). In addition, the distances between houses are small and far below fire-control standards, and the garbage scattered around poses public health risks (ibid.). In short, the living conditions in urban villages are extremely poor, as

reflected in the migrant workers' own perceptions (ibid.). Wang (2013) has a similar view on urban villages and notes that the floor space available for migrant workers is much smaller than that for urban citizens. The buildings in urban villages are also always of poor internal and external design, they lack modern facilities, and residents do not have access to adequate green and open space (ibid.).

In general, it can be concluded that although housing conditions and quality have significantly improved for Chinese urban residents in the last 20 years, problems still exist. The issues of poor housing quality and over-crowding are especially severe for migrant workers living in urban villages, and this issue cannot be ignored in addressing housing affordability in urban China, as poor housing quality and over-crowding in urban villages will reduce the affordability level in urban China such as Beijing as a whole.

2.5 Addressing the Failure – Government Interventions

The studies discussed above show that the housing market in urban China, whether it is owner-occupied or rental, is facing a serious affordability problem, and it is potentially on one of the greatest scales in the world. International comparisons also reveal that the housing market in China has failed greatly. While academic studies should always show a neutral and objective stance and avoid the use of strong affirmations, many scholars use strong words regarding the real estate market of China, for instance suggesting that it is 'out of control' (see: Du, 2008; Lin, 2010; Wu, 2007).

At the beginning of this chapter, market failure theory was used to explain why a housing market could fail, and the evidence demonstrates that the Chinese housing market appears to have done so. However, market failure theory also forms the theoretical basis and rationale for government interventions, for example through taxation, subsidies, and policy-making (Phang, 2013). In other words, it is justified that the government should intervene to correct market failures. Heald (1983) suggests that economic efficiency is relevant to the division of economic activity between the sphere of the market and that of the state, as market efficiency is not the sole value but has an important bearing upon the balance of both economic welfare and the ability to achieve social objectives. Thus, Deardorff (2000) indicates that the government should intervene to address inefficiency. In an inefficient market, some people

may have too much of a resource such as housing while others may not have enough. The government should try to combat this problem through four modes of intervention: regulation, taxation, subsidies, and direct provision or transfer of payments (ibid.). As previously noted, Le Grand et al. (2008) propose that the reason for a government to correct market failure does not only concern efficiency, but should focus more on improving social equity. Timmer (1989) has the same view that governments may also intervene in housing markets to promote social fairness. To this end, Deardorff (2000) argues that governments often try, through welfare programs, to reallocate financial resources from the wealthy to those people who are in most and urgent need.

2.5.1 State Interventions in the Housing Market

Regarding the housing market, Reed (2015) suggests that there are five concrete measures with which a government can intervene to tackle the affordability issue caused by market failure. These measures are the following:

- **Government intervenes in the rental market**

In some countries, such as Germany, there is a general culture of renting to access housing instead of assuming all citizens should obtain home ownership, as renting is normally cheaper than buying (ibid.).

- **Government provides affordable housing**

Most countries take this action, especially Asian countries and regions such as Hong Kong and Singapore (ibid.).

- **Cities embrace higher density housing**

Many global cities encourage higher density living, such as Hong Kong and New York, to make better use of limited inner-city land supply (ibid.).

- **Public transport allows residents to commute to less expensive housing**

Less expensive housing is usually located away from the central business district but requires additional commuting time, and convenient public transport is thus a necessity (ibid.).

- **Multiple-person households are encouraged**

Lower demand for housing can be achieved by encouraging single persons to form multiple-person households (ibid.).

Specifically in China, the government has realised that failures in the market have created a serious housing affordability issue, and it now aims to mitigate this problem. Building affordable housing via a welfare programme has become the major mitigation method (Man, 2011). Namely, the government provides affordable housing to those in need, as suggested by Reed. In addition, as many public rental housing units have been constructed, it is believed that the Chinese government has also had the idea of intervening in the rental market, as proposed by Reed. In 1991, the central government introduced ‘affordable housing’, and it quickly garnered attention on both the policy and practical levels in the two decades that followed (You et al., 2011). Today, it is still a topic of concern, extensively debated by the public, media, and governments in China (ibid.).

Ni (2013) states that China should aim to provide housing for the population within the lowest 40% income group, as these people have limited ability to access homeownership. However, the author also suggests that the 1998 housing reform resulted in an insufficient flow of affordable housing being supplied to the Chinese housing market between 1998 and 2010. At the beginning of the reform, the supply of affordable housing was 20% of total housing, supply whereas this ratio had dropped to 2.9% by 2010 (ibid.).

Since 2008, Chinese policy-makers have acknowledged the excessive marketisation in the housing market and severe shortage of affordable housing, and have strengthened their focus on the supply of affordable housing in response to popular discontent over high house prices in major cities (Ulrich, 2010). This shift is described in the following table to provide an intuitive understanding of it (see Table 2.4).

Table 2.4: Direction of Housing Policy and Market Shift

1977-1991	1992-1998	1998-2007	2008-
Gradual change from public rental and work unit ownership to private family ownership.		Towards a market-dominated home owning urban society.	Addressing housing affordability problems and moving towards a mixed ownership housing system.

Source: Wang, 2013

2.5.2 The Government Can Fail Too – Government Failure Theory

Government failure can occur when state interventions simply fail to resolve a market failure, namely when interventions create inefficiency and lead to a misallocation of scarce resources when correcting a market failure (Keech and Munger, 2015). Keech and Munger (2015) argue that a government can fail when it does not develop and maintain appropriate institutions including formal, written rules or unwritten practices that constitute the ‘rules of the game’. This can be defined as substantive government failures. Moreover, there are limitations to a comprehensive set of procedural alternatives for making collective decisions, as the five procedures of voting, pluralism, markets, bargaining, and cost-benefit analysis each have fundamental flaws. Thus, government procedures can fail in the sense that outcomes deviate from the Pareto optimality; this can be defined as procedural government failures (ibid.). In addition, according to behavioural economics, human beings are only partly rational. Therefore, if markets can fail for this reason, as stated previously, then government policies can fail for the same reason, and with riskier consequences (ibid.). Moreover, Dolfsma (2013) argues that although the concept of government failure has not received much serious attention compared to the market failure theory, government failure can be quantitatively and specifically measured. To this end, government expenditure or debt as a percentage of GDP has been pointed to as an indication of this failure.

Specifically in the context of China, Chen (2016) suggests that the housing policies in 2010 did improve the housing market efficiency, preventing house prices from soaring and helping households gain access to affordable homeownership by studying the national housing policies issued in that year. However, during the implementation of the affordable housing policy, especially after 2010, a series of problems emerged, specifically in relation to the financing of new builds. This implies that the Chinese government has struggled to find a long-term and sustainable solution to the housing affordability problem. However, government failures have occurred in the process of correcting the market failure, further investigation is required. This is done in the next chapter.

2.6 Conclusion

This chapter started by explaining the market failure theory and its background. Afterwards, the major causes of market failures and the implications in the Chinese housing market were summarised and analysed. It was concluded that externalities, information problems, and market power imperfections are the major causes of the failure in China's housing market.

A direct consequence of this failure is the housing affordability problem. As there is currently no official definition of 'housing affordability' in China and no official approach to measure it, this chapter reviewed the literature and summarised the major approaches widely used by academic circles and the industry, namely the ratio approach and the residual income approach, to provide suitable tools to gauge this problem in China. The results were concerning. Different approaches revealed that the housing market in major Chinese cities, both owner-occupied and rental, is facing a severe affordability crisis. Among several renowned global cities, the least affordable are all in China. Many people probably have a sense that China has a housing affordability problem, but do not understand its extent or that it might be the most serious such problem in the world.

Government intervention is often called for and justified in the housing market due to the existence of such failures. The Chinese government has also recognised this problem, and has tried to build affordable housing to house the poor. Nevertheless, government can fail too when its intervention in the economy to correct a market failure creates inefficiency and leads to a misallocation of scarce resources. However, in China the process of addressing the affordability issue is not easy. This is discussed in the next chapter.

Chapter 3: Affordable Housing and Its Finance in China, Problems and Opportunities

3.1 Introduction

According to international standards, the affordability issue in China is very serious. This chapter closely examines how the government has coped with this issue in detail. It starts by reviewing and summarising the affordable housing reforms and programmes in China, from 1998 to date. Then, it explains how such programmes are financed and built in the country. In particular, the relationships between stakeholders are discussed to demonstrate the complexity in the affordable housing sector in China, and thus to understand the difficulty of the role of local governments in participating in this sector.

As a reference, this chapter then studies the issue of affordable housing finance in developed countries, including the US, the UK, and Australia, representing the models in North America, Europe, and Asia Pacific, to understand their differences compared to China's practices. Finally, the chapter introduces the investment vehicle of REITs, and shows how they are linked to the affordable housing sector. This forms a background for further investigation of the proposed affordable housing REITs in China.

3.2 Affordable Housing in China

The previous chapter established that, since 1998 when China started to adopt a market-oriented housing system, the country has made significant improvements regarding housing size, conditions, and ownership for hundreds of millions of urban citizens in a very short period. However, house prices in many major cities have risen to uncontrollably high levels, out of reach for many ordinary urban residents and especially new urban citizens, who represent a massive population base in many of China's cities. In this vein, Yang and Chen (2014) consider that the housing affordability problem is one of the largest challenges in urban China, and has become a serious social issue that even threatens the political stability of the country.

The government has known the severity of the issue for a long time and has tried to mitigate it. Its main strategy has been to build affordable housing to boost the supply of houses available in the low-end market (Barth et al., 2015). This section examines what affordable housing is in China by first reviewing the history and development of the affordable housing sector after the housing reform, and then studying the past and ongoing affordable housing programmes in the country.

3.2.1 The History and Development of the Affordable Housing Sector in China, Post-Housing Reform

In China, the term *affordable housing* first appeared in an official document, *Notice on Keeping the Reform of the Urban Housing System Stable and Active*, in 1991 (You et al., 2011). However, prior to the housing reform in 1998, the affordable housing system in the country was not systematically established, as the vast majority of urban citizens were housed by their work units (in Chinese: *danwei*) and the demand for affordable housing was thus limited (Chen et al., 2013). For example, according to a report produced by the World Bank, in the early 1990s more than 90% of urban households in China lived in houses provided by the public sector, representing the largest ratio in the world at that point in time (World Bank, 1991).

In 1998, the modern affordable housing system was initiated, along with the start of the reforms in the housing sector. However, it is worth noting that in the decade that followed, the concept and meaning of affordable housing in the country continued to change with no single fixed and uniform definition established by the government (You et al., 2011). In the early stages of the reform, the central government introduced a two-tier affordable housing system which included economic comfortable housing (ECH) and cheap rental housing (CRH) (Shi et al., 2016). Shantytown redevelopment housing (SRH) was also established then, but it has only been counted as a type of affordable housing since 2007 (Chen et al., 2013; Shi et al., 2016) (different categories of affordable housing in China are defined in the next section). The government planned for ECH to become the main form of housing; it would house 80% of urban households, excluding the lowest and highest income groups (Chen et al., 2013). CRH was expected to accommodate the poorest urban residents who could only pay nominal rent that was significantly below the market level (ibid.).

However, Rosen and Ross (2000) suggest that after the initial housing reform, the Chinese government soon realised that it could exploit a real estate boom to boost GDP growth and achieve other policy goals through land finance. Hence, the importance placed on affordable housing diminished sharply after 1998. Doling and Ronald (2014) argue that many national housing systems in East Asian countries shared a common goal in that they perceived housing development to be a key driver to stimulate urban development and economic growth. Barth et al. (2015) also highlight the Chinese government's policy switch between 1998 and 2002 towards further development of the private real estate market, and note that the private sector responded by launching countless real estate projects across urban China. In association with this shift in policy, in 2003 the State Council officially dropped the idea of promoting ECH to become the main housing form for urban residents in the post-housing reform age (State Council, 2003). Effectively, the affordable housing sector was gradually marginalised following its initial introduction, and excluded from the focus of the political agenda regarding Chinese real estate for more than a decade; see Table 3.1 below.

Table 3.1: Economic Comfortable Housing Units Built in China, 1999-2010

Year	All housing units built in China (in thousands)	ECH units (in thousands)	ECH units % share of all commodity housing
1999	1946.4	485.0	24.9
2000	2139.7	603.6	28.2
2001	2414.4	604.8	25.0
2002	2629.6	538.5	20.5
2003	3021.1	447.7	14.8
2004	4042.2	497.5	12.3
2005	3682.5	287.3	7.8
2006	4005.3	338.0	8.4
2007	4401.2	159.4	8.1
2008	4939.2	144.6	7.2
2009	5548.9	143.6	7.2
2010	6019.8	163.2	6.6

Source: Chen et al., 2013.

It was previously mentioned and should be well established that the rapid and successful expansion of urban housing stock through marketisation had a serious side effect, as house prices in many cities increased dramatically and private market housing became unaffordable to low- and middle-income groups (Chen et al., 2013). The Central government eventually realised the growing issue and in August 2007, the State Council issued an important document, *Opinions on Tackling Housing Difficulties of Low-income Families in Urban Areas*, which showed a renewed commitment of the government to intervene in the housing market by building affordable housing. As part of the policy change, CRH was chosen to become the premier form of affordable housing (ibid.). It is worth noting here that although CRH was introduced at the start of the housing reform, the government did not in fact build any CRH until 2007 (Ren, 2012). In 2008, the State Council further made a plan that 7.47 million units of affordable housing would be provided to the urban poor by 2011, mainly through CRH and SRH¹⁵ (State Council, 2008). Later, in July 2009, the Ministry of Housing and Urban-Rural Development of China (MOHURD) issued a detailed document guiding the development of CRH for the period between 2009 and 2011, and the State Council committed to accelerating the construction of affordable housing by establishing the target to properly house 15.4 million urban poor households through the affordable housing sector by 2012 (Chen et al., 2013).

Yet, this renewed commitment did not manifest into action in the affordable housing sector until 2010. That year, the State Council introduced capped-price housing (CPH), which is ‘commodity housing with a controlled price’ and public rental housing (PRH), thus ending the original two-tier affordable housing system introduced back in 1998 (Y. Huang, 2012; Chen et al., 2013). PRH, which was learned and copied from the public housing model in Hong Kong, initially started to appear in some southern cities around 2009, but the State Council only introduced it as a national initiative in 2010 (Shi et al., 2016). In the meantime, local governments such as Shanghai launched a shared ownership housing (SOH) programme, similar to ECH, which was then repeated across the country after enough knowledge was gained (ibid.). In particular, the Chinese government started to promote the construction of PRH in a highly active way. In January 2011, the then-Premier Minister Wen Jiabao announced a plan to build 36 million units of affordable housing during the national 12th five-

¹⁵ In the fourth quarter of 2008, the central government of China incorporated SRH into the national affordable housing system.

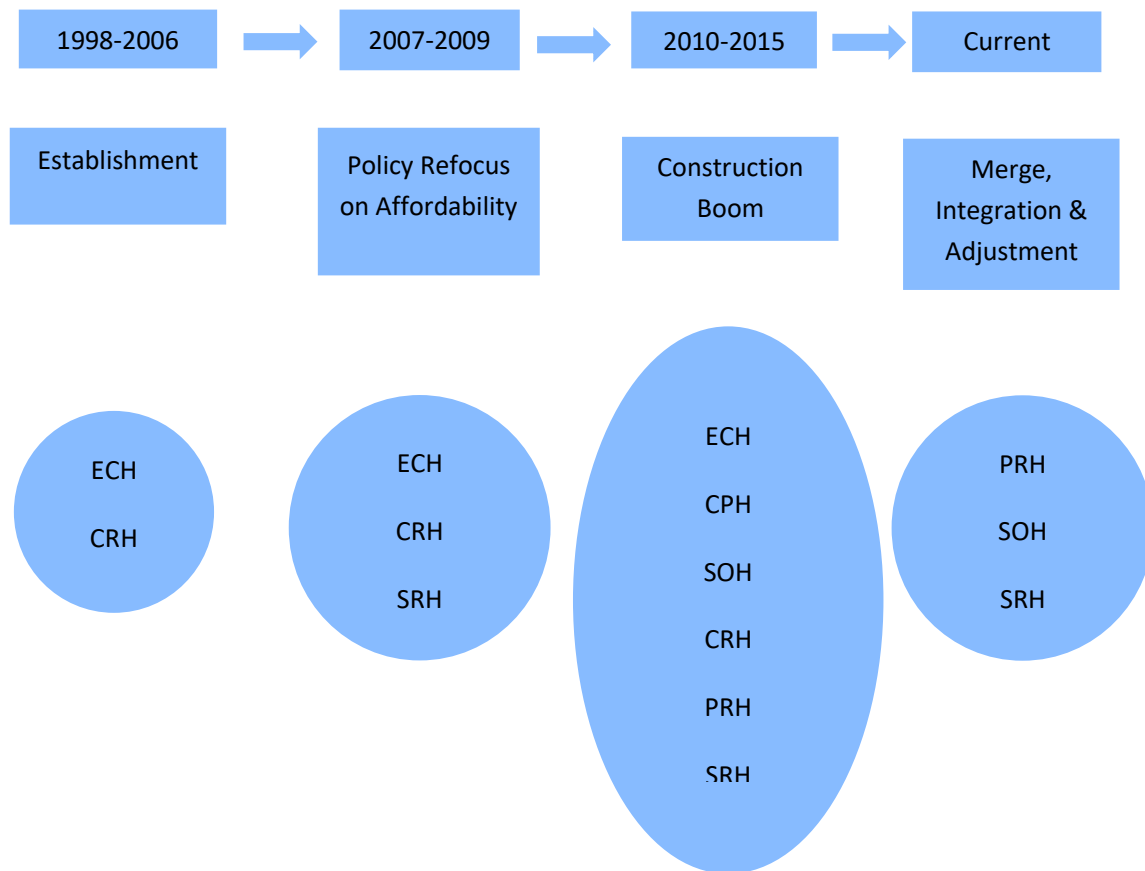
year plan period, namely between 2011 and 2015 (Chen et al., 2013). This policy was a milestone in the history of the country's affordable housing sector, and many scholars such as Chen et al. (2013), Sun (2012), and Zhou (2011) suggest that this plan could be regarded as 'the great leap forward of affordable housing' after the housing reform.¹⁶ This massive affordable housing plan was an immensely difficult target to achieve, but the central government reported that it had to be done by 2016, as mentioned at the beginning of this thesis. In addition, according to the *National 12th Five-Year Plan (2011-2015)*, PRH would be the leading form of affordable housing.

According to official information, the target of building 36 million units of affordable housing was successfully achieved by the end of 2015 (MOHURD, 2016). The affordable housing policy for the 13th five-year plan (2016-2020) presently contains new content, and the government's policy focus has shifted. In light of the latest data, the future perspective of housing provision will mainly focus on SRH and PRH, and the government will keep building SOH to fulfil the needs of homeownership for middle- and low-income citizens (ibid.). Regarding ECH, which is one of the best-known forms of affordable housing in China (the other being CRH), the government has decided to gradually stop building, and in many major cities, such as Beijing, Guangzhou, and Shanghai, local governments have now suspended the construction of ECH and CPH (L. Ma, 2016; Xinhua Net, 2013; Zou et al., 2014). For instance, the Beijing municipal government officially announced that at the start of the 13th five-year plan period, namely on 1 January, 2016, the city would stop supplying land for the construction of ECH and CPH units, with PRH becoming the preferred form of affordable housing provision (Xinhua Net, 2016a). Moreover, CRH was merged with PRH in 2014, with CRH being withdrawn from the historical arena, as PRH will become the only form of affordable rental housing in China in the future (Shi et al., 2016).

In a relatively short period of time, starting in 1998, the affordable housing sector has become established in China and continues to evolve (see Figure 3.1 below). Given the political, social, and economic importance of the affordable housing programme, China will continue to promote affordable housing during the 13th five-year plan period and in the longer term, but what constitutes affordable housing in the country may still be subject to change.

¹⁶ 'The great leap forward' has a derogatory sense in the Chinese context, and in 2012 an official from the MOHURD said that the government could not accept this description of the development of affordable housing.

Figure 3.1: The Development of the Affordable Housing Framework in China



Source: Researcher's summary based on available information, 2016.

3.2.2 Past and Ongoing Affordable Housing Programmes Since 1998

Between 1949, when the People's Republic of China was founded, and the start of the housing reform, the vast majority of housing in urban China was recognised as public housing, built by the state. During the housing reform, nearly all the old public housing stock was sold to residents at hugely discounted rate. As discussed in Section 3.2.1, different housing schemes have been included in China's affordable housing sector at different periods of time, but now the country has an affordable housing system that contains PRH, SOH, and SRH. These are examined in more detail below.

- **Affordable Housing Programmes for Sale**

Different types of affordable housing in the post-reform era have different target groups and play different roles. ECH, CPH, SOH, and SRH are forms used to promote homeownership in urban areas; see Table 3.2 below for details.

Table 3.2: Types of Affordable Housing in Post-Reform China (For Sale)

Type	Target Group	Eligibility Requirement	Description	Latest Development
<i>Economic comfortable housing (ECH)</i>	Low-income urban households	Local residence permit (<i>hukou</i>); income and asset threshold; living space threshold	Unit size is limited to 60-80m ² . The price should be affordable and developers' profit margins are capped at 3-4%.	This programme has been abandoned by many major cities. (Some cities may have ECH projects under construction only based on original plans passed before the abolishment of the ECH scheme.)
<i>Capped-price housing (CPH)</i>	Low-to-middle-income and middle-income households	Local residence permit (<i>hukou</i>); income threshold; without owned-home	The price of a unit is usually capped at around 70% of market level and the buyers generally need to hold it for a minimum of 5 years before it can be sold.	As above.

<i>Shared ownership housing (SOH)</i>	Low- to middle-income and middle-income households	Local residence permit (<i>hukou</i>); income threshold; without owned-home	It can be recognised as the replacement of ECH and CPH. Buyers can have at least 50% ownership of the housing unit and the share of ownership can be traded in the market after holding the property for a minimum of 5 years.	Started in some pilot cities and has now become an important affordable housing form in major cities.
<i>Shantytown redevelopment housing (SRH)</i>	Households relocated due to urban revitalisation and construction projects	Owners of expropriated homes	As a compensation for displacement, SRH is supplied to relocated households who use the market value of demolished housing to exchange for SRH.	SRH is the major focus of the current affordable housing policy in China.

Source: Shi et al., 2016; Researcher's own summary based on various official documents, 2017.

Among the schemes above, ECH was previously targeted to improve homeownership for low-income urban households, and involved the land being freely allocated to developers. Subsequently, the sale price of ECH was restricted to the cost of construction plus a small profit margin, normally 3% (Chen et al., 2013). For CPH, developers obtained land through

the competitive bidding process, and sale prices were set at around 70% of market price to sell to middle-income urban households to promote homeownership (ibid.). For both ECH and CPH, strict resale restrictions clearly defined that buyers had to hold their properties for a specified period before they could trade their housing in the open market, normally five years (ibid.).

Now, ECH and CPH will gradually be eliminated from the affordable housing sector. Their roles were debatable, and mixed views towards ECH in particular have been heavily documented. This thesis does not aim to discuss the historical roles of ECH and CPH, but relevant information will be addressed later. Moreover, the withdrawal of ECH and CPH schemes suggests that the target of housing provision in China has now undergone a directional change; this is also discussed later on.

Regarding SOH, the government obtains a certain proportion of ownership (e.g. 30% or 50%) through land transfer (Ren, 2012). That is, land is no longer free to allocate to the use of building affordable housing, but instead its value is estimated and included in the price of the housing. The value of the land component is then converted into the part of the property retained and owned by the government, while the building is the component sold to the buyer. So far, SOH still accounts for a small proportion of the affordable housing system of China, but it is expected that it will become an important housing form in the near future (Wang, 2017). More significantly, Ren (2012) suggests that SOH has provided the government with an exit mechanism, as its share of ownership could be sold to obtain more capital and thus to fund additional new builds without affecting buyers' rights.

Furthermore, there are several debates in China regarding whether SRH should be regarded as affordable housing (Chen et al., 2013). This consideration is based on the fact that buyers of SRH are not restricted to low-income households, but can include relocated households as well. A relocated household is normally compensated by a lump-sum fund that is equivalent to the market value of its old housing, or provided with SRH directly as an exchange (ibid.). Thus, affordability is often not a problem for those relocated households. However, according to government plans, SRH is currently the major focus in the Chinese affordable housing system. This housing is also allocated by the government rather than the market, and thus arguably qualifies as affordable housing in the Chinese context (ibid.).

- **Affordable Housing Programmes for Rent**

As their names suggest, PRH and CRH are for renting only; see Table 3.3 below for details.

Table 3.3: Types of Affordable Housing in Post-Reform China (For Rent)

Type	Target Group	Eligibility Requirement	Description	Latest Development
<i>Cheap rental housing (CRH)</i>	Low-income households	Local residence permit (<i>hukou</i>); income and asset threshold; living space threshold	Unit size is no more than 50m ² . Rent is very low, 20% of market price as the ceiling price.	Programme has been terminated; existing housing stock has been merged with PRH.
<i>Public rental housing (PRH)</i>	All households	No local residence requirement; no income, asset or space threshold	Unit size is limited to 40-80m ² . Rent can vary, but the highest level is limited to 70% of market price.	PRH now is the dominant form in the affordable housing system, and is the only affordable rental housing now being developed in China.

Source: Shi et al., 2016; Researcher's own summary based on various official documents, 2017.

From the table above, it can be seen that at present, PRH is the only type of affordable housing accessible to all households, including migrants without local *hukou*. It should be noted that before 2008, the stock of lease-based affordable housing was highly limited in China, between 100,000 and 200,000 units (Ma, 2015). However, the housing stock of rented affordable units increased significantly, hitting 14.25 million at the end of 2013 (ibid.). Ma (2015) states that about 10 million units of lease-based affordable housing were built between 2011 and 2013, although according to the *National 12th Five-Year Plan*, a total of 15.5 million such units were supposed to be built over this period. Assuming that this total was delivered, the housing stock of public rental units, as at 2016, is estimated to be around 20 million.

3.2.3 Evaluation and Outlook

After more than 15 years' exploration and development, the affordable housing sector has become a vital part of the housing market in China. The affordable housing stock is now enormous. Specific data regarding each housing programme is difficult to find, but general information is available. This is summarised in the table below.

Table 3.4: Affordable Housing Stock in China, 2016

Affordable Housing Programmes	Estimated Housing Stock Quantity (in Millions)	Notes
<i>For Sale</i>		
<u>ECH</u>, <u>CPH</u>, SOH	48.0	<ul style="list-style-type: none">• ECH accounts for the vast majority among those programmes.• Programmes underlined have been withdrawn.
SRH	27.7	
<i>For Rent</i>		
PRH	20.0	

Source: Ma, 2015; Researcher's own summary based on various official documents, 2017.

According to the affordable housing plan set for the 12th five-year plan period, more than 20% of the urban population is now housed by the affordable housing sector. This represents a substantial amount of the housing stock. It is also worth noting that ECH has become the synonym of affordable housing in the country; it represents the oldest form of housing and makes up the largest proportion of the housing stock. There have been mixed reactions to the plans to withdraw it. On the one hand, Mao (2008) deems that the ECH scheme failed. It was originally designed as a mechanism to protect the interests of the poor but, in fact, the middle class and the rich were also able to take advantage of the scheme, and it became a source of social injustice. On the other hand, Hou (2016) argues that the ECH programme did make significant contributions to the affordable housing sector in China, especially since it increased the homeownership rate for urban citizens in the early market period after the

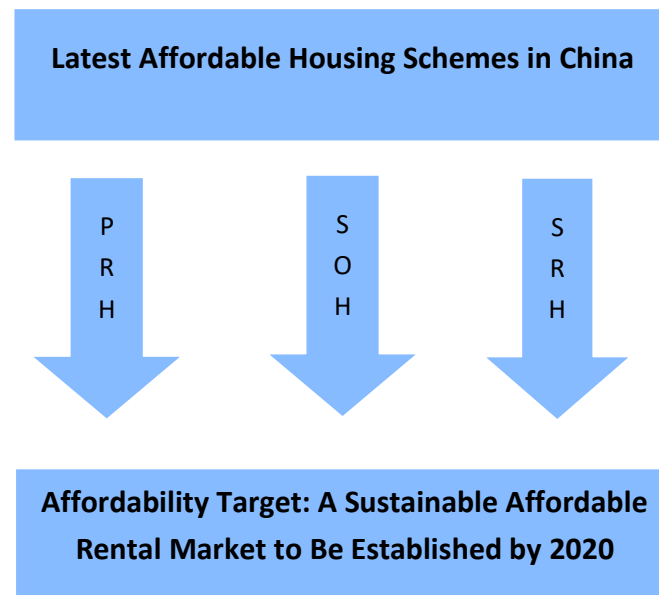
housing reform; certain groups of people, such as college graduates, were the main beneficiary. Yet, shortcomings were apparent in later years. For instance, the unit size became larger and larger, the price grew to a level that many low-income consumers could not afford, and the buyer selection process became out of control (ibid.).

The end of ECH building and its analogous form of CPH suggest that the target of housing provision in China has undergone a great and directional change. Affordability is no longer about promoting homeownership for low- and low-to-middle-income households, but now focuses on the creation of an affordable rental market for all households in need. The Chinese government's affordable housing target is now 'everyone has a house to live in' (人人有房住), rather than 'everyone has a house' (人人有住房) (www.china.org.cn, 2016). In an attempt to achieve this target, PRH will inevitably replace ECH as the main housing type in the affordable housing system.

In addition, as described above, SRH has now become a significant part of the affordable housing sector. However, its primary function is not to tackle the affordability problem but to protect the living rights of relocated residents. Therefore, this thesis does not discuss SRH in detail.

In summary, it is expected that by 2020, the affordable housing sector in China will consist of three main schemes, namely PRH, SOH, and SRH. Based on the central government's plan, the newest affordability target is to establish an 'affordable, fair, and sustainable' public rental market by 2020 (State Council, 2016) (refer to Figure 3.2 below). It should be noted that this policy change partly explains the government's strong drive towards creating affordable housing REITs. More details are addressed later in this thesis.

Figure 3.2: Latest Affordable Housing Schemes and Target in China



Source: Researcher's own summary, 2016.

3.3 How Affordable Housing Is Built and Financed in China

It is commonly knowledge that the affordable housing programmes mentioned above are provided by the government. But, the provision of affordable housing in China actually contains several specific stakeholders, including the central government, local governments, and developers, and there are even some contradictions among them regarding the affordability goal. Hence, this section first describes the inter-relationships between these stakeholders, and then examines how affordable housing is financed and built in detail. The purpose is to build a clear understanding of how the affordable housing system is run in the country.

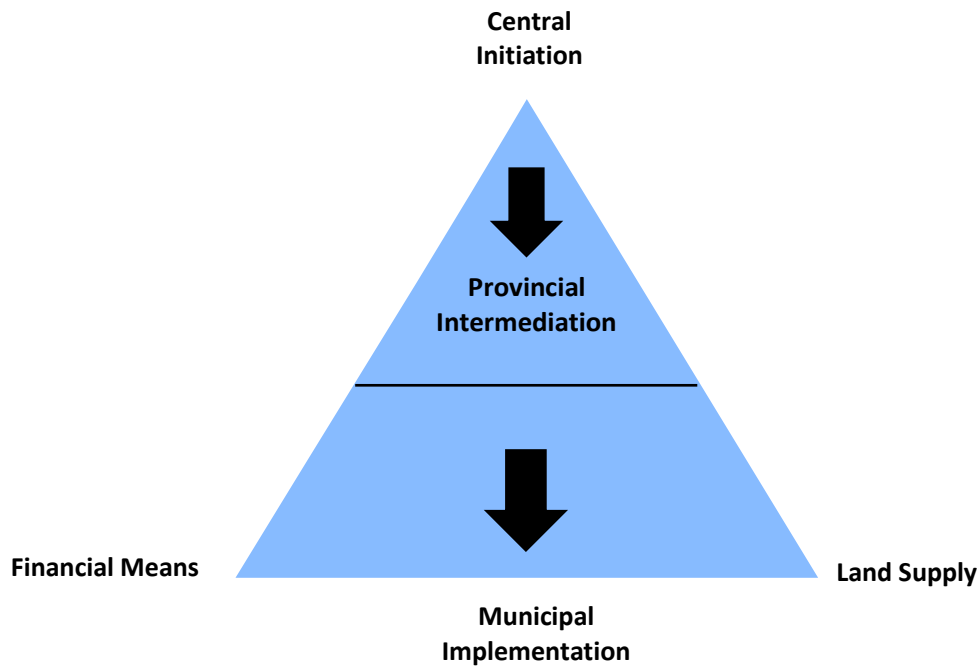
3.3.1 Game Theory Relations in the Affordable Housing System

- **Inter-Governmental Structure of Affordable Housing**

Although the political structure in China is known as being highly centralised, it in fact mixes elements of both centralisation and decentralisation (Xu, 2011). The Chinese government is composed of five levels, central, provincial, prefectural, county, and township; and the latter four layers are considered as local governments. The role of local governments has become increasingly significant to the affordable housing sector, as they shoulder most of the costs in building affordable housing units. However, Kiser and Ostrom (2000) propose a three-level institutional approach that seems to be more suitable to explain China's inter-governmental structure and especially its effects on the affordable housing sector.

On the basis of the three-level institutional approach, the highest level of government takes the role of making constitutional decisions, and the subsequent policies and targets are published in the form of national affordable housing plans. The second level of government creates specific administrative procedures and regulatory frameworks based on these national plans. In China, provincial governments undertake this role and act as an intermediation platform between the central and municipal governments. The third level of government implements these plans and frameworks. Prefectural, also known as municipal, governments in China are responsible for putting into practice the plans and policies made by the first (central) and second (provincial) level of governments. It can be stated that the day-to-day implementation on this level is the key to the entire affordable housing system in China, since it impacts the effectiveness and efficiency of the realisation of the whole plan, and very importantly, land and most funding required for affordable housing projects need to be supplied by municipal governments; see the figure below.

Figure 3.3: Governmental Structure of Affordable Housing in China



The interesting issue here is that this inter-governmental structure challenges the affordable housing policies set by the central government. Zou (2014) suggests that the central government promotes the affordable housing plan with the primary purpose of improving social and political stability,¹⁷ but on the other hand, local governments including provincial and municipal governments do not have sufficient financial capacities and incentives to achieve this goal. This contradiction became obvious during China's 12th five-year period, when 36 million units of affordable housing had to be built by the end of 2015 – a target set by the central government (ibid.). In April 2012, the State Council issued a document, *The Notice of Establishing the Statistical Institution of the Affordable Housing Program*, which clearly stipulated that local governments had to report accurate data regarding new housing builds and finishes, the flow of funds, and the supply of land, with no concessions (State Council, 2012). However, Zou (2014) notes that even this kind of strict supervision did not discourage the distrust in China's inter-governmental structure towards the affordable housing issue.

¹⁷ In September 2011, the State Council issued a document, *The Instructions on the Construction and Management of Affordable Housing Projects*, that clearly defined the primary purpose of building affordable housing as improving and guaranteeing people's livelihood.

Scholars have investigated the reasons underlying this contradiction. Y. Huang (2012) suggests that although the central government expects local governments to allocate sufficient land to housing development, especially for affordable housing projects, local governments tend to control and limit land supply every year to push up land prices as it is sold through a competitive bidding process. Local officials prefer to lease land to commodity housing projects than to affordable housing developments, because commodity housing developers pay huge fees to lease the land, whereas land supplied to affordability projects would be free or at significantly discounted prices (Zou, 2014). Hence, local officials have become dependent on the income they can generate from land leasing fees, as this is a highly comfortable financing channel for them. They use it to supplement their budgets, which they spend on infrastructure, such as building new roads, bridges, and subway systems. They prefer to spend this money on infrastructure than affordable housing, as infrastructure stimulates further local economic growth, which is the main criteria by which these officials are judged (ibid.). In contrast, affordable housing projects do not have the same direct economic benefits, and instead consume local government budgets (ibid.).

To summarise, under China's current political system, local governments are supervised by higher-level governments instead of being accountable to local citizens (ibid.). The success of local officials and their opportunities for promotion are heavily judged and depend on the rising GDP in their local jurisdiction, a criterion used to measure the growth in the local economy. These two points together give rise to political tensions between the different levels of government, causing local governments to undermine the central government's affordable housing plans. Their attitudes towards affordable housing are fundamentally different: the central government principally addresses the importance of social and political stability, whereas local governments mainly focus on economic benefits. If the importance placed on building affordable housing cannot be brought in line with that of economic growth to local officials, then local governments will understandably remain unmotivated to build affordable units at the levels prescribed in national plans.

- **Local Governments and Developers**

In China, developers are the key agents involved in the development and construction of affordable housing. In practice, affordable housing projects are given to developers who compete through a bidding or negotiation process. You et al. (2011) state that the overall

development approach and process of affordable housing is no different to commodity housing developments, but municipal governments normally participate a great deal in the whole process, and there is thus little freedom left for developers. In completing an affordable housing project, the role of the local government includes site selection; project planning, including designing the unit size, type, plot ratio, and other details; choosing developers; regulating building standards; and selecting qualified tenants or buyers (ibid.). In contrast, the developer can only complete the building according to the instructions given by local governments (ibid.). Once a project is completed, affordable units are handed over to the local government, who pays the developer based on the overall project costs, management fees, and the officially set profit rate.

Developers building commodity housing projects achieve good returns that depend on house prices at the time of sale. In contrast, the profit margins on affordable homeownership developments are capped at 3-4% for ECH. When building affordable housing units for rent, there is no profit margin for developers. Han and Chen (2012) state that the average profit ratio for developers in China between 2010 and 2012 was 20.46%. However, the general profit margin for developers has recently decreased as the government strictly regulates the real estate market. Nevertheless, according to industry delegates, a profit rate of around 10% on average can still be achieved by most developers today. Thus, undertaking affordable housing projects clearly represents a huge opportunity cost for developers, and that is why many have no interest in building affordable housing for the government. Ge et al. (2014) suggest that the only benefits to constructing affordable housing units are to improve the development company's image and to maintain good relationships with the government.

- **Low-Income Group**

Members of the low-income group, namely affordable housing purchasers and tenants, are also important stakeholders in the whole system. They are the end users of the housing, and the purpose of building such affordable units is to protect their basic living rights. However, this group has little bargaining power in the affordable housing system. This is because, as mentioned above, the government is the decision-maker that controls every detail, from where to build affordable units and how many to build, to how much the rent is and, finally, how to design the distribution mechanism. In contrast, the low-income group can only take the role of passive acceptance (Ge et al., 2014). Compared to the developers, the low-income

group is in a more vulnerable position: members cannot influence any part of the affordable housing project, including site selection, construction, and eventually distribution. As a result, to describe the inter-relations of different stakeholders in the affordable housing system with the purpose of understanding who is building and financing affordable housing in the country, this thesis does not address the low-income group, which consists of the end users of this housing. Instead, the thesis focuses on the influencers in this system in terms of building and financing capacity.

The different interests of major stakeholders who influence the building and financing of affordable housing projects are summarised and described in Table 3.5.

Table 3.5: Different Interests of Stakeholders of Affordable Housing in China

Stakeholders	Major Considerations
<i>Central government</i>	<ul style="list-style-type: none"> • Social and political stability • Economic efficiency • Healthy and sustainable real estate market • Social justice • Good image of government
<i>Local governments</i>	<ul style="list-style-type: none"> • Local economic growth • Low government spending • High returns • Implementation of central directives
<i>Developers</i>	<ul style="list-style-type: none"> • Profit maximisation; • Good corporate image and reputation • Good relationship with government

Source: Ge et al., 2014; Researcher's own summary, 2016.

The table above shows that the interests of all stakeholders are different. They share no common interest. Hence, since all stakeholders want to realise their own interests, conflicts among them are unavoidable. In contrast, many scholars, such as Hu (2013), Tan and Lou (2012), and Yang (2015), suggest that *game theory* could be applied to describe their

relations. Turocy and Von Stengel (2001) explain that game theory is the study of conflict and cooperation, and it conceptualises interdependent stakeholders in an interactive situation. Marsh (1992) states that a complete game must contain three elements: players, strategies, and consequences. Players in a game are stakeholders, while strategies are each player's plan and practice in response to other players' activities (ibid.). For example, the strategy could be the countermeasure that the local governments use to deal with the central government's plans and policies. Consequences are the specific results of gain and loss for each player in a game, and the final result of the whole game (ibid.). Based on this explanation, the final result of the game desired by the central government would be for the affordable housing target to be achieved in full, but the outcome is dependent on the players and their strategies.

Specifically, You et al. (2011) argue that developers lack a voice and bargaining power in terms of building affordable housing, and thus the *game* is normally played between the central and local governments. Yang (2015) further indicates that the latter relationship is a non-cooperative game towards building affordable housing projects. As mentioned previously, the underlying reason for this contradiction is the difference in their primary goal and expectations of achievement: the central government focuses on social justice and stability, while local governments have the primary benchmark of cost and profit (ibid.). Based on this, some local governments even believe that the development of commodity real estate would be hindered by the increased supply of affordable housing, and that local economic interests would be damaged (ibid.).

The game between the central and local government was evident during the 12th five-year plan period, when local governments started to employ *strategies* to manage the difficulties associated with building affordable housing on a massive scale as dictated by the upper government. Tan and Lou (2012) and Yang (2015) provide the following typical examples of this:

- Local governments deliberately slowed down the construction speed of affordable housing projects;
- Local governments reduced the construction costs of affordable units by a wide margin;
- They selectively implemented the affordable housing policy, for example building SRH as planned but not building PRH on schedule;

- Some local governments passed off commodity housing or self-built housing off as affordable units and reported as such to the central government; and
- Some local governments even used affordable housing funds provided by the upper government to build roads and other infrastructure.

Understanding the major stakeholders and their inter-relationships may be helpful in better comprehending local governments' situation in the building of affordable housing units and the heavy financial burdens they face.

3.3.2 Financing Sources for the Development of Affordable Housing

As previously discussed, local governments are the executors of affordable housing policies and plans set by the central government. However, there is growing evidence that these governments faced serious funding problems in completing the national affordable housing plan for the 12th five-year plan period, although official news suggested that this was not the case. To understand the contradiction between published official information and actual results, as was proposed at the beginning of the thesis, it is necessary to investigate the current funding sources for local governments to finance affordable housing projects. From existing literature, no specific financial data such as typical shares each source contributed to different kinds of housing schemes could be found. However, the major financing sources for the affordable housing sector as a whole are the following.

● **Financial Support from the Central Government**

Specifically, during the 12th five-year plan period, namely between 2011 and 2015, the central government of China provided local governments with RMB 171.3 billion of financial aid to support the affordable housing sector in 2011, 233.2 billion in 2012, and 200 billion in 2013 (Li, 2012; Shi, 2014).) The amount of support was 222.2 billion and 254.8 billion in the years 2014 and 2015, respectively (MOF, 2015). Starting in 2014, the major focus of financial support from the central government was on SRH and PRH programmes (ibid.).

● **10% of Local Government's Land-Transferring Net Income**

In November 2007, the Ministry of Finance (MOF) of China announced the policy that 10% of land-transferring net income must contribute to and support the construction of CRH as of 1 January, 2008 (Wang and Zhang, 2007). Starting from 2010, this was extended to include

PRH, so PRH could share the 10% of land-transferring net income with low-rent housing for new builds (Wu, 2010). This income now entirely supports the PRH programme. Land finance in China has been a significant source of income for local governments since the housing reform, and the latest data shows that the total land lease income in 2015 was RMB 3.37 trillion (MOF, 2016). Therefore, 10% of this represents a very large number: 337 billion.

● **Commercial and Policy Bank Loans**

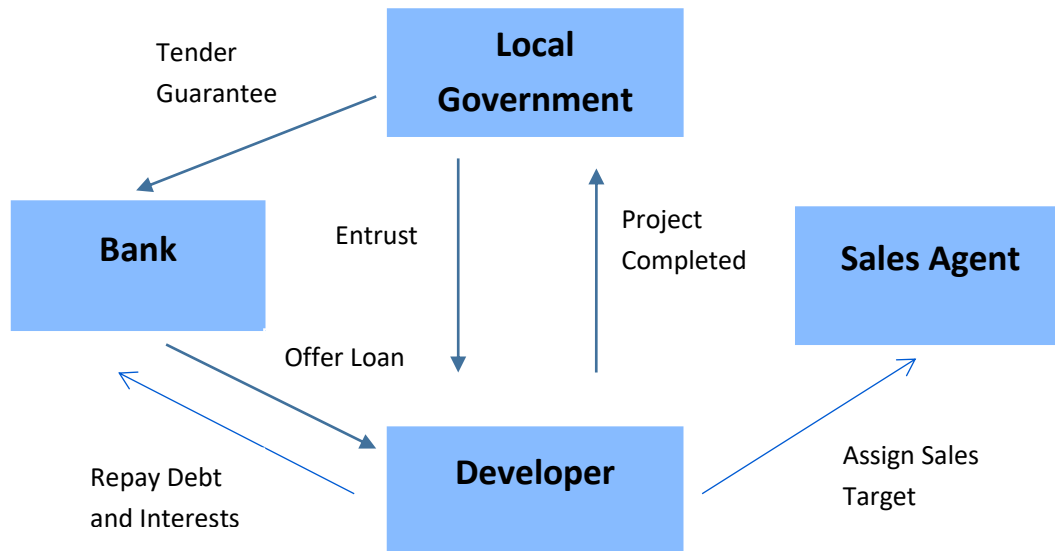
Available data indicates that from 2011 to 2013, loans and bonds issued by the Industrial and Commercial Bank of China (ICBC) to support the construction of affordable housing totalled around RMB 75 billion (Yang, 2014). In addition, until the end of September 2013, the balance of loans that the China Construction Bank (CCB) issued to the affordable housing sector was 79.8 billion (ibid.). Comprehensively, Kuang (2011) estimates that commercial loans for affordable housing totalled 65.1 billion at the national level in the first quarter of 2011. Based on this information, the total amount of commercial loans issued to the affordable housing sector may be as much as 260 billion per year. However, information regarding policy bank loans cannot be obtained in the available literature.

Moreover, this thesis outlines how the three aforementioned major funding sources could be used for the two different types of affordable housing programmes described above, namely units for sale and for rent. However, concrete data on how much from each source is consumed for each programme is still not accessible.

◆ **Financing Source for Affordable Housing Units for Sale**

For affordable housing units for sale, including ECH, CPH, and SOH, the largest source of funding is bank loans; central government financial support and land revenue are less likely to be placed on the construction of these units (Xing, 2008). The reason for this is that those affordable units can be sold to repay the debt, and thus government financial support tends not to be highly necessary. Unbank (2016) shows a typical model of how an ECH project is financed and operated in Beijing, including which four stakeholders are involved: local government, the developer, the bank, and the sales agent. Refer to the figure below.

Figure 3.4: Financing Model for ECH Projects



Source: Unbank, 2016; modified by the researcher, 2018.

From the figure above, it is clear that in an ECH project, the developer acts as an agent-construction organisation to build affordable units for the local government. Regarding its financing source, the bank provides the developer with loans to complete the housing project that was planned and directed by the local government. Because the units can be sold, the developer is capable of repaying the debt and interests through sales revenue, and in fact a certain sum of profits can also be expected (normally 3%). In this model, from a financial perspective, the only thing the local government does is provide an endorsement to the developer for him or her to obtain a loan from the bank. The financing models are the same for other forms of housing for sale, such as CPH and SOH. In this case, Chen (2010) indicates that, in fact, the net income from ECH sales and other noninstitutionalised entities, such as developers' own capital reserve¹⁸, are other important funding sources of local governments.

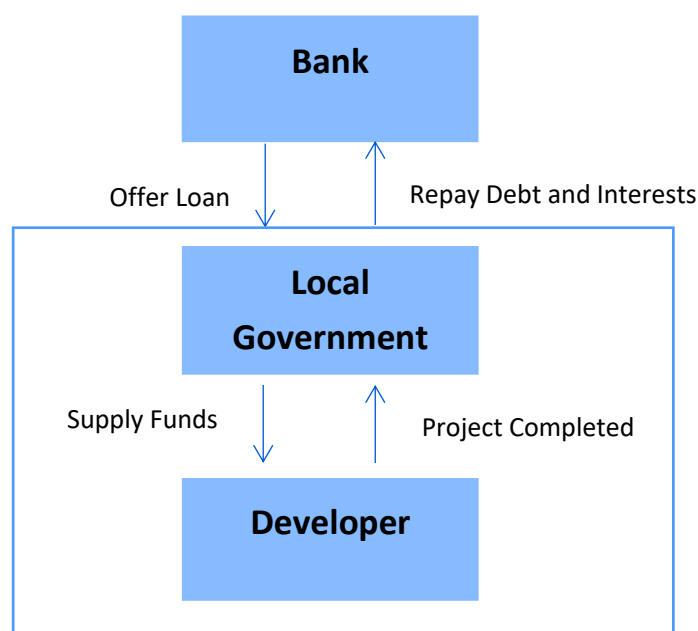
◆ Financing Source for Affordable Housing Units for Rent

For affordable housing units for rent, such as CRH and PRH, it is a different story. Government financial support is substantial and could even be the only financing source for such projects in many cases. According to Gao and Zhou (2016), the financing model for a

¹⁸ Developers' capital reserve may include, for example, a land deposit required for bidding on the land and a housing quality deposit.

PRH project can be described using the following figure. Two or three parties may be involved.

Figure 3.5: Financing Model for PRH Projects



Source: Gao and Zhou, 2016

From the figure above, it can be seen that to complete a PRH project, the local government simply provides the designated developer with enough funding to construct the units. Then, once the project is done, the PRH units are handed over to the government. In theory, the sources of funding should be the financial support from the central government and land revenue, as mentioned above. However, many local governments face the problem of funding shortages despite enjoying the above financing channels, so they have to borrow from banks to fulfil their affordable housing targets (Guo, 2015). At this time, the two stakeholders of government and developer extend to three as the bank is involved. Normally, the bank offers loans to the local government to complete affordable housing projects, but all the financial responsibilities are then shouldered by the government too.

However, whether units are for sale or rent, as mentioned previously, local governments are reluctant to directly allocate desirable land to affordable housing projects, since land is their primary revenue source and it would have to be provided freely or at hugely discounted prices for such programmes. This has encouraged them to develop innovative financing

mechanisms through land and financial means, in addition to the traditional channels mentioned above, especially for PRH programmes.

● Other Innovative Financing Sources

Specifically, some local governments have asked developers to share the land provision burden. Zou (2014) states that in Beijing, the local government has set an affordable housing quota for commodity housing projects. That is, a price cap is set on the land before developers bid on it, and if the bidding price reaches the price cap, bidders stop bidding on price and instead bid on how much affordable housing they can develop on that piece of land (ibid.). For example, a developer called Beijing Huipeng Real Estate Ltd won a piece of land for residential development in Mentougou District in June 2012 with a cap price of RMB 278.5 million, but was required to develop 9,650m² of PRH units by floor area (Xinhua Net, 2012a). This innovative approach has helped local governments in several cities provide land for affordable housing, and in the meantime ease their fiscal burden (Zou, 2014). For instance, Nanjing started to use this method in the land bidding process in August 2017 (Xinhua Net, 2017). Moreover, this approach can also help to mix affordable housing with commodity housing to improve residential diversity and decrease the potential for poverty clusters or even the forming of slums, which is a goal of public housing provision in Western countries (Schwartz, 2010; Zou, 2014).

In addition, some local governments have taken advantage of rural land to construct affordable housing units, as rural land in China is collective-owned, which is much cheaper than the state-owned urban land (Zou, 2014). However, it should be noted that in theory, collective-owned land cannot be leased for housing development. This is clearly defined by China's land law. However, much housing has in fact been developed on rural land for sale at low prices. This kind of housing is illegal and carries no property rights; it is called 'property-rights-limited housing' (in Chinese: *xiao chan quan fang*) (ibid.). Many restrictions have been imposed on property-rights-limited housing; for example, its residents cannot use the property as collateral for mortgages and cannot enjoy certain public resources financed by local governments, such as enrolment in a nearby school (ibid.). Nonetheless, during the 12th five-year plan period, the central government recommended that local governments develop PRH units on the collective-owned rural land, even though this method posed the potential risk that existing residents living in the property-rights-limited units would claim that their

housing was legal, which would conflict with existing law (ibid.). However, Zou (2014) states that to date, the central government does not have the intention to legalise this housing. Instead, this government has only allowed several cities with high house prices, including Beijing and Shanghai, to use collective-owned rural land to develop PRH units as pilots, with the purpose of controlling the potential risk stated above (The First Financial Daily, 2012).

Furthermore, to ease the financial burden, the central government has used some innovative methods to expand and diversify the funding sources to construct affordable housing, including the Housing Provident Fund (HPF), bonds, trust funds, and pension funds (Zou, 2014). Specifically, Yeung and Howes (2006) suggest that the HPF scheme was learned and copied from Singapore's Central Provident Fund (CPF) scheme, whereby it is mandatory for both employers and employees to contribute a portion of employees' wages to their personal accounts. For the use of the scheme, the individuals who participate in the HPF scheme can withdraw the funds and apply for HPF mortgages for purchasing, constructing, renting, or renovating housing (Zou, 2014). However, research shows that a large amount of idle capital is accumulated in HPF, as less than 20% of participants in fact use HPF mortgages for housing consumption (Chen et al., 2010). Therefore, in October 2009 the central government announced that starting in 2010, local governments could use up to 50% of HPF balances to support the affordable housing sectors in 28 cities, including Beijing, Tianjin, Chongqing, and Hangzhou¹⁹ (Xinhua Net, 2013). Zou (2014) commented that this innovative method would not only help to ease the financial burden of the affordable housing sector, but would also generate returns from the idle HPF capital. However, this scheme was stopped when the MOHURD stipulated that affordable housing projects could no longer receive financial support from the HPF starting on 1 January, 2016 (L. Li, 2016). Between 2009 and 2015, the total amount of HPF that contributed to the affordable housing sector was RMB 110.7 billion (ibid.). Besides HPF funding, some local governments have mandated that a portion of the revenue from local bond issues must be used to support the construction of affordable housing projects (Zou, 2014). For example, the Shenzhen municipal government issued local bonds to raise RMB 4.2 billion in 2014, of which 2.89 billion was supposed to be used in the affordable housing sector (sznews.com, 2014). Moreover, the central government has also clearly stated that the property tax revenue of cities that have enacted property tax schemes,

¹⁹ Usually, local governments use land as collateral when they borrow from HPF.

namely Shanghai and Chongqing, must be used to support the affordable housing sector as the first priority (Zou, 2014).

In addition, the government has also called for and encouraged the private sector to participate in and fund affordable housing projects through direct investment, indirect investment, participation, and agent-construction, and certainly through the proposed investment vehicle of REITs. Specifically, local governments have encouraged private developers to participate and construct affordable housing units, as professional developers have rich experience in controlling construction cost and enhancing construction quality (ibid.). For instance, Zou (2014) states that Vanke, a leading real estate developer in China, has so far participated in developing more than 3 million m² of affordable housing by floor area. As mentioned in Section 3.3.1, the game theory applies to describe the relationship between developers and local governments in China. Vanke and many other developers have made substantial profits due to the housing market boom over the last decade. Hence, participating in and supporting the affordable housing sector strengthens their relationships with local governments and government agencies since this activity demonstrates their social responsibility, which is important for developers in China (ibid.). On the other hand, as previously stated, it must be noted that most developers lack economic incentives, as the return on invested capital in affordable housing projects is low at around 3%. Especially for PRH, developers are unmotivated to become involved, as the PRH programme cannot be sold to homeowners and that delays developers in recovering their initial investments (ibid.). For example, Vanke developed a PRH project called Wanhui Lou in Guangzhou in 2008, with a total cost of RMB 46.24 million, including the land cost of RMB 11.66 million; however, the annual profit, namely the rent revenue minus the maintenance and operational fees, was only RMB 50,000 (ibid.). Vanke has admitted that it has not found a way to generate profits from its investment in the affordable housing sector, especially PRH programmes, and to recover the cost of the Wanhui Lou project, the developer used money from its own Enterprise and Citizen Social Responsibility Foundation (Xinhua Net, 2012b). Such a practice discourages developers, especially small ones, from participating.

In general, based on existing literature, the funding required for China's affordable housing sector is substantial (see: Ge and Zhang, 2015; Shi, 2014; Zou, 2014). The government has employed many methods to support and finance the construction of affordable housing units,

including traditional means and innovation methods in terms of land, finance, and taxation. It should be noted that the government has also encouraged the private sector to become involved in the affordable housing business. However, for the PRH in particular, no profits can be generated, and this discourages the private sector from participating. Nevertheless, more details are required to understand the issue of affordable housing finance in China. This problem is studied in Chapter 5 in detail.

3.4 How Affordable Housing Is Financed and Built in the Most Developed Economies

It is believed that affordable housing is a universal topic, and the lack of financial resources could therefore be a common issue across countries. Thus, it could be highly useful to know how other countries finance affordable housing. The US, the UK, and Australia have been chosen for a comparative analysis in this thesis, since these countries are some of the most advanced economies in the world and present mature experience from different areas, namely North America, Europe, and the Asia Pacific region. Therefore, their practices of housing provision could be recognised as global and valuable references for China. Furthermore, this comparative study could be helpful to understand the Chinese government's train of thought regarding housing provision. All three countries have market-oriented housing sectors, but with certain degrees of government interventions and different affordable housing finance mechanisms in place.

3.4.1 The United States

The real estate market in the US is deemed to be less equal than that in many other countries. Employing the median multiple, the gap in the US major housing market is demonstrated by an absolute difference of 7.3, where the ratio is 2.5 in the most affordable market, but 9.8 in the least affordable one (Cox and Pavletich, 2017). The gap is 5.1 in the UK (between 3.8 and 8.9), and 6.1 in Australia (between 6.1 and 12.2) (ibid.). SustainLane (2009) used average housing prices divided by average incomes based on US Census Bureau data, and found that many American major cities have certain affordability issues, of which the housing markets in San Jose, Honolulu, Miami, Boston, San Diego, New York, Oakland, Long Beach, Los Angeles, and San Francisco are the most unaffordable.

To mitigate housing affordability issue, government-supported financial aid for affordable home rental and purchase has been a long tradition in the US (Hawtrey, 2009). In 2008, about 7 million low-income households benefited from federal housing subsidies, and about 155 million house owners enjoyed mortgage interest deductions on federal income taxes (Schwartz, 2010). Correspondingly, in the same year the federal expenditures for direct housing assistance were approximately \$40.2 billion, and mortgage interest deductions and other housing-related tax benefits were greater than \$171 billion (ibid.).

Schwartz (2010) indicates that, in general, the US federal government provides subsidies for low-income households in four ways:

- Provides tax incentives including mortgage interest deduction, as mentioned above, the deductibility of property tax payments, reduced taxes on the sales of residential properties, and low-interest mortgages for first-time homebuyers financed by tax-exempt bonds;
- Supports the construction and operation of specific housing projects, such as affordable housing projects;
- Helps low-income households rent in the private rental sector; and
- Provides states and localities with financial support to build their own housing programmes.

Apart from the tax expenditures mentioned above, the first approach is a supply-side subsidy, which includes public housing and several other housing programmes. However, Schwartz (2010) indicates that although the federal government spends billions of dollars each year on supply-side subsidies, nearly all of this money goes to preserving and replacing housing built before the mid-1980s, and almost no new housing has been built with these subsidies in the last two decades.

The second approach to help low-income households rent in the private rental sector was initially introduced in the mid-1970s, and quickly became the dominant form of government low-income housing assistance in the US (ibid.). In this approach, households are provided with vouchers to cover their housing expenses subject to the amount of the difference between 30% of their income and a maximum allowed value (Katz and Turner, 2007). The

US Department of Housing and Urban Development (HUD) operates the voucher programmes for tenants who need to rent privately owned housing (Goering et al., 1995). The eligibility for receiving a voucher is income-tested, and federal regulations administer how rent is determined in these programmes (Hawtrey, 2009). In general, a state public housing authority (PHA) pays the landlord the difference between 30% of the household income and the PHA-determined payment standard, which is approximately 80-100% of the fair market rent (FMR) in the US (Hawtrey, 2009; Sard, 2001). A household can choose a unit with higher rent than the FMR and pay the difference, or a unit with lower rent than the FMR and thus keep the difference in hand (Hawtrey, 2009).

The third approach consists of federal block grants provided to state and local governments. Landis and McClure (2010) and Schwartz (2010) suggest that state and local governments normally receive block grants on a regular basis, and have a great deal of freedom in how to use them, although these programmes are still subject to restrictions imposed by the federal government regarding how the funds can be spent.

In total, around 7.1 million US households receive some form of federal subsidy (Schwartz, 2010). Among them, about 2.2 million receive rental vouchers, representing the single largest category. Privately owned housing with federal project-based subsidies accounts for the second largest category with 1.8 million units, and public housing forms the third largest category with approximately 1.2 million units (*ibid.*). It is notable that most of the remaining 1.9 million units of subsidised rental housing are funded through the Low-Income Housing Tax Credit (LIHTC) programme (*ibid.*).

In addition to directly providing tax incentives to home renters and purchasers, federal government also introduced the LIHTC programme, which is the dominant model used to provide the private market with an incentive to invest in affordable rental housing. There are two types of LIHTCs available depending on the nature of the construction project. The 9% credit is generally reserved for new construction, while the 4% credit is typically used for rehabilitation projects (Keightley, 2018). Each year, for 10 years, a tax credit equal to roughly 4% or 9% of a project's eligible basis or namely cost of construction is claimed (*ibid.*). According to Keightley (2018), a simplified example may help in understanding how the LIHTC program is intended to encourage affordable housing development:

- *Consider a new affordable housing apartment complex with a qualified basis of \$1 million. Since the project involves new construction it will qualify for the 9% credit and generate a stream of tax credits equal to \$90,000 ($9\% \times \1 million) per year for 10 years, or \$900,000 in total. Under the appropriate interest rate the present value of the \$900,000 stream of tax credits should be equal to \$700,000, resulting in a 70% subsidy. The subsidy is intended to incentivize the development of affordable housing that otherwise may not be financially feasible or attractive relative to alternative investments.*
- *The situation would be similar if the project involved rehabilitated construction except the developer would be entitled to a stream of tax credits equal to \$40,000 ($4\% \times \1 million) per year for 10 years, or \$400,000 in total. The present value of the \$400,000 stream of tax credits should be equal to \$300,000, resulting in a 30% subsidy.*

Hawtrey (2009), O'Regan, and Horn (2013) explain that housing tax credits are awarded to qualified projects, and the developers of these qualified projects can then sell these credits to investors to raise funds to cover the development costs of their projects. The capital receipts greatly reduce the debt that developers would otherwise have to borrow from elsewhere, such as banks. Because the debt is lower and decreases the total development cost of the project, a tax credit property can offer cheaper, more affordable rent to households.

Certainly, affordable housing policy in the US is not limited to government subsidies and tax incentives. As Schwartz (2010) suggests, it also involves affecting how housing is developed, rented, and sold. In other words, the distribution process is highly important too. Nevertheless, it can be understood that the US government mainly uses two methods to financially support the affordable housing sector now, housing-related tax expenditures and direct expenditures for housing assistance, of which the former is a more dominant approach in terms of the public funding spent. However, this current financing model has followed the path of evolution for decades, and three phases can be seen. Before the 1970s, the US government bore all the financial responsibilities of constructing affordable housing units to house the low-income group. This is exactly what is being done by the Chinese government now (Cao, 2018). However, starting in the mid-1970s, the subsidies designed to help low-income households rent existing properties from the private market, such as the housing voucher, gradually became the major form of government housing assistance, as mentioned previously.

Then, in the mid-1980s, the US government decided to use limited government spending as tax incentives to attract more private capital to invest in the affordable housing sector, for example through the LIHTC programme (Schwartz, 2010; Wei et al., 2013).

All in all, it can be concluded that affordable housing finance in the US comprises government project-based subsidies, housing vouchers, federal block grants, and tax incentives such as housing tax credits and below-market interest rate loans. Furthermore, at the regional and local levels, many community-based, non-profit organisations aim to assist low- and medium-income households in entering the owner occupation sector (Hawtrey, 2009). These approaches together shape the availability of affordable housing for low-income households in the US.

3.4.2 The United Kingdom

Because the sizable social housing system in the UK typically takes care of low-income renters, housing affordability issues typically focus on the owner-occupied market (Hawtrey, 2009). Whitehead (2011) indicates that the housing market in the UK differs widely between areas. For example, Scotland's market is different from that of England, and London's market appears to be unique in England. Although the difference is not as large as the American gap measure quoted above, this kind of regional disparity can still clearly be seen when assessing the affordability issue in the UK. The median multiple shows that the national multiple in the UK is 4.6, while London is the most unaffordable major city in the country with a multiple of 8.5; even its outskirts have a multiple of 7.1, which is well above the national average (Cox and Pavletich, 2017). In contrast to the US, none of the 21 studied cities in the UK are categorised as 'affordable' in the *2017 Demographia Survey* (ibid.). Among them, two markets are 'moderately unaffordable', 12 are 'seriously unaffordable', and the remaining seven are 'severely unaffordable' (ibid.).

The UK government aims to tackle this affordability problem (Poon and Garratt, 2012). According to Mulliner and Maliene (2013), its main long-standing affordable housing policies are to increase the opportunity for owner occupation, expand the supply of affordable housing, and improve affordability. The government officially defines affordable housing as including social housing and intermediate housing (CLG, 2011). In the UK, social housing is essentially social rented housing, and as mentioned previously, intermediate housing is aimed

at those who are ‘stuck in the middle’: people who can pay more than the price of social rented housing but are unable to afford the full price of housing in the open market. Hall and Gibb (2010) indicate that in the last two decades, there has been a reduction in the supply of social rented housing across the whole country. However, given the government’s goal of increasing home ownership, intermediate housing has become a major part of affordable housing policy in the UK, and accounted for 40% of affordable housing products in 2007 (Monk and Whitehead, 2010; Mulliner and Maliene, 2013). A wide range of intermediate products exist, such as shared ownership, shared equity, and intermediate rent; however, the principal focus is on low-cost home ownership (LCHO) products (Mulliner and Maliene, 2013). The National Housing Federation of England (NHF) (2017) shows that a number of schemes are available under the LCHO programme, including New Build HomeBuy (shared ownership), Social HomeBuy, Rent to HomeBuy, and HomeBuy Direct. These schemes help households buy affordable homes, as against intermediate rent (ibid.). Burgess (2010) states that intermediate housing became popular because it can be negotiated through the planning system and a certain amount of government subsidies can always be obtained, unlike for social rented housing.

According to Gurran and Whitehead (2011), an important source of affordable housing supply, such as intermediate housing and social rental housing, is planning agreements²⁰. For example, in Scotland, as supported and required by the Scottish government in the Scottish Planning Policy (SPP) to enable the provision of low-cost homes for rent and sale, ‘residential development, including conversions, consisting of 5 or more units should include provision of an affordable housing contribution amounting to an equivalent of 25% of the total number of units proposed’ (PKC, 2014). In England, the land-use planning system is also the primary mechanism to deliver affordable housing units (Mulliner and Maliene, 2013). Planning obligations, which are legal contracts made under Section 106 of the *1990 Town and Country Planning Act* and are generally entered into by agreement between local governments and developers, require developers to provide a set amount of affordable housing as a part of their development proposals (ibid.). Shostak and Houghton (2008) suggest that most local governments in England require 20% to 50% of new units built on medium to large private sites to be affordable housing, with the remainder to be sold at full

²⁰ According to Gibb (2017), this has changed considerably in England in recent years, and away from affordable supply.

price on the open market. However, this is now tested locally and can be specific to the development.

In addition to planning obligations, government financial support plays a huge role in supporting the affordable housing sector and increasing the affordable housing supply in the UK. In 2008, the UK government introduced an affordable housing programme (AHP) to increase the affordable housing supply in England (Hawtrey, 2009). From 2011 to 2015, the Homes and Communities Agency (HCA) invested £4.5 billion in affordable housing through the AHP (GOV.UK, 2015). In this programme, a proportion of affordable homes are built each year based on a 2:1 split, with two-thirds for affordable rent and one-third for affordable ownership (Hawtrey, 2009). In fact, before the 1980s, the dominant affordable housing finance model in the UK was the traditional council house building core model, which was financed from long-term public loans (Gibb, 2018). However, this long-standing model was gradually undermined starting in the early 1980s, as the UK government imposed a long-standing housing-specific borrowing limit on local authorities and reduced council subsidies on the affordable housing sector (ibid.). However, instead, a mixed funding model was established in 1988 in the housing association sector; this brought important reforms to the previous financing system, which had been a heavy financial burden on the government (ibid). Gibb (2018) suggests that the new system was built based on a strong regulatory environment within which housing associations would fund the development of social housing through an up-front capital grant from the government while the remaining development costs would be met by a private mortgage loan. However, this new system required that rent, which should be affordable to the low-income households, meet the loan repayment plus the management and maintenance fees, and that it be enough to create a sinking fund for long-term repairs (ibid). In practice, in the following 20 years, this financing model functioned well. It allowed housing associations that were eligible for capital grants to subsidise the construction of affordable housing, including social rented housing and intermediate tenure housing, whereas the rest of development costs could usually be funded by private loans, which were supported by rental income streams from existing stocks (Cho and Whitehead, 2010; Gibb, 2018).

Regarding the demand-side subsidy, Hawtrey (2009) argues that one important way in which the government supports affordability is by making low-income households in either public or private rental property eligible for rent rebates or allowances in the form of ‘housing

benefits’ or ‘local housing allowance’. Recent statistics show that in February 2016, 4,731,241 people in the UK were in receipt of housing benefits (Foster, 2016).

Overall, although intermediate housing in the UK is becoming increasingly popular (see: Gibb, MacLennan and Stephens, 2013; Mulliner and Maliene, 2013), this country has placed a strong emphasis on the social housing sector. Some 20% of UK households are social renting households, compared to 5% in the US and 3% in Australia (Hawtrey, 2009). In addition, it can be concluded that affordable housing finance in the UK mainly relies on government subsidies, for example through offering direct government grants to local councils, housing associations, and other housing corporations to increase the supply of affordable housing, and providing housing benefits to households to meet their housing demands. However, the mixed financing model established in 1988 was a milestone that has helped the UK government change from the ‘direct provider’ of affordable housing to an ‘enabler’, which allowed third parties such as housing associations and private capital to enter and start to play significant roles in the affordable housing sector. Moreover, approaches such as planning agreements also play a huge part in increasing affordable housing supply. At the same time, many local governments are establishing local housing companies as alternative ways to contribute to local affordable housing solutions of different kinds (Gibb, 2018). On the other hand, it is notable that the tax approach, such as the mortgage interest deduction that saved US households \$171 billion in housing costs in 2008, is no longer used in the UK to mitigate the affordability problem.

3.4.3 Australia

In Australia, the 30% rule is widely used to measure the housing affordability issue (see: Ong and Wood, 2011). The Reserve Bank of Australia (RBA) has found that about 30% of Australian households have debt-servicing ratios over 30% in the owner-occupied market (Hawtrey, 2009). Again, based on this 30% rule, the National Centre for Social and Economic Modelling (NATSEM) at the University of Canberra indicates that more than 23% of Australian households have housing stress when measured by dividing housing costs by gross income (Hawtrey, 2009). Different to the situation in the UK, where a sizable social housing system accommodates the majority of renters, private renters in Australia account for around one-fifth of the population, and over half of them are in housing stress (Robinson and Adams, 2008). Across all major housing markets in the country, the median multiple is

severely unaffordable at 6.6, and it has been for all 11 years of the *Demographia Survey* (Cox and Pavletich, 2017). Sydney is the least affordable housing market in Australia with a multiple of 12.2, followed by Melbourne (9.5), the Gold Coast (9.0), Adelaide (6.6), Brisbane (6.2), and Perth (6.1) (ibid.). This is different to the US but similar to the UK in that no major Australian housing market is rated as affordable (ibid.).

Thus, the affordability issue in Australia is clearly serious, but in contrast to the US and the UK, the country's affordable housing sector is immature (Austin et al., 2014). According to Berry (2003), affordable housing policy in Australia has been marginalised by the political agenda for many years. This situation could be similar to China's, as mentioned previously.

Yates (2016) argues that the Australian government needs to increase the supply of publicly financed affordable housing, as the current public housing sector in Australia appears to be a minority. It is clear that state housing authorities struggle to avoid operating deficits. Thus, they find it necessary to progressively sell public housing into private ownership, with the new construction of public housing only at a level to maintain the current stock (Berry, 2003). There is certainly no contribution to expanding the public housing sector to meet the increasing needs of society (ibid.). As a result, over the past 20 years, a growing proportion of households have faced high housing costs in relation to their income because of a shortage of affordable housing, particularly in major metropolitan areas of the country (Yates, 2016).

In contrast, the private rental sector is a significant part of the Australian housing system. Thus, the government financial support regarding affordability is usually placed on the demand side (Rowley and Leishman, 2017). For example, the Australian government employs the Commonwealth Rent Assistance (CRA) programme to address the affordability problem raised in the private rental sector (Berry, 2003). In the CRA programme, qualified renters are given 75 cents for each dollar spent above the rent threshold as a contribution to their rent, up to a maximum value specified by the government (Hawtrey, 2009). Yet, critics of the CRA argue that this programme is not equal, as individuals with the same income normally do not receive the same amount of financial support. Furthermore, there is no allowance for the spatial variation that exists in rents in different locations: the maximum value of support is the same regardless of conditions in the rental market (ibid.).

In terms of homeownership assistance in Australia, there are two aspects: direct assistance, such as the First Home Owners Grant, and indirect assistance, provided through the tax system (Hawtrey, 2009). Currently, qualified first-time buyers in New South Wales, for example, can be granted AU\$15,000 when they buy or build a new home (Office of State Revenue (NSW), 2016). Hawtrey (2009) states that mortgage interest is not tax deductible for Australian households, but owner-occupied housing is exempt from state land taxes up to a threshold value, and no capital gain taxes are levied on principle homes for owner-occupiers.

On the supply side, following 2007, which brought in the Rudd Australian Labour Government, most states in Australia started to refine their planning systems to increase the supply of affordable housing (Austin et al., 2014). By 2012, five states had set their affordable targets at 15%: Australian Capital Territory, the Northern Territory, Queensland, South Australia, and Western Australia (ibid.). Furthermore, the Australian central government has also started to play a more positive role by placing affordable housing firmly on the national agenda (ibid.). Initiatives include a National Rental Affordability Scheme (NRAS) modelled after the Low-Income Housing Tax Credit programme implemented in the US, which provides incentives to affordable housing developers (ibid.).

Austin et al. (2014) and Davison et al. (2012) suggest that South Australia's model might represent a recent success for the affordable housing sector in the political agenda. Currently, when land is rezoned in South Australia, it is required that 10% of new homes be released at affordable price thresholds, and 5% of housing must be offered to social housing providers. This can be recognised as a modest form of the UK model (Austin, et al., 2014). Through this scheme, more than 630 units of affordable housing (for sale and rent) were delivered by late 2012, and another 1,800 units were under negotiation (Davison et al., 2013).

Thus, it can be concluded that although the affordable housing sector in Australia is not mature compared to the US and the UK, it might be improving. Currently, the Australian government uses approaches that include providing rent assistance to private renters, offering the First Home Owners Grant, and providing some tax incentives to owner-occupiers to improve affordability. In addition, it can be expected that affordable housing supply will significantly increase through planning agreements based on the South Australian model, and

that more private capital will flow into the affordable housing sector to increase the supply thanks to the NRAS.

3.4.4 Summary and References to China

In summary, it can be stated that the highlight of the US model of housing provision is to encourage the private sector to participate in the construction of affordable housing projects through the LIHTC scheme. In the UK, intermediate housing has played a significant role in the affordable housing sector, and housing associations that are non-government and non-profit are the major players responsible for the construction and finance of affordable housing schemes. In Australia, subsidies for the demand side are the most significant method used to tackle the affordability issue. Positive experiences can be generated for China based on these practices. For example, PRH is provided at a cost above social rent but below market levels, and SOH is now one of the housing forms of the affordable housing sector in the country; both are conceptually similar to and may be modelled from the idea of intermediate housing in the UK.

Behind the appearance of each country's easily recognisable characteristics, the three countries all have a common point of housing provision, where government intervention and leadership in the affordable housing sector is considerably evident. At the primary stage of the development of housing provision, some governments were even solely responsible for constructing and operating affordable housing projects, for example in the US before the 1970s and in the UK before the 1980s. This is highly similar to what is happening in China now. On the other hand, it is easy to understand that building a large number of affordable housing projects is bound to impose a heavy financial burden on the government, so it will certainly introduce private capital and market mechanisms to fill its budget deficit for these projects. As a result, in the current affordable housing sectors in the US, the UK, and Australia, resources are allocated and utilised by market mechanisms but with a certain degree of governmental interventions such as tax credits, rent assistance, and subsidies to housing associations. In other words, the governments in these countries use limited funding as leverage to impact and attract much more private capital to flow into the affordable housing sector, creating a virtuous and sustainable funding cycle where government and private capital can be integrated together to contribute to increasing the affordable housing supply.

In contrast, the current housing provision system in China is significantly isolated from the market. That is, compared to the US, the UK, and Australia, affordable housing in China is purely the responsibility of the government, with no role for market mechanisms. The reason for this is simple: the affordable housing business in China is unprofitable or can only generate small profit, which is not attractive to private capital and investors. It is known that the Chinese government is trying to create a channel that could guide private capital into the affordable housing sector through several innovative methods, as mentioned above; however, to date no methods have been employed and established as stable and long-term national strategies. As a result, as stated by Cao (2018), the current affordable housing finance system in China contains several key challenges, including severe funding shortage, insufficient financing channels, and over-reliance on government financial support, all of which seriously or even dangerously restrict the development of the affordable housing sector in the country. Thus, there is an urgent need for channels or links between government and market to be created.

In addition, at the beginning of this thesis, it was pointed out that the funding gap of the affordable housing sector in China will expand in the long run. Taking Beijing as an example, the funding gap for the city's affordable housing sector in the next 30 years is estimated to be up to 4.5 trillion. Given the existing knowledge that government financial support is the primary or could be the only financial source for the affordable housing sector in some way, Yuan (2014) states that the current financing model of affordable housing in China could be recognised as living beyond one's means, which is unhealthy and unsustainable. This is because the current affordable housing finance depends on government finance, but government finance in China depends on land finance, and the model of land finance itself is not sustainable and heavily criticised by Chinese scholars (Tan et al., 2016; Yuan, 2014). This thesis is not intended to discuss the model of land finance. However, based on the available literature, it is proposed that compared to the US, the UK, and Australia, China's current financing model for affordable housing is short-sighted and unsustainable in that it relies too heavily on government finance. Although the financial problem for the 12th five-year plan period has been solved, according to official media, one can suspect that financing further affordable housing could still be problematic if the current financing model remains unchanged.

Most studies on the current affordable housing finance in China are based on the funding problem proposed for the 12th five-year plan period, which conflicts with the official announcement of the successful building of 36 million units of affordable housing by the end of 2015. Furthermore, the few research projects available on affordable housing finance in China from a long-term perspective are all based on assumptions and estimations, thus lacking convincing data (see: Ge and Zhang, 2015). Therefore, solid and robust evidence from fieldwork is required to support the idea that compared to the US, the UK, and Australia, the current model cannot sustainably finance further affordable housing in China, given the still-unsolved contradiction between the affordable housing target set for the 12th five-year plan being met, and the continuing funding gap emphasised by academic circles . More details are addressed later in this thesis.

3.5 The Affordable Housing Sector and the Investment Vehicle of REITs

Besides the main approaches that many governments use to finance affordable housing, the Chinese government is demanding an investment vehicle in the form of REITs to join the affordable housing sector as an innovative solution to its affordable housing problems (Ding, 2016). However, it is meaningful to understand why an investment vehicle could be useful to support the affordable housing sector and why this vehicle is preferred by the Chinese government. To this end, this section first examines what REITs are, and then investigates the relationship between REITs and affordable housing.

3.5.1 REITs

A REIT is a financial vehicle that allows investors to trade an interest in a portfolio of real estate in the same way as purchasing and selling shares of a public company (Jones, 2007). It can be defined as a corporation with the aim of helping private and institutional investors invest in real estate assets. A REIT acts as a conduit that raises money from investors, often through secondary equity offerings or an initial public offering (IPO) on a stock exchange (Chen, 2011). A REIT can be used to finance or purchase real estate, such as office buildings, shopping malls, hospitals, warehouses, parking lots, and affordable housing projects (ibid.).

A REIT's income stems from those assets in its portfolio, rent or parking fees, for instance, and distributes it to its shareholders as a dividend. A REIT can increase the assets in its portfolio by purchasing real estate directly or loaning money to property developers or property managers, whose mortgage payments become a source of the REIT's income. In 2016, trust experts estimated that the 12-month total returns for the global REIT industry were at 3.6%, while total returns including capital appreciation and income over the last three years (2013-2015) stood at 38.6% (EY, 2016).

The first REIT, in the modern-day form listed on the stock exchange, was created in the US by the adoption of the REIT Act of 1960. The basic concept of REITs was that they were real estate companies or trusts owning properties and passing the vast majority of their returns to shareholders (McIntosh, 2010). Under the 1960 legislation, tax transparency was granted to shareholders provided a series of conditions were met (Brounen and Koning, 2014). Jones (2007) suggests that the tax transparent feature of a REIT means that it does not pay tax on the company level, unlike a traditional real estate company. However, unit holders have to pay their personal tax on the income distributed from the REIT (ibid.).

According to McIntosh (2010), the REIT industry experienced significant expansion and growth in the decades that followed. The conditions to qualify for the favourable tax treatment have changed slightly over time, but the four principle conditions that currently exist are:

- A REIT must be a corporation, trust, or association;
- At least 75% of a REIT's assets must consist of interests in real property, cash, or government securities;
- At least 75% of a REIT's gross income must come from interests in real property including rents and mortgage interest, and gains from disposition of real property interests including shares of other REITs; and
- A REIT must distribute 90% of taxable income to use the dividends-paid deduction.

There are three types of REITs in the US:

- Equity REITs own a portfolio of property assets, and the income generated from those

assets such as rental yield is passed on to shareholders in the form of dividends (NIA, 2010). In the US, more than 75% of assets held by an equity REIT should be in the form of direct ownership of income-producing properties (Hoesli and MacGregor, 2000).

- Mortgage REITs engage in lending activities that are secured by real estate collateral, and the interest received from the loans is also passed on to shareholders (NIA, 2010). In the US, more than 75% of assets held by a mortgage REIT should be in the form of property-related debt instruments (Hoesli and MacGregor, 2000).
- Hybrid REITs invest in the equity and debt sides of the real estate markets simultaneously, but since 2010 are no longer listed (McIntosh, 2010).

Regardless of type, most REITs' taxable income (at least 90%) is distributed to shareholders through dividends, and in return REITs are largely exempt from corporation taxes (NIA, 2010). This significant feature makes REITs an attractive investment vehicle. Furthermore, Leong et al. (2014) suggest a few reasons why REITs are an appealing investment over other forms of investments. The most important one is that REITs can generate a ***recurring stream of income***, since they are legally required to distribute at least 90% of their earnings to shareholders in most countries. Besides, REIT products have room for 'upside', a term used by bankers to describe '***growth potential***', which means that investors have the chance to receive higher returns than the low returns on fixed deposits, for instance (ibid.). This is because the underlying assets of a REIT's portfolio contain real estate, which has the nature of unearned increment in the long run. Moreover, Hill et al. (2012) propose that '***flexibility***' is another advantage of investing in REITs: investment in REITs is easy to convert back into cash, since they normally trade on the stock exchange. Furthermore, a REIT ***diversifies risk*** by investing in different types of properties across different locations, rather than pooling all one's savings into a single flat and hoping the price increases (Huang and Zhong, 2013). Lastly, Leong et al. (2014) point out that the ***performance*** of publicly traded equity REITs over the past 30 years has in fact outperformed the leading stock market indices, such as the S&P500, Dow Jones Industrials, and the NASDAQ composite. Part of the reason for this is that when managed well, REITs act as a solid asset with the potential to deliver solid returns (ibid).

However, risks and disadvantages can also be expected when investing in REITs. Leong et al. (2014) argue that two key factors must be considered: ***economic downturns*** and ***interest rate***

fluctuations. If an economic downturn hits, it is questionable whether the REIT sector can continue to perform well. For example, the world REIT industry suffered an enormous blow during the GFC. In addition, if interest rates rise, REITs could find it more expensive to borrow from banks to acquire real estate, which could affect the rate of their growth.

However, the REIT sector has continued to grow, despite its weakness in 2007 due to the GFC as mentioned above. The number of countries starting to use REIT structures has increased; and in countries where REITs already exist, their market capitalisations have generally increased as well (Chen and Mills, 2010). Many countries are copying the example of the US but do not use such a complex market structure. Instead, they tend to use the model of basic equity REITs, which are more like listed investment companies that follow strict rules and requirements to secure their tax benefits (EPRA, 2017). This thesis is not intended to conduct an extensive review and examination on the world REIT industry, but focused on its connection to the affordable housing sector. Also, based on the actual situation in China, where the government wants to liquidise PRH assets, it can be stated that equity REITs will be the major direction and focus of the proposed REIT industry in the country, and should be the emphasis of the present study²¹.

3.5.2 The Connection Between REITs and Affordable Housing

As mentioned above, equity REITs own income-producing real estate assets while leasing out the space to tenants to generate returns for investors. By owning different types of real estate, equity REITs have different sectors, too. Nareit (2017a) proposes a classification of 12 types of REITs:

- Office REITs
- Industrial REITs
- Retail REITs
- Lodging REITs
- Residential REITs
- Timberland REITs
- Health care REITs

²¹ Refer to Chapter 5 for more details.

- Self-storage REITs
- Infrastructure REITs
- Data centre REITs
- Diversified REITs
- Specialty REITs

It is commonly known that most REITs are commercial ones. Hale (2014) suggests that REITs typically invest in retail, industry, or office real estate, and this ‘rule’ applies to the US, the UK, and Australian markets, as commercial real estate is fundamentally different to residential one. Simply stated, yields of commercial real estate are generally higher (ibid.). In contrast, the affordable housing REITs mentioned in this thesis appear to be special and unusual, which could be defined as the type of residential REITs classified above but focusing on specific classes of properties (Nareit, 2017a). However, REITs in fact have a long history of involvement within the affordable housing sector, particularly in the US.

Y.X. Huang (2010) indicates that at the time of the emergence of REITs, even before the US Congress enacted the law providing for REITs in 1960, Morris Milgram established a real estate fund called ‘The Mutual Real Estate Investment Trust’ or M-REIT in the 1950s with the purpose of creating good communities and providing housing to all, regardless of race or class.²² The first project of the M-REIT was built in 1954; it offered more than 300 rooms for rent available to low-income households, with rents that ranged from \$26 to \$41 a room, which was below the market rate at that time (Wilkins, 1967). This project and the following ones were successful, as the annual return of around 7% was generally able to be paid back to and please the investors (Y.X. Huang, 2010). Based on the experiences from the US, liquidity is the greatest benefit that REITs can bring to the affordable housing sector: developers can quit the holding period of affordable housing units but sell to REITs and recollect the money for new affordable housing builds (ibid.).

However, on the other side, Jones (2007) argues that affordable housing REITs could be difficult to be established in the UK, based on the experiences from the US and Australia. This is because that several uncertainties about whether REITs can find sufficient housing supply, overcome local market risks and create the economies of scale to expand the housing

²² The racial problem was serious in the US back in the 1950’s.

sector still remain (ibid.). More seriously, the creation of affordable housing REITs, in the UK context, offers the opportunity for housing associations to liquidise their housing stocks for capitals but if housing associations themselves convert to REITs or are acquired by REITs then a series of social issues is expected as those social landlords would then place them in the private investment sphere of decision making, which would cause unpredictable consequences (ibid.).

Yet, this thesis argues that nowadays, the investment vehicle of REITs and the affordable housing sector could still be linked, although affordable housing REITs are not a large business relative to commercial REITs in the current situation. Four contemporary REITs that are closely linked to the affordable housing sector have been identified through an intensive and comprehensive investigation in this research project. They are one commercial REIT holding commercial real estate within public housing estates, namely the Link REIT in Hong Kong,²³ and three affordable housing REITs: the Community Development Trust, or CDT, and the Housing Partnership Equity Trust or HPET in the US, and the Civitas Social Housing PLC or Civitas in the UK.²⁴ It is believed that they could be good cases to provide valuable insight to the proposed affordable housing REITs in China. Hence, this thesis examines the above REITs carefully. More details are presented in Chapter 6.

3.6 Conclusion

The affordable housing sector of China has slowly evolved over the last 20 years. Soon after the initial proposals to house the majority of the urban population of China in ECH, the affordable housing sector quickly became marginalised within the country's political agenda in the following decade. It then underwent resurgence and experienced the construction boom in the 12th five-year plan period. Finally, the policy-makers have recognised the importance of affordable housing and aiming to develop an established affordable rental market by 2020 with the emphasis on the PRH. The affordable housing sector of China has tried several strategies but many issues around the new sector have still to be resolved.

²³ In fact, the Link REIT is a commercial REIT that owns commercial real estate within public housing properties, rather than owning public housing units. However, this REIT has a significant effect on the affordable housing sector of Hong Kong. More details are discussed in Chapter 6.

²⁴ Civitas had its initial public offering (IPO) in November 2016, and thus cannot be recognised as a well-established case study in this thesis.

However, during this process, especially because of the construction boom between 2011 and 2015, a heavy financial burden has been imposed on the local governments of China. This is because they were the executors of financing and building affordable housing projects, and the target set for the 12th five-year plan period was too ambitious to complete. Comparing to practices of the US, the UK, and Australia, the most significant difference was that the private sector was not willing to participate in the affordable housing business in China, although the government heavily promoted private-sector involvement, especially for PRH programmes it did not materialise. This situation led to the unsustainable development of the affordable housing sector of China for financing and investment, which it could be difficult to finance further affordable housing in the long run.

Thus, the government has a plan to establish affordable housing REITs to liquidise the capital held in existing PRH assets. In fact, this idea is reasonable and traceable, as REITs have a long history of involvement within the affordable housing sector in the US. There are currently several available and well-established examples in the world. Thus, further and detailed investigation is required to provide the proposed affordable housing REITs in China with mature and solid insight.

Chapter 4: Conceptual Model, Research Questions and Methodology

4.1 Introduction

Previous chapters have sought to study the serious housing affordability issue in China, the actions of the local and national governments, and the potential reasoning for the proposed development of a REITs investment vehicle. This included looking current international practices and how the methods employed in more developed affordable housing markets. This chapter starts to develop an appropriate research methodology and specific methods to show and guide how this research will be conducted.

The chapter begins by examining the relevant conceptual ideas developed by established housing scholars, and integrates and tailors them to suit the Chinese situation by creating a conceptual model for this research project. Based on this model, the research aims to investigate and determine whether a robust link can be built between the affordable housing sector and private investment through the creation of REITs. Specifically, three research questions are developed after a process of careful consideration, including choosing the study area of Nanjing.

To address those questions, this thesis adopts the research philosophy of pragmatism, and the method of qualitative case studies is deemed to be suitable for this research. However, a long and thorough preparation process of data collection was required before the case studies could be conducted in the chosen areas of mainland China, Hong Kong, and the US. Thus, this chapter explains the research techniques used to collect data during the fieldwork, namely elite interviews and document review. Subsequently, the data analysis process is discussed. Finally, the issue that the classified data is disclosed in this research is deliberated. More details are provided below.

4.2 Conceptual Model to Guide the Research

Based on the current literature, it can be concluded that the high house prices and the serious housing affordability issue in urban China are clear signs that the housing market is failing. To correct this failure, the government has responded by launching massive affordable housing projects across the whole country, and especially the ambitious target of building 36 million affordable housing units for the 12th five-year plan period proposed in 2011. In other words, the Chinese government has intervened to mitigate the housing market failure by increasing the affordable housing supply. The whole logic of market failure and government intervention has been clear and this phenomenon has been well documented by researchers (see: Lyu, 2014; Tong, 2014). However, during the process of this intervention, the government has often mentioned the financial difficulty in building massive affordable housing units as planned. This has also been heavily studied by academia (see: Ding, 2016; Ge and Zhang, 2015; Qi and Wang, 2013). At this point in time, REITs as a tool of financial innovation have become an important topic on the country's national agenda, and are believed to offer a potential solution to the government's financial problem.

However, several issues cannot be addressed after reviewing the existing literature and research projects alone. One would be the ambiguity regarding the financing of the affordable housing programmes in China as no specific and detailed financial data is available; another is the unclear logic that adequately explains the government's unique enthusiastic promotion of affordable housing REITs or how they could work in the Chinese context. Based on recent research projects, such as those of Ding (2016), Jia and Meng (2013), Jiang et al. (2013), and Wang et al. (2015), who argue that government-led projects are in a great need of private capital to lessening the burden on public finances. On the other hand, the state media reported that the government had overcome its financial stress, as the 36 million planned units of affordable housing were built on time; however, the media did not specify how the target was achieved. Yet, the government maintains great initiatives for promoting REITs, especially the creation of affordable housing REITs. For example, in 2016 the State Council issued two documents providing guidance and opinions on the promotion and creation of REITs.²⁵ It can be stated that the proposal of affordable housing REITs is being further pushed forward, although the achievement of the enormous housing supply target set by the 12th five-year plan

²⁵ State Council's No.39 and No.54 documents issued in May and October 2016, respectively, to create an affordable rental market with the creation of REITs.

period has lessened the urgency, as mentioned above. Thus, one can suspect that the relationship between affordable housing finance and REITs in China may not be as simple as stated in current studies. Instead, it may include deeper issues requiring further investigation. It should also be noted that although the government is vigorously promoting REITs, details such as how to set them up systematically have not been published in any official documents, but instead remain a general idea.

Because of this confusion and knowledge gaps, the following conceptual framework was developed.

4.2.1 The Original Inspiration

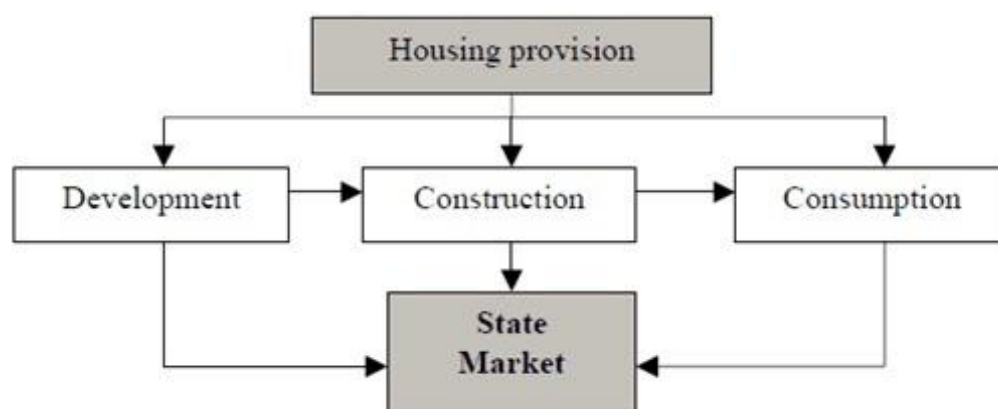
Yuan (2014) suggests that the initiative of affordable housing REITs in China would play a significant role in the introduction of sizable private capital flowing to the affordable housing sector. That is, commercial investors through a REIT vehicle would invest in affordable housing in order to generate directly or indirectly more affordable housing units (*ibid.*). This is still an unfulfilled goal. As described in Chapter 3, compared to other countries such as the US and the UK, China has heavily relied on government support for the protection of low-income households' living rights. Therefore, the government has continued to encourage the private sector to participate in the affordable housing business, but these efforts have been unsuccessful.

In fact, cooperation between the public and private sectors in housing provision has a long and successful history around the world. As early as in the 1960s, local governments and developers in the US worked together to transform and upgrade many slums into modern affordable communities (Jacobs, 1961). In European countries including the UK, Spain, France, Germany, Italy, and Portugal, the private sector started to work with the government to build affordable housing on a large scale as early as the 1990s (Copiello, 2015; Koebel et al., 1998; Swyngedouw et al., 2002). As discussed in the last chapter, affordable housing projects in China are built by developers, under the supervision of local governments. However, Copiello (2015) notes that in European countries, for example, the private sector works in partnership with the government on the construction of affordable housing, including sharing investment costs and transferring the risk from public to private. In contrast, the present cooperation between the many private sector developers and the

government in China is much more superficial. When developers participate in the construction of affordable housing projects, they act like students finishing the work assigned by their teachers, namely the government. This could also be why the Chinese government has shown a sense of urgency in launching affordable housing REITs: the latter could establish a deep and innovative cooperation between the government and the private sector.

Regarding this issue, Mostafa et al. (2002) suggest that the main forces of the housing provision system in China are the state and market, however, a strategic partnership between two forces is far from establishment, and the provision process can be categorised into three stages: development, construction, and consumption. This general idea was initially proposed by Ambrose (1992) and then improved by Doling (1999). It indicates that the main stages in housing provision systems of most countries, regardless of different market mechanisms and different economic systems, move from initiation to use and then to demolition. Moreover, each stage in this housing provision chain may require a balance between state and market activities (Ambrose, 1992). This state-market mix housing provision model can be graphically presented, as shown in Figure 4.1 below.

Figure 4.1: Housing Provision Model



Source: Doling, 1999; Mostafa et al., 2002; modified by the researcher, 2015.

The model above suggests that in the context of China, the government intervenes in the affordable housing market at each stage. In the development phase, local governments make decisions to determine site location, financing source, land allocation, housing type, and many other details to set up conditions for housing construction to take place. During the

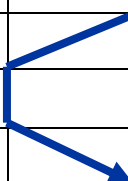
construction phase, these governments appoint qualified developers to complete the construction work through free market competition or negotiations. Furthermore, this work is strictly monitored and supervised by the government. Finally, once the affordable housing is built, the governments also regulate the consumption of housing, as they choose the qualified groups of people who can buy or rent the housing and how much they should pay.

4.2.2 Adjustment of the Model – Identifying the Missing Link

It can be seen that the government takes a major role in the housing provision chain of China, from development to construction and consumption. Only in the construction phase is there some limited cooperation between the government and the market, as private developers are involved. In other words, a state-market mix only exists in this stage of China's affordable housing system (refer to Table 4.1 below). Based on the model proposed above, it is not difficult to understand the 'unlimited responsibility'²⁶ that the government currently takes in building affordable housing projects. Even if private developers undertake the construction phase, the government still needs to supply land and acquire financing for the complete housing provision chain, and is responsible for every aspect of the affordable housing units after they are built.

Table 4.1: Current State-Market Mix in China's Housing Provision Chain of China

	Market	State
Development		
Construction		
Consumption		



Source: Doling, 1999; modified by the researcher, 2015.

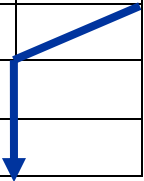
Thus, the original intention behind the affordable housing REITs proposed by the government can be understood in a deeper sense: the government might aim to find an innovative way, namely by creating a state-market mix at the consumption stage through

²⁶ In December 2014, an unnamed official of the MOHURD said that the government had 'unlimited responsibility' in building affordable housing projects and that this was a heavy burden.

REITs, to ease the financial strain of building affordable housing units on a massive scale. This is the research motivation of the present study (see Table 4.2 below).

Table 4.2: Proposed State-Market Mix in China’s Future Housing Provision Chain

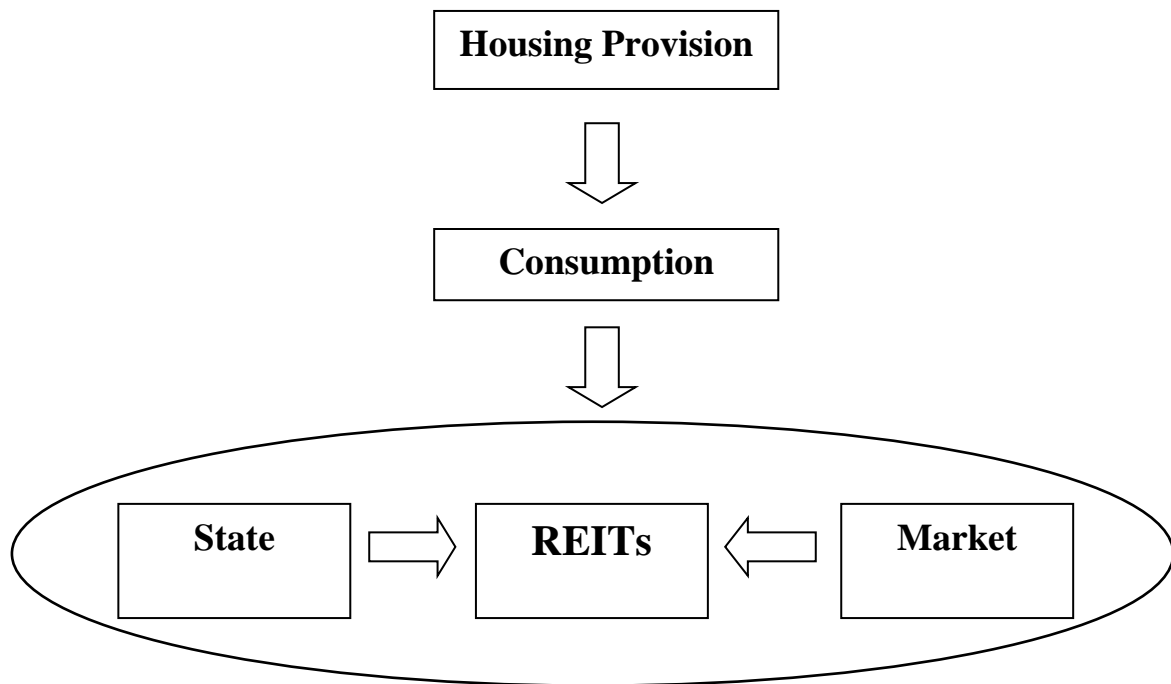
	Market	State
Development		
Construction		
Consumption		



Source: Doling, 1999; modified by the researcher, 2015.

Based on the above logic, this research project aims to investigate and identify the missing part of the housing provision chain in China. In other words, this thesis studies the underlying motive for the government’s REITs initiative and examines if some version thereof REITs are possible and capable to create a state-market mix at the consumption stage of the housing provision chain. Moreover, the thesis addresses the knowledge gap on affordable housing finance in China, including why the government has chosen REITs and how REITs could work. To this end, some changes have been made to Doling’s (1999) original conceptual model to specifically apply to this research project; refer to Figure 4.2 below.

Figure 4.2: Conceptual Model for this Research Project



Source: Developed by the researcher, 2015.

Based on the figure above, this thesis investigates whether the creation of REITs could establish a robust link between the affordable housing sector, or the state, and private investments, or the market, at the final consumption stage of China's housing provision chain. Simply stated, this study examines whether REITs could be established from China's affordable housing sector to create a state-market mix for an affordable, fair, and sustainable housing provision system.

4.3 Research Questions

The research questions of this project are developed based on a rigorous sequence of thinking, from initiation, to then choosing the research area, and to generating the final research questions. Every step requires careful consideration, and the details are presented below.

4.3.1 Objectives

On the basis of reviewing the existing literature in both the English and Chinese languages, academic research does not yet seem to fully explain the current affairs of affordable housing finance in China, and overlooks the underlying roots, as stated previously in Section 4.2. To address the knowledge gap and identify the missing part of China's housing provision chain, the overall aim of this research project is to *use empirical findings to examine the possibility of creating a REIT vehicle to finance affordable housing in major cities in China.*

Thus, with the purpose to make these issues clear and discover the rationale for the marketisation of the affordable housing sector using a REIT vehicle, this thesis seeks to address the following objectives based on the conceptual model proposed above.

- **Investigate how affordable housing is financed in China in detail**

The literature review showed that the issue of affordable housing finance in China has been studied by many scholars, and several main financing sources have supported the affordable housing sector. However, if those financing channels were sufficient to fund the massive affordable housing projects in China, it does not follow that the government is still in need of REITs to reduce its financial burden. Therefore, the first and fundamental aim of this thesis is to investigate the real situation of affordable housing finance in China. This investigation should provide a clear background of the government initiative of affordable housing REITs, which currently remains indistinct.

- **Identify the current problems in China's affordable housing finance system and why REITs are considered to be the solution**

The potential link between affordable housing and REITs in China needs to be established. Particularly the government's focus on REITs and its rationality should be investigated and studied using the real facts on affordable housing finance in the country.

- **Study how existing affordable housing REITs operate in other countries**

It is believed that established examples could and should be learned from by China, as there are no (affordable) REITs in operation in the country. Insights from existing affordable housing REITs overseas would be valuable assets for China to use as references, and it is believed that the process of establishing REITs in the country could be accelerated by drawing lessons from these proven examples.

- **Identify the opportunities and pitfalls of the Chinese policy on affordable housing REITs**

On the basis of the Chinese government's plan and the overseas insights regarding affordable housing REITs, it is of significance to identify the opportunities and pitfalls, enablers and barriers of the establishment and operation of proposed affordable housing REITs in the Chinese context.

Addressing the objectives above will fill the knowledge gap regarding the affordable housing finance issue and the proposed affordable housing REITs as a way of creating a sustainable affordable housing system in China. The aim is for this thesis to be a substantial piece of work that stands out from current studies.

4.3.2 Choosing the Research Area – the City of Nanjing

Based on the research aim and objectives proposed above, a large challenge emerged as the research project was being designed: what should the research area be? The city of Nanjing was finally chosen as a suitable case study. This decision was made based on the following thought process.

1. A Suitable Position in the Chinese Urban Pattern: a Major and Advanced City

This was the starting point to choosing a city region, and the following points were considered. First, a huge difference exists between urban and rural China. The concepts of 'real estate market' and 'affordable housing' only apply to cities. Hence, the proposed affordable housing REITs can only be created in urban areas. Second, affordable housing in China has distinct regional characteristics: each local government makes its own plan to build, manage, and operate affordable housing units and sets its own requirements to decide who qualifies to apply for such units. Therefore, for this research to be meaningful, it must be

specific to a city instead of a general study. Third, there are large interurban differences in the country too; only advanced cities could create successful REITs, since a strong socio-economic environment and potential large and high-quality affordable housing stock are essential to investors' confidence. Based on this consideration, the focus was narrowed to first-tier and top second-tier cities.

2. Innovativeness and Uniqueness

PhD projects must present new ideas and findings regarding a research subject or a phenomenon. Thus, the consideration of innovativeness and uniqueness should be greatly addressed in this study. Recalling the fact that according to officials, the four first-tier cities of Beijing, Shanghai, Guangzhou, and Shenzhen have made their own affordable housing REITs proposals (see Chapter 1), it would be better for this thesis to skip those cities and focus instead on the top second-tier cities that currently do not have REITs proposals, to avoid doing repetitive work. It is also believed that focusing on top second-tier cities will address the knowledge gap between the first-tier and second-tier cities regarding the establishment of affordable housing REITs: the government and the state media have placed many resources and much emphasis on first-tier cities in this regard, while the position of second-tier cities has been missing from this discussion. The present author aims to address this knowledge gap.

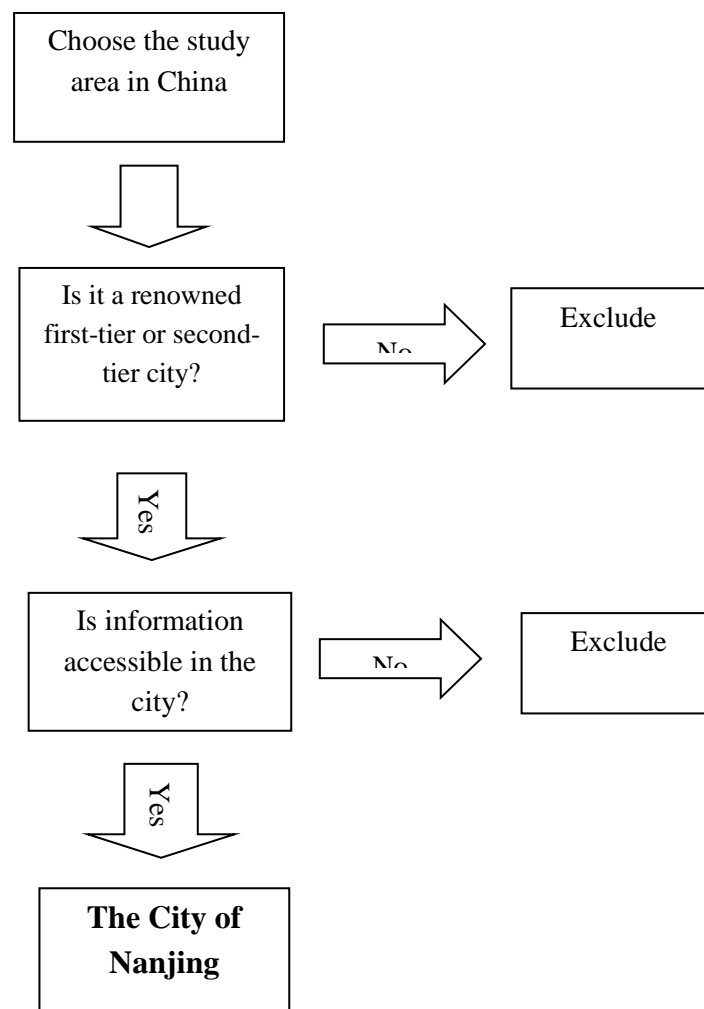
3. Access to Data

This consideration was greatly significant to this research project. Prior to the fieldwork and start of the data collection, the researcher underestimated the difficulty of accessing the data. Since local governments hold the most information required for this research, such as details regarding affordable housing finance and their REIT proposals, the researcher went to the Beijing and Shanghai governments in person, and phoned the housing administrations of Tianjin, Guangzhou, and Shenzhen for interview and data collection purposes. The aim was to test the waters before beginning the data collection. However, all these requests were rejected without a reason. This was a discouraging start but it soon became apparent that accessing data would be difficult but it also suggested that this research had academic, as well as policy merits, as the lack of data and insights in this field meant it was under studied. Pivotal in these early stages this was the realisation that the research design and sampling would need to exploit local connections in the Chinese context. Therefore, after a detailed

search and intensive networking, the researcher took advantage of being a citizen of Nanjing and having a strong background of housing studies, and finally established personal connections (*guanxi*) with the high-ranking and responsible officials of the affordable housing sector in Jiangsu Province and Nanjing as willing participants in this study. Hence, Nanjing as a top second-tier city in China naturally became the suitable research region and the only city where all the required information was accessible.

The whole decision process described above is represented in the following flow chart.

Figure 4.3: The Process of Selecting the Study Area of Nanjing



Source: Developed by the researcher, 2015.

4.3.2.1 About Nanjing

Nanjing is the capital city of Jiangsu Province, which is the second richest provincial administrative region by GDP in China following the Guangdong Province. In JLL's *World Winning Cities Report 2014*, Nanjing was recognised as a leading city in the Chinese urban pattern, and was labelled as one of 'China's City Winners' of that year; see Figure 4.4 below.

Figure 4.4: Nanjing City in China



Source: JLL, 2014.

From the figure above, it can be seen that JLL ranked Nanjing as a tier-1.5 city. According to the National Bureau of Statistics of China (2015), there is no official definition or requirement to classify the tier-1, tier-2, and tier-3 cities, but it is commonly agreed that Beijing, Shanghai, Guangzhou, and Shenzhen are four first-tier cities, while 31 cities

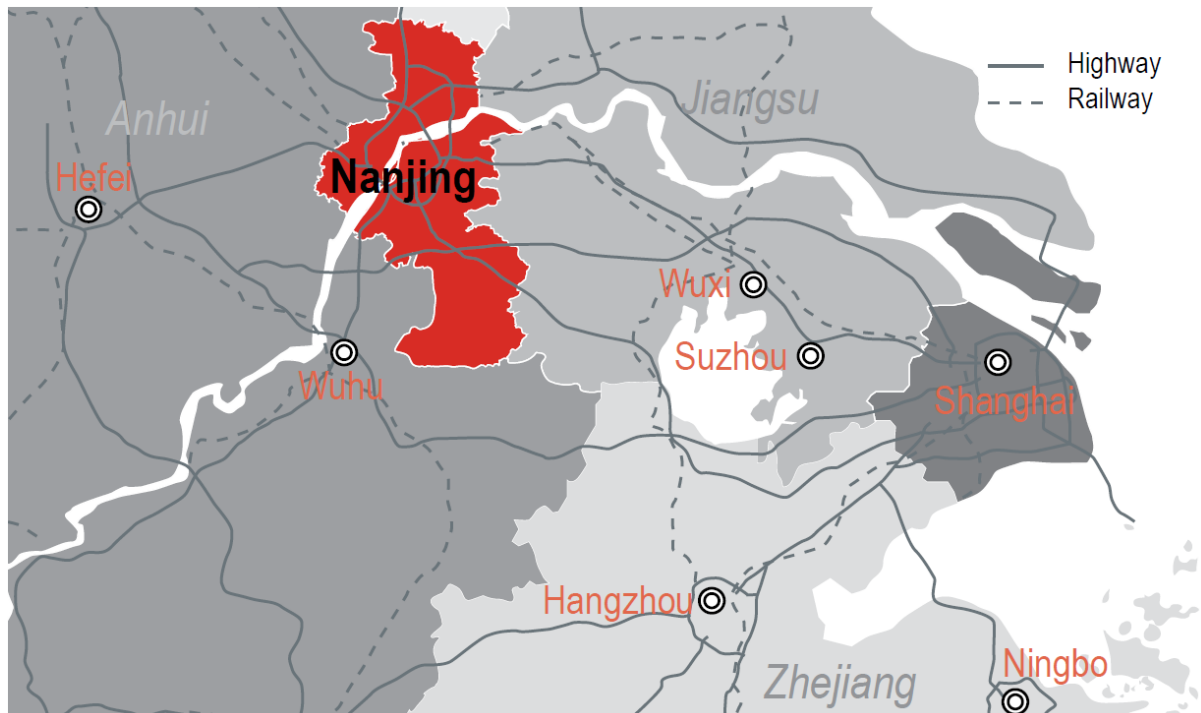
including provincial capitals and sub-provincial cities are second-tier cities, and the remaining large cities are third-tier cities. The ‘tier-1.5 city’ proposed by JLL is not an official definition, but indeed indicates the strong position of Nanjing as one of the top second-tier cities in China as recognised by the property industry and market.

Nanjing is located in the Yangtze River Delta (YRD), which has historically been a rich and fertile area (refer to Figure 4.5 below). The city, whose name means ‘Southern Capital’, has a prominent place in Chinese history and culture, having served as the national capital of various Chinese dynasties, kingdoms, and republican governments dating from the third century AD to 1949 (Nanjing Municipal Government, 2016b). Today, Nanjing is the second largest city in eastern China after Shanghai,²⁷ with a total population of 8.23 million and a registered population of 6.50 million in 2015 (Nanjing Statistics Bureau, 2016). According to the *China Urbanization Progress Report* produced by Shanghai Jiao Tong University, in 2016 the GDP of Nanjing was RMB 1.05 trillion in total (equivalent to GBP122.12 billion or US\$152.46 billion), and the GDP per capita was around US\$17,200,²⁸ which was ranked as the third among all Chinese major mainland cities following Shenzhen and Guangzhou.

²⁷ According to the *Yangtze River Delta Urban Agglomeration Development Plan* jointly issued by the National Development and Reform Commission and the MOHURD on 3 June, 2016.

²⁸ For a better reference, in Europe, GDP per capita in 2016 was US\$16,648 in Slovak Republic, and US\$17,896 in Estonia, according to the *International Monetary Fund World Economic Outlook (October 2016)*.

Figure 4.5: Nanjing in the Yangtze River Delta



Source: JLL, 2014

Growing Housing Market

Nanjing's housing market is one of the most buoyant markets in China or even the world (He, 2016). JLL issued the *City Momentum Index 2017: Global Top 30* report studying and comparing 134 major cities around the world. In this report, based on a broad range of socio-economic and real estate factors including construction rate, absorption rate, house prices, and investment, Nanjing was ranked 29th in the world, showing the city's strong momentum and booming real estate market. The full ranking list is shown in the following table, where all Chinese cities have been marked in bold.

Table 4.3: City Momentum Index 2017: Global Top 30

Top 10		11-20		21-30	
1	Bangalore	11	Dubai	21	San Francisco
2	Ho Chi Minh City	12	Melbourne	22	Shenzhen
3	Silicon Valley	13	Pune	23	Delhi
4	Shanghai	14	New York	24	Raleigh-Durham
5	Hyderabad	15	Beijing	25	Mumbai
6	London	16	Sydney	26	Hangzhou
7	Austin	17	Paris	27	Los Angeles
8	Hanoi	18	Chennai	28	Dublin
9	Boston	19	Manila	29	Nanjing
10	Nairobi	20	Seattle	30	Stockholm

Source: JLL, 2017

Another report issued by Shanghai E-House Real Estate Research Institute (2017) is more straightforward and easier to understand: it indicates the average house price of Chinese major cities in 2016. Among them, Nanjing is currently ranked fourth nationally; see Table 4.4 below.

Table 4.4: Average House Price of Major Chinese Cities in 2016

City	RMB/m ²
1. Shenzhen	53,774
2. Shanghai	38,283
3. Beijing	33,412
4. Nanjing	18,913
5. Suzhou	18,791
6. Hangzhou	17,313
7. Guangzhou	16,697
8. Zhuhai	16,179
9. Wenzhou	15,710
10. Dongguan	14,165
11. Ningbo	14,093
12. Tianjin	13,458
13. Hefei	11,105
14. Kunshan	10,691
15. Taizhou	10,627
16. Dalian	10,562
17. Zhengzhou	10,130
18. Taiyuan	10,022
19. Foshan	9,755
20. Jinan	9,677
21. Nanchang	9,580
22. Wuhan	9,430
23. Haikou	9,094
24. Qingdao	9,019
25. Wuxi	8,922
26. Nantong	8,813
27. Nanning	8,160
28. Chengdu	7,983
29. Kunming	7,967
30. Changzhou	7,509

Source: Shanghai E-House Real Estate Research Institute, 2017

From the table above, it can be seen that the house prices in Nanjing are the highest among all non-first-tier cities, although a large gap exists between first-tier and second-tier cities. The first-tier city of Guangzhou is an exception, ranked seventh whereas Nanjing is fourth.

Potential High Affordable Housing Demand

In the *Chinese Cities of Opportunities 2017* report, jointly produced by PwC and China Development Research Foundation (CDRF), Nanjing is ranked fifth overall among 28 major Chinese cities based on 10 indicators and 57 variables. The 10 indicators include intellectual capital and innovation, technology readiness, important regional cities, healthcare, safety and security, transportation and urban planning, sustainability and the natural environment, culture and lifestyle, economic clout, and cost and ease of doing business (PwC and CDRF, 2017). More opportunities have attracted more people to settle down in Nanjing. In 2000, the population in Nanjing was 6.24 million, of which 5.1 million were registered residents (Nanjing Statistics Bureau, 2016). In contrast, in 2015 the total population had increased to 8.23 million with a registered population of 6.50 million, as mention above. It can be seen that new urban residents have been the main drivers of the population growth in Nanjing, and more than 20% of residents in the city are now non-local. It is also worth noting that Nanjing is one of China's leading education centres. It is home to 54 institutions of higher education, more than any of its neighbouring cities except Shanghai's 67 (JLL, 2014). However, in 2013 the population of enrolled higher-education students was 711,600 in Nanjing, which was more than Shanghai's 504,800, and this was by far the highest number in the YRD region. The city produces over 300,000 graduates to supply the local economy each year (ibid.). As discussed in Sections of 2.4.2 and 2.4.4, apart from the urban low- and middle-income families, the main demand for affordable housing units in China is from new college graduates, migrant workers, and other new urban residents. Given the fact that house prices in Nanjing are some of the highest among all major cities (ranked fourth in China) and the housing affordability issue in the city is serious (ranked eighth most unaffordable housing market in China),²⁹ as well as the huge population base of new urban citizens that can be expected each year, there is potential sustainable demand for affordable housing units in the city of Nanjing.

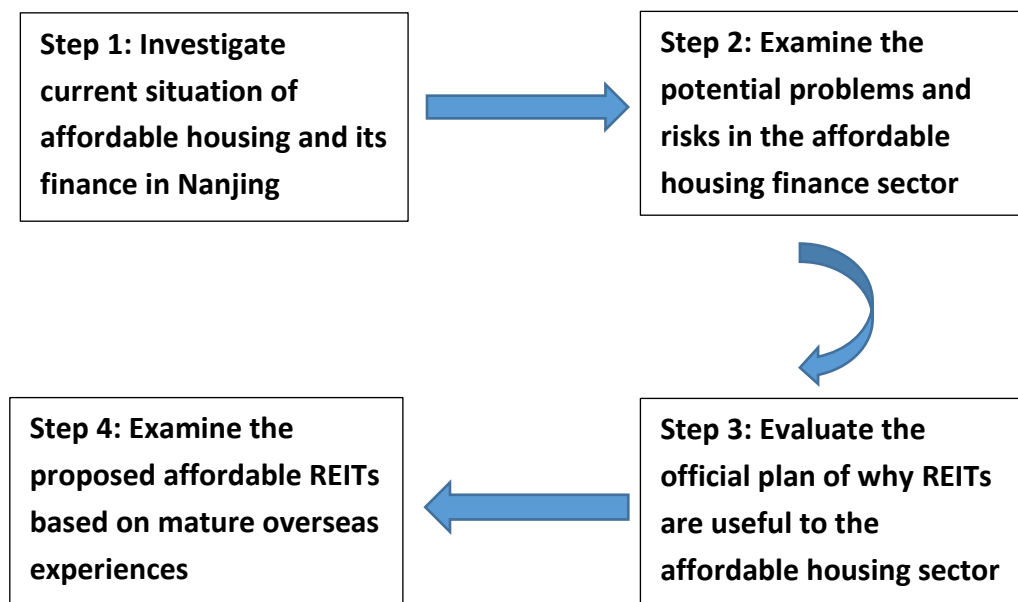
²⁹ See Table 2.1.

All these facts suggest that Nanjing is a suitable study area for this research project, and that the city is an appropriate environment to create the proposed affordable housing REIT.

4.3.3 Research Questions

Based on the conceptual model and initial objectives proposed above, as well as the choice of Nanjing as the case study city, the roadmap of this research project can finally be classified into four steps, shown in Figure 4.6 below.

Figure 4.6: Roadmap of the Research Project



Source: Developed by the researcher, 2015.

The linear process above provides a general structure that organises the whole research process. In general, this thesis now focuses on the situation of affordable housing in Jiangsu Province and its capital city of Nanjing specifically. The conclusion of this research is based on the four steps above being completed and on the data collected from the proposed fieldwork.

Following this process, to achieve the aforementioned objectives, the first question is:

Q1: How is affordable housing financed in Nanjing, what are the current problems in the affordable housing finance system, and why might REITs be useful?

Following the identification of the affordable housing situation in Nanjing, which represents the background of the whole study, the second question is:

Q2: If REITs are useful and need to be established in China, what insights can be learned from overseas affordable housing REITs?

To address this question, this study refers to the well-established international affordable-housing-related REITs, namely REITs in Hong Kong and the US (refer to Section 3.5.2). The thesis investigates how they work to finance, develop, and preserve affordable housing units and their effects on the affordable housing system and even the whole society.

Since the researcher has data regarding affordable housing finance in Nanjing and related data from Hong Kong and the US, it is then possible to estimate the likelihood of establishing a REIT vehicle in Nanjing. Therefore, the third question is:

Q3: Based on HK and US models and experiences, how can an affordable housing REIT be established in Nanjing, and what barriers currently prevent Chinese REITs or C-REITs from being created in the affordable housing sector?

In general, the overall aim and objectives of this research project are addressed in the three questions above. This study is expected to be of high significance, as it is the most comprehensive and up-to-date study in the area of affordable housing REITs in China by incorporating and addressing the three questions above.

4.4 Research Design

The above section demonstrated why the city of Nanjing was chosen as the research area and how the research questions were derived. Next, this section presents the research design and the ontological and epistemological standpoints of this study.

4.4.1 The Third Alternative – Pragmatism

Bryman (2004) identifies a paradigm as a cluster of beliefs and dictates that, for scientists in a particular discipline, influence what should be studied, how research should be done, and how results should be interpreted. In social sciences, paradigms have traditionally fallen into two camps, namely ‘positivism’ and ‘interpretivism’ (Clarke, 2009; Walle, 1997; Weber, 2004). Thus, the ontological position taken by a researcher is normally either positivism or interpretivism. In positivism, the belief is that a single objective reality can be applied to any research situation, and positivism researchers use a consistently rational and logical approach to seek objectivity or to test real-world events (Hudson and Ozanne, 1988). Conversely, in interpretivism reality is multiple and relative, and which of these multiple realities applies depends on other systems of meanings (Hudson and Ozanne, 1988; Lincoln and Guba, 1985). The goal of an interpretivist study is to understand and interpret the meaning of those multiple and relative realities through human behaviour (Neuman, 2000).

Among the two research philosophies, the standpoint of positivism is considered to be inappropriate to answer the above research questions. Carson et al. (2001) note that all variables in a positivist study can be measured, so statistical and mathematical techniques are central to this type of research to study the objective reality. By adopting this philosophical stance, researchers prefer ‘working with an observable social reality’, and ‘the end product of such research can be law-like generalisations similar to those produced by the physical and natural scientists’ (Remenyi et al., 1998). This mode of study should be useful to conduct research on affordable housing in Nanjing from a statistical perspective to obtain hard, secure, and objective knowledge. However, this standpoint cannot help in answering the ‘how’ and ‘why’ questions proposed above, which are central to this research.

Researchers may be critical of the positivist tradition and argue that the social world is far too complex to lend itself to theorising by definite ‘laws’ in the same way as physical studies do.

Thus, the paradigm of interpretivism is needed for researchers to understand the differences between humans as social actors (Saunders et al., 2015). However, interpretivism also seems to be unsuitable for the present research. Regarding interpretive studies, Alfred Schutz (1976) and Max Weber (1978) make the following central claim: social sciences must adapt ‘the postulate of subjective interpretation’ because it guarantees that social reality will not be replaced by a nonexistent world that is merely constructed by the scientist. In other words, understanding humans’ subjective meanings in studied topics is essential to interpretivist research. Silverman (1970) states that social science has an internal logic that can be understood by sociologists using interpretivist research, while a natural scientist imposes an external logic on his data generated from positivist research. Therefore, an interpretivist study would be useful to understand how people themselves view affordable housing in Nanjing, for instance examining tenants’ living experiences to acquire perceived knowledge. However, again, this is not helpful to address the above questions, such as how affordable housing is financed in Nanjing, why REITs might be useful, and how to set up a REIT in the city.

However, Wicks and Freeman (1998) argue that pragmatism should be the third alternative along with the two well-established paradigms described above. Pragmatism as a research paradigm has emerged through the writings of Peirce, James, Dewey, and Mead (Goldkuhl, 2012). At the beginning of the 20th century, pragmatism was one of the most influential philosophies in America; it influenced the study of law, education, political and social theory, art, and science (Tartakow, 2012). Therefore, the paradigm of pragmatism in most contexts has been called American pragmatism, although the pragmatic thinking clearly resembles European and East Asian philosophies (Arens, 1994; Shusterman, 2004). Pragmatism is not easily defined, as it is a term that covers a range of philosophical standpoints. In fact, Biesta et al. (2003) suggest that now pragmatists not only cover a wide range of different philosophical topics – from logic, methodology, and metaphysics to ethics and politics – but there are also differences among their ideas, as there is no single pragmatism, but many. However, Tartakow (2012, p. 2) argues that the pragmatic research philosophy generally encompasses six fundamental propositions. In this vein, the six hypotheses and methodologies of pragmatism are the following:

1. *Idealism and evolutionary theory, emphasising the 'plastic' nature of reality and the practical function of knowledge as an instrument for adapting reality and controlling it.*
2. *Critical empiricism, highlighting the priority of actual experience over fixed principles and a priori reasoning in critical investigation.*
3. *Experimental or practical consequences, resulting from the use, application, or entertainment of a notion.*
4. *The process of verification, underscoring a proposition or the successful working of an idea. Crudely, truth is 'what works'.*
5. *The functional character of ideas and behaviours, interpreting ideas as instruments and plans of action.*
6. *The formation of concepts, hypotheses, theories, and justification, accentuating reality motivated and justified by efficacy and utility in serving interests and needs critical to maximum usefulness and purpose.*

Based on this philosophy, McDermid (2006) explains that a pragmatic knowledge claim is a philosophical movement that includes those who claim that an ideology or proposition is true if it works satisfactorily, that the meaning of a proposition is to be found in the practical consequences of accepting it, and that unpractical ideas are to be rejected. Furthermore, Creswell (2013) states that a pragmatic knowledge claim comes from actions, situations, and consequences rather than antecedent conditions. For a pragmatic knowledge claim, the problem is the most important instead of methods, and researchers use all available approaches to understand that problem. Hence, the central concern is 'what works' and solutions to problems (ibid.). Similarly, Tartakow (2012) also suggests that instead of concentrating on the methodology, the important concern of pragmatic researchers is the problem being studied and the questions asked about that problem. Pansiri (2005) notes that pragmatism embraces the two extremes espoused by positivism and those supported by interpretivists. As a result, pragmatism rejects the forced choice between positivism and interpretivism in terms of methods, logic, and epistemology, but allows researchers the freedom to choose the methods, techniques, and procedures to meet their needs and purposes and thus best produce desired outcomes (ibid.). Thus, in this research project, regardless of the questions of what, why, and how, and regardless of research methods, the most important aim is to solve the problems, and to find the solutions by employing the idea of pragmatism.

All in all, pragmatism is a highly reality-driven research paradigm with the purpose of finding solutions to real-world problems. According to Dewey (1931), the foundation of pragmatism is in a realistic stance towards the external world. Goldkuhl (2012) further explains that having such a foundation is because the core of pragmatist ontology is action and change. In line with this statement, Blumer (1969) suggests that any social structure is meaningless without actions, and that ‘a society must be seen and grasped in terms of action that comprises it’. Dewey (1931) adds that for pragmatic research, action is not the ultimate goal but instead serves as an intermediary. In other words, action is the way to make changes in the real world. Glasgow (2013) proposes the similar view that the heart of pragmatic research is to produce results to make decisions and take action, whereas the overall goal is to make changes and improvements in terms of research, practice, and policy. In the present thesis, the ontological standpoint of pragmatism is highly appropriate, as the focus is on problems relevant to making decisions, taking action, and finally making changes to the current pattern of affordable housing finance in China.

In addition, Dewey’s (1931) concept of inquiry is essential to the application of a pragmatic research. He defines an inquiry ‘as the controlled and directed transformation of an indeterminate situation into one that is so determine in its constituents, distinctions and relations as to convert the elements of original situation into a unified whole’. Specifically, as indicated by Cronen (2001), an inquiry of the pragmatist study is an investigation into part of the reality with the purpose of creating knowledge in the hope of change and improvement. Therefore, it can be stated that regarding epistemological orientations, the key characteristic of pragmatism is ‘constructive knowledge’ and the knowledge here should be useful for action and change (Goldkuhl, 2012). Based on this explanation, it is believed that the epistemological standpoint of pragmatism is suitable for the present study as well, since the aim is to address the above research questions by presenting new knowledge to the academic world, and to contribute to future policy action and changes.

Moreover, the idea of pragmatism emphasises social harmony and makes social life better as the major focus for inquiry (Pansiri, 2005; Rorty, 1999). This is in line with the nature of this research project, which addresses the problems in the affordable housing sector and thus improves China’s housing provision chain, primarily benefitting low-income households.

However, there is an absence of research on affordable housing finance studies based on this paradigm, which could be a gap in the literature with regard to research paradigms.

All in all, the paradigm of pragmatism is considered to be suitable for this thesis, because new knowledge regarding the housing provision chain in China can be generated by answering the proposed questions. It is also hoped that the new knowledge generated from this research can be useful and relevant to stakeholders, and that it can also lead to action and changes to real-world events in terms of research, practice, and policy. Besides, this thesis also aims to create an agenda for pragmatic research in affordable housing finance studies, which is currently missing. See the table below for a summary of the ontological and epistemological standpoints of this research.

Table 4.5: Ontological and Epistemological Standpoints of This Research

	Pragmatism
Ontological Focus	Real-world problems oriented for action and change
Epistemology	Create new knowledge
Role of Knowledge	Useful for action

Source: Goldkuhl, 2012; modified by the researcher, 2015.

4.4.2 Qualitative Case Studies

Creswell (2013) states that pragmatists link their choice of approach directly to the purpose and nature of the research questions posed. Supporting this, Darlington and Scott (2002) note that in reality, a great number of decisions regarding whether to take a quantitative or quantitative research approach are based not on philosophical commitment but on the belief of a design and methodology being best suited to a purpose. Thus, based on the questions posed on this research, and also considering the ontological and epistemological standpoints of addressing real-world problems as the first priority, a qualitative case study is the most suitable method of inquiry into the affordable housing REIT initiative in China.

The following are the reasons for choosing a qualitative study in this thesis:

- **The research questions are open-ended**

Patton (1990) suggests that open-ended research questions can be viewed as one of the core disciplines of qualitative research. Accordingly, Sofaer (1999) indicates that quantitative research questions are normally close-ended; in other words, there are specified response options to those questions. In the present study, questions are open-ended as their answers could be difficult to measure but provide free space for exploration.

- **The questions concern meaning, not numbers**

Strauss and Corbin (1998) state that qualitative research is useful to understand the meaning or nature of experiences regarding research problems. Meaning of experiences is also the central aspect that distinguishes a qualitative research project (Braun and Clarke, 2013). In the present study, the proposed questions are helpful to gain an understanding of *what, how, and why*, which cannot be quantified. Thus, this study does not test hypotheses with numbers, but instead focuses on understanding the meaning of current affairs in affordable housing finance in China.

- **The questions are exploratory to gain new knowledge**

Stern (1980) argues that qualitative research is helpful to explore substantive areas about which little is known. In other words, when a topic is not well-defined, qualitative research should be employed. The aim of the present study is to generate new knowledge on affordable housing finance in China for the academic world using the proposed research questions. Therefore, qualitative research is the most suitable methodology.

All in all, this study is a qualitative one because the questions are open-ended, meaning-oriented, and exploratory. Furthermore, it is expected that in-depth, detailed, and rigorous answers can be generated and finally to make claims to address the current knowledge gap.

Moreover, a case study research method seems appropriate for this research project since it is a qualitative study. Before explaining this decision, it may be helpful to define ‘case studies’. According to Zainal (2007), case studies can provide researchers with an approach to closely examine an issue within specific contexts, for the purpose of exploring and investigating contemporary and real-life phenomena by detailed analysis in a certain geographical area or

among a limited number of individuals. According to Yin (2009), a case study is particularly useful when ‘how’ and ‘why’ questions are asked, as is the case in this study.

The reason for choosing the case study method in this research is straightforward, especially as the study focuses on Nanjing in China and draws inferences from other countries and regions. Yin (2009) and Stake (1995) suggest that the following three essential principles determine whether a case study method is suitable for a research project: the research is conducted within bounded areas; the research is contemporary; and the research is carried out within a set time frame. The present study concerns several specific areas including Nanjing and Hong Kong in China, and Washington, DC and New York City in the US, since a general study was not appropriate or possible, as previously explained. Furthermore, the aim is to address the contemporary problems of the affordable housing sector in China. Therefore, the problems examined in this research are current, so that no answers to them can be found in the academic world. This also makes this project a real solution. Finally, the fieldwork was conducted over a 15-month period, until late September 2017. Thus, it can be stated that the case study method applies to this research project in a reasonable and necessary way. However, Yin (2009) states that there are different types of case studies and different approaches to conduct them. Therefore, the following outlines details regarding what the case should be along with guiding principles.

According to Yin (2009), there are three different types of case studies: exploratory, descriptive, and explanatory. First, exploratory case studies are used to explore any phenomenon that serves as a point of interest for the researcher as a preliminary investigation before further studies (Zainal, 2007). Second, descriptive case studies aim to describe the issue or natural phenomenon of concern in the research question (ibid.). Third, explanatory case studies tend to examine a phenomenon at both the surface and deep levels to explain how and why the phenomenon has occurred (ibid.).

Based on this category, Stake (1995) and Yin (2009) further suggest that there are several approaches to conduct case studies: intrinsic, instrumental, and collective. Intrinsic research focuses on understanding the particulars of a case, whereas instrumental research aims to provide insights into a particular issue with the purpose of understanding something more

general or building theory (Stake, 1995). Collective case study research is slightly different, as it involves more than one case in a study (Yin, 2009).

The present study was designed to examine the possibility of establishing affordable housing REITs in China and the underlying reasons for the government to do so. Although this research certainly contains exploratory and descriptive elements, it is best described as an explanatory case study. This is because the study not only focuses on exploring and describing the real facts of current affordable housing finance in China, but also tries to determine why the current phenomenon in the affordable housing sector has occurred. Moreover, it appears that a collective case study is the most suitable approach to conduct this explanatory research. This choice is also based on the research questions proposed above. At present, there are no affordable housing REITs or even actual REIT vehicles in operation in mainland China, so the current existing affordable housing REITs in Hong Kong and the US are the only available cases that can be studied as overseas experiences to address the questions in this study. Therefore, multiple case studies in Nanjing, Hong Kong, and the US must be combined to answer the research questions.

All in all, this thesis presents a *qualitative explanatory collective case study*, and the method used is based on the nature of the proposed research questions. It is believed that the evidence from a collective case study tends to be more compelling and to make the overall study more robust (Herriott and Firestone, 1983). However, Yin (2009) indicates that conducting a collective case study requires extensive time and resources beyond the means of a single researcher. Accordingly, data collection was not an easy task in the present study. Therefore, the following specific research strategies and tools were designed.

4.4.3 Stages of Preparation for Data Collection

Having settled on a qualitative explanatory collective case study approach, this project aims to address the questions proposed above based on the context of Nanjing. Due to the project's complexity, three stages were completed before data collection and analysis.

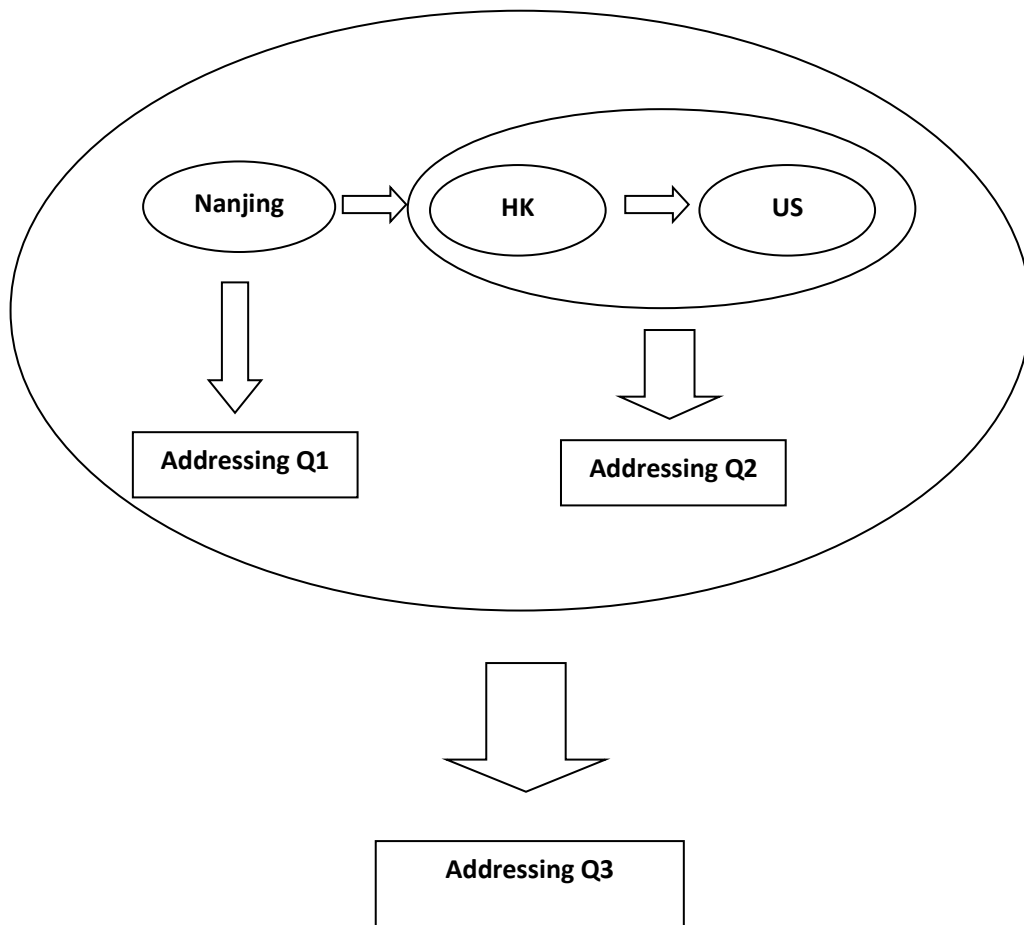
Stage 1: Early-Stage Preparations

The target cases seemed to be clear. However, experiences from the initial fieldwork in mainland China suggested that access to data might not be easy.³⁰ Furthermore, different stakeholders would be involved in the different case studies. In Nanjing, the case study focused on the financing details of the affordable housing sector, whereas in Hong Kong and the US the studies specifically concerned selected affordable housing REITs. Therefore, sufficient early-stage preparations were required for this multiple case study. To this end, the researcher used all available resources and local connections in Nanjing to initially approach stakeholders. In the meantime, the researcher contacted the Department of Real Estate and Construction of the University of Hong Kong for assistance in conducting the case study in Hong Kong, and obtained a positive response by being offered an office with all necessary office supplies and library access for three months. Finally, the researcher planned to go to Washington, DC to attend the Asian Real Estate Society Annual Conference in 2015, and take this opportunity to conduct the US case studies, specifically in Washington, DC and New York City. Additional help and contacts were provided via the American Real Estate Society.

The whole preparation process is shown in Figure 4.7. Based on this sequence, the case study in Nanjing would be used to answer research question 1, while the case studies in Hong Kong and the US would be helpful to address question 2. Finally, the three cases would be mixed and examined together to answer question 3, and ultimately achieve the aim of this project.

³⁰ Refer to *Access to Data* in Section 4.3.2.

Figure 4.7: Preparation Process of the Research Project



Source: Developed by the researcher, 2015.

Stage 2: Sampling

Once the road map and sequence in which to conduct the case studies were confirmed (Nanjing – HK – US), it was important to choose the stakeholders for each case. In other words, the sampling process of this study was of significance.

- **Nanjing**

As previously mentioned, the case study in Nanjing concerned confidential affordable housing finance details. Therefore, the researcher used local connections to approach key persons in the affordable housing sector of Nanjing City and Jiangsu Province, as well as an authoritative source in Beijing. It was believed that random sampling would not work for this case study but the purposeful sampling to identify specific targets was required. As mentioned above, this was because the related and particular government sectors or bodies held all the affordable housing finance details, and these were unavailable to the public. In other words, the information required for this research could not be obtained anywhere other than the specific authorities and agencies active in the Nanjing affordable housing market. Based on this consideration, the following four stakeholders were finally selected for the case study in Nanjing.

- **China Real Estate Association**



The researcher believed that it would be helpful to investigate the questions from top to the bottom, or from the general to the specific. In this context, this meant from the national level to Jiangsu Province and finally to Nanjing City. Therefore, a national organisation was important to this study as a data source to understand the basic situation of affordable housing and its finance in the whole country. The researcher contacted the MOHURD at the very beginning of the fieldwork to ask for the national facts, but this request was rejected. However, the researcher an appropriate alternative was found, namely the China Real Estate Association (CREA). Founded in 1985, CREA is the national real estate industry organisation in China, supervised by the MOHURD (CREA, 2016). CREA has strong ties to the government, as its current president Liu Zhifeng is a former Vice Minister of the MOHURD (Xinhua Net, 2016b). Hence, it was expected that the CREA would serve as a resource library but with fewer government restrictions.

- **Department of Housing and Urban-Rural Development of Jiangsu Province**

江苏省住房和城乡建设厅

According to the official website of the Department of Housing and Urban-Rural Development (DOHURD) of Jiangsu, one major responsibility of the department is to ensure the housing needs of low-income families in the province (DOHURDJS, 2017). This job includes developing and implementing affordable housing plans and policies, setting up construction fund arrangements, and providing guidance and supervision in the implementation of the municipal governments, including the capital of Nanjing (ibid.).

- **Nanjing Housing Security and Real Estate Management Bureau**



An official document of the Bureau clearly states that the two primary responsibilities of its administration are managing and regulating the real estate market of Nanjing, and building and managing affordable housing as well as promoting the shantytown redevelopment in the city (NJHSREMB, 2017).

- **Nanjing Anju³¹ Affordable Housing Construction Co Ltd**



In 2012, to comply with the national affordable housing target in the 12th five-year plan period, Nanjing municipal government set up a platform, namely a state-owned company on the bureau-level, to carry out the actual and specific work of constructing affordable housing projects and all related infrastructure and supporting facilities nearby (Xinhua Net, 2015). This government agency is the 'Nanjing Anju Affordable Housing Company'.

The researcher believed that the four organisations above – one national industry association, two governmental departments (bureaus), one state-owned company – would have all the

³¹ 'Anju' or '安居' means peaceful living in English.

information required to conduct the case study in Nanjing. Thus, the researcher expected to address how affordable housing is financed in Chinese major cities, what the problems are, and why REITs might be considered useful by the government.

- **Hong Kong**

The ‘Link’ REIT in Hong Kong is now the largest REIT in Asia by market capitalisation. It holds public assets formerly owned by Hong Kong Housing Authority (HKHA) including shopping malls, retail shops, and car parking spaces. Thus, the case study in Hong Kong would mainly concern this well-established public REIT. After conducting initial background research in Hong Kong, several key stakeholders related to Link REIT were selected for this case study.

- **Link Real Estate Investment Trust**



Link REIT was created by the Hong Kong government (specifically the Hong Kong Housing Authority) to solve the financial problem of building new affordable housing projects. The motivation for establishing this REIT was the same as that of the mainland government. Therefore, the study of this REIT itself, including its history, performance, and social effects, is an important case study in Hong Kong.

- **Hong Kong Housing Authority**



The HKHA was established under the British Hong Kong Government in 1973 as a statutory organisation (HKHA, 2017). Its current responsibility is to develop public rental housing plans and policies, and to build, manage, and maintain public rental housing units in Hong

Kong (ibid.). Today, more than 2 million Hong Kong citizens, accounting for more than 30% of the city's entire population, live in around 740,000 rental units managed by the HKHA (ibid.). For the case study of Hong Kong, the inquiry of the HKHA was the most significant as this authority dominated the creation of the first REIT in Hong Kong, namely the Link.

- **Legislative Council of Hong Kong SAR**



The Legislative Council of Hong Kong (LCHK) is a highly important stakeholder in this case study. During the period of Link's first IPO between late 2004 and 2005, opposition existed. On 1 June, 2005, a motion was proposed in the Legislative Council to stop the public offering of the Link REIT, as many members of the Legislative Council believed that the interests of the citizens at the grass-roots level would be adversely affected (see Appendix A). However, this motion eventually was not passed, enabling Link REIT to be successfully listed on the Hong Kong Stock Exchange on 25 November, 2005 (J.B. Huang, 2012). It can be stated that the conflict between the HKHA and the Legislative Council members implied a potential conflict between the government and the public. Furthermore, the creation of the Link REIT was not smooth at the start, suggesting that the story of Link is worth examining.

- **The Hong Kong Council of Social Service**



The voices against Link REIT in Hong Kong have never disappeared, even more than 10 years later (The Link Watch, 2015). So it was judged necessary to investigate the views of Hong Kong citizens, especially the social renters who rent housing from the estates jointly owned by the Link. Given the researcher's personal resource availability, extensive interviews with individuals would be difficult to conduct. Thus, it was believed that an organisation that could represent social renters' common interests would be ideal and

convenient for the study in Hong Kong. Finally, the Hong Kong Council of Social Service (HKCSS) was selected due to its influence and representativeness in the city.

The HKCSS was founded in 1947 with the purpose of planning, assisting, and coordinating massive social relief works for Hong Kong society after World War II (HKCSS, 2017). Since the 1970s, HKCSS has become one of the most important NGOs in terms of social services in Hong Kong (ibid.). Its major social focus includes social welfare, housing, and urban regeneration, among others (ibid.). Hence, the researcher believed that including HKCSS, which represents a large group of social renters' interests and voices, could be helpful to understand why Link has been opposed by many people since it was first created.

The researcher believed that including all stakeholders above, including the Link REIT, government, legislative council, and NGO representing social renters, would be a comprehensive sample for the study of the Link in Hong Kong. In this way, it would be possible to determine whether the creation of Link actually solved the financial problem of the HKHA, and why the creation of Link had a heavy social cost and such a series of problems. The Hong Kong case could be valuable to provide insights to the proposed affordable housing REITs in mainland cities such as Nanjing as it offered a useful 'role model'.

• The United States

As mentioned before, Link REIT in Hong Kong is not a real affordable housing REIT but holds former public housing assets. Furthermore, the Civitas Social Housing REIT can be ignored as it was just launched recently and has only been listed on the London Stock Exchange for a few months, making it too soon to draw any conclusions on its success. Therefore, the only well-established affordable housing REITs are in the US. After intensive searching, it was clear that among thousands of REITs in the US, only two are mature affordable housing REITs: the Community Development Trust (CDT) and the Housing Partnership Equity Trust (HPET). Therefore, the case study in the US focused on these two REITs and related stakeholders.

- **The United States Department of Housing and Urban Development**



The US Department of Housing and Urban Development, commonly known as HUD, oversees home ownership, low-income rental housing, and purchase assistance, as well as issues related to housing affordability to support community development and home ownership in the country (HUD, 2017a). Therefore, the researcher expected that HUD could provide some information with regard to the effects and contributions of affordable housing REITs in the US and the government's opinions on those affordable housing REITs to gain a general overview before focusing on specific REITs.

- **National Association of Real Estate Investment Trusts**



The National Association of Real Estate Investment Trusts (Nareit) in the US is a global representative voice for REITs and public real estate companies who have interests in the US real estate market (Nareit, 2017b). Nareit deems itself to be the voice of the REIT industry in Washington, where it can educate and inform policy-makers in Congress and federal agencies regarding every aspect of the industry (ibid.). Thus, the researcher believed that information from Nareit could be of importance to this research in terms of the REIT industry, and especially affordable housing REITs and the association's views on the creation of REITs in another economic superpower, namely China.

- **Community Development Trust**



As described previously, the CDT is the first and largest REIT by market capitalisation in the US to facilitate the development and preservation of affordable housing (OFN, 2017). The value of its debt and equity investments is more than US\$1.1 billion, containing 409 financed properties and 36,237 self-owned affordable units (ibid.). CDT's office is in New York City.

- **Housing Partnership Equity Trust**



Compared to the CDT, the HPET is a newer and junior affordable housing REIT headquartered in Washington DC. Its portfolio now includes nearly 2,800 affordable units valued at around US\$260 million (Borchersen-Keto, 2016). HPET's goal is to have 12,000 units by 2020 with an estimated worth of more than US\$1 billion (ibid.).

It was expected that HUD and Nareit would provide this study with a general overview and appropriate background of the US housing market and the REIT industry. Furthermore, CDT in New York City and HPET in Washington, DC could represent valuable in-depth cases for the study in the US, as they could be the only actual and mature affordable housing REITs in the world to study as references to propose similar REITs in China.

Stage 3: Interviewee Recruitment

Having confirmed the stakeholders for each case study, the next step was to identify key persons or interviewees within the organisations who had the information required for this research, and who would be willing to share that information. This process was challenging.

During the visits to those organisations, the researcher found that two principles had to be followed to identify interviewees: one was reaching and meeting with decision-makers, and the other was using snowballing techniques.

Regarding the first principle, talking to decision-makers was essential. This is because most stakeholders, especially in mainland China and Hong Kong, deemed the topic of this research sensitive. The result was that lower-level officials in an organisation either did not have the information, or if they have it they were afraid to give it to outsiders, even if for research purposes only. Thus, speaking to people who had the data and the authority and were willing to pass it to the researcher was the key.

For example, when the researcher made a request to interview HKHA members concerning Link REIT and affordable housing finance in Hong Kong using their public contact details including email addresses and phone numbers, HKHA refused directly by stating that HKHA members were not available for interviews. The researcher believed that this request was automatically rejected by general staff of the Housing Authority without consultation with the proposed interviewees, so an alternative way had to be found. HKHA's official website shows that HKHA has one Chairman, one Vice-Chairman, and 29 members, all of whom are appointed by the Chief Executive of the Hong Kong SAR (HKHA, 2017). The researcher investigated and found all available contacts of those members who were decision-makers online (not all but part of members' contact details were available), and then emailed and phoned them individually. Finally, two HKHA members agreed to be interviewed; one changed his mind at the last minute while the other was interviewed successfully and smoothly: a highly important decision-maker in the finance area of the affordable housing sector of Hong Kong. Similar events occurred everywhere throughout this research project including mainland China, Hong Kong, and the US. The researcher had to speak to the decision-makers directly, not just to ensure the authoritativeness of the data, but more importantly because only decision-makers were willing to talk and share the data.

Secondly, snowballing was of great use for the fieldwork. Atkinson and Flint (2001) define snowballing as a technique to find suitable research subjects, where one subject gives the name and contact details of another subject, who provides the name and contact information of the third subject, and so on. They especially indicate that snowballing is useful for access

to a previously rare and hidden population that is not easily reached by the public (ibid.). In this study, this included various high-ranking government, organisation, and company officials. On the other hand, however, Atkinson and Flint (2001) also indicate that one major problem with the snowballing technique is that subjects are not randomly drawn so that possible bias may limit the validity of the sampling population. Nevertheless, in the present study random sampling was not suitable, since specific elite targets were required. Therefore, that snowball sampling was appropriate for this research.

For instance, to conduct the case study in Nanjing, the researcher contacted a senior official of the CREA in Beijing as an initial respondent through his personal network. This individual is also a former official of Nanjing Housing Security and Real Estate Management Bureau. This interviewee not only provided a great deal of valuable information for this research, but also acted as a breakthrough by providing key contacts in the housing authorities of Jiangsu Province and Nanjing City for interviews. The same situation occurred in the US. The researcher sent several emails to different officials of CDT in New York, but received no replies. However, an interviewee in Washington, DC helped by calling the CEO of CDT directly to arrange a personal meeting in New York the following week.

Through intensive visits and networking based on the two aforementioned principles, the following interviewees were confirmed.

Table 4.6: Confirmed Interviewees

Interviewees	Roles	Location
Mr. A	Senior Official of the China Real Estate Association (CREA)	Beijing
Mr. B	Senior Official of the Department of Housing and Urban-Rural Development of Jiangsu (DOHURDJS)	Nanjing
Mr. C	Senior Official of the Nanjing Housing Security and Real Estate Management Bureau (NJHSREMB)	Nanjing
Mr. D	Senior Official of Anju	Nanjing
Mr. E	Financial Official of Anju	Nanjing
Miss. F	Leasing Unit Official of Anju	Nanjing
Mr. G	Member of the Legislative Council of Hong Kong	Hong Kong
Mr. H	Member of the Hong Kong Housing Authority (HKHA)	Hong Kong
Mr. I	Representative of the Hong Kong Council of Social Service (HKCSS)	Hong Kong
Mr. J	Senior Official, Research and Investor Outreach of the National Association of Real Estate Investment Trusts (Nareit)	Washington DC
Mr. K	Senior Official of the National Housing Trust (NHT)	Washington DC
Mr. L	Senior Official of the Community Development Trust (CDT)	New York City

Source: Summarised by the researcher, 2016.

It must be stated here that two organisations, namely Link REIT in Hong Kong and HUD in Washington DC, refused to give interviews or to participate in the study without giving a reason. The researcher tried all available means (including email, phone, walk-ins, and local connections) to approach these organisations attempting to find interviewees, but there were no responses at all. Therefore, the researcher had to give up on these two organisations. However, it is believed that the data collected from the fieldwork was sufficient to compensate for these missing interviewees.

4.4.4 Data Collection

Based on the list of confirmed interviewees, data was collected through semi-structured in-depth interviews and document reviews. The interviews were conducted on a one-to-one and face-to-face basis. Each lasted at least one hour, and the longest interview lasted more than three hours. Furthermore, the internal government documents accessed through the interviewees in China were reviewed as a supplement to the interviews. More details are presented in the following.

4.4.4.1 Elite Interviews

Yin (2003) states that the interview is one of the most important and useful sources of case study information. There are three different types of interviews: open-ended interviews (non-structured interviews), focused interviews, and surveys. In this study, as previously mentioned, the type of interview used was semi-structured. This form is between non-structured and focused interviews, and mainly uses open-ended questions. It is also worth noting that the interviewees were all key persons in their organisations, and not just average members of their groups. It can be stated that only one or very few persons could fill such roles, so their interviews by definition are called ‘elite interviews’ (Yin, 2012).

Harvey (2011) stresses that the trust between interviewer and interviewee is crucial in elite interviews to gain high-quality data. This trust needs to be built overtime, and researchers should try to build a rapport with elite interviewees the first time they contact them and even following the interview itself (Ostrander, 1993). To this end, before the interviews, the researcher prepared well to understand the interviewees’ backgrounds and to be as transparent as possible by providing all related personal information, research details, interview purpose, and how the data would be used. Zuckerman (1972) suggests that during interviews, researchers must show they have done their homework prior to the meeting as elite interviewees will consciously challenge researchers on the subject being discussed. In the present study, the researcher often found that the interviewees assessed the research questions and then posed many questions back the researcher. It seemed that the presidents, councillors, chairs, and CEOs wanted the interview to be a dialogue rather than ‘questions and answers’. Hence, sufficient preparations, deep understandings and views about the industry, and good knowledge of international and local political and economic situations

were the key to make a favourable impression, gain the interviewees' respect, and to obtain high-quality data.

According to Yin (2003), during interviews, researchers have two jobs to do: one is to follow the established line of inquiry designed for the case study, and the second is to ask 'friendly' and 'nonthreatening' questions. This is not easy. For example, the major purpose of the case study in Nanjing was to obtain affordable housing finance data, but it was clear that it was not appropriate to directly ask the high-ranking housing official, 'can you give me the affordable housing finance details please?'.

Harvey (2001) proposes a strategy to solve this potential problem of conducting elite interviews: asking interviewees about the facts of a matter and their own insights first, as elites would especially like to express their views and explain how and why they think what they think. After that, close-ended questions can follow regarding specific data. Yin (2003) also suggests that a great degree of freedom should be given to an elite interviewee; he or she should be allowed to talk within a great range rather than focusing on specific questions. In this vein, the interviewee could be considered as an 'informant' rather than a normal respondent. It is helpful for elites to construct reality and think about situations, and not just provide answers related to the case studies (Yin, 2012). During the fieldwork, the researcher followed this approach by keeping the major topics (see Appendix B) in each interview but giving the elite interviewees free space to talk. The result was highly positive. Several transformations of normal 'interviewees' to 'informants' were crucial to the completion of the fieldwork in this study.

After each interview, Yeung (1995) suggests that exchanging business cards is highly useful to reduce the power gap between the researcher and the respondent, particularly for junior researchers. In this research project, the researcher not only exchanged business cards, but also sent follow-up emails and cards to express thanks to every interviewee to establish a good relationship. The direct result was that when the researcher conducted follow-up fieldwork several months after the main study, initial interviewees were very helpful in supplying and updating information.

4.4.4.2 Document Review

Document review is a way of collecting data by reviewing existing documents, and it relates to nearly every case study topic (Yin, 2003). Yin (2003) indicates that the most important use of documents is to corroborate the evidence collected from other sources. In this research, the documents available for reviewing were 18 internal government documents collected from the fieldwork through back channels. They were used to support the evidence gathered from the interviews.

They were a useful source of background information and provided a behind-the-scenes look at the issue of affordable housing finance in Nanjing.

4.4.5 Data Analysis

The data collected during the fieldwork amounted to more than 30 hours of recorded materials, and more than 60 pages of field notes. The recordings from the fieldwork were translated (if non-English) and transcribed by the researcher, and the transcriptions were gathered together in the qualitative data analysis software called NVivo. Gibbs (2002) suggests that NVivo offers a structured storehouse for qualitative data and is helpful to create themes from large data sets, such as the data generated from this research project. This study aims to solve problems by creating new knowledge; thus, an inductive approach was used to analyse data, from studying specific events to generating theory that can be widely applied in the field of Chinese housing studies. To this end, NVivo was helpful to initially identify the themes in the massive data set. Afterwards, analysis was conducted by searching the themes for patterns and associations for inherent linkages. Finally, categories were developed from the responses of the interviewees and government data, and these were used to help address the research questions.

In the first stage, the seven themes reflected the major topics in each interview. The first three centred on the past and current housing policies of China, the current situations and potential problems of affordable housing finance in the country, and the reasons behind creating REITs from the affordable housing sector. The second three centred on the contexts of Hong Kong and the US in terms of the affordable housing sector, the motivation behind creating REITs for the sector, and the insights gained from those REITs that could be useful to the proposed REITs in mainland China. The final theme concerned the potential barriers to the creation of

REITs in China, and whether an affordable housing REIT could be established in the country based on the experiences from Hong Kong and the US.

After NVivo identified these themes from the large data set, the researcher double-checked them by reading and re-reading each interview transcript, and sorting the data again by the themes detected in a cross-sectional analysis to confirm that they were relevant.

In the second stage, the researcher searched those themes for patterns and associations. This was because these themes were specific topics, and linkages had to be established between the major concerns that emerged from the interviews and the government data. For example, one of the terms used extensively by the interviewees was ‘slowing economy’. However, how this particular topic was linked to the proposed affordable housing REITs in China required careful and logical explanations by searching and understanding complex linkages between the various themes in the data.

In the third and final stage of the data analysis, categories were developed from the connected themes which would be used to answer the three research questions. Specifically, this involved the refinement of the specifics of each theme with the purpose of revealing and building the whole story in the most effective way, the creation of clear definitions and names for each category, and the building of the researcher’s own hypothesis and arguments based on the integrated themes. As a result, the final research findings are categorised and presented from Chapters 5 to 7. It is believed that the link between the affordable housing sector in China and REITs is built and explained in a logical and robust way, and several important and interesting questions are addressed.

4.5 Ethical Considerations

This study followed and met the ethical requirements of the University of Glasgow (refer to Appendix C). However, a serious ethical challenge was that it might involve information not available to the public. On the other hand, this could be considered as a ‘good leak’.

Hanson and Ceppos (2006) suggest that a good leak is the disclosure of information that expands public understanding of an issue of public interest without harming anyone. A leak

can also be good if it illuminates understanding of an important issue even if it harms someone, as long as the public interest at stake is significant – for example, if lives and health are at risk, if a crime such as fraud is being committed, or if public resources are being misspent (ibid.). Summers (1981) states that in Australia, some of the best leaked documents from a news perspective have been the Treasury documents on infrastructure borrowings and on economic matters. She argues that it is difficult to see why these documents were confidential in the first place and why they could not have been released officially as working papers for public discussion (ibid.). Indeed, the researcher had the same thought as Summers when first accessing the official documents and the data provided by the interviewees.

However, this thesis does not specifically argue for the role and ethics of leaks. Instead, based on the principle proposed by Hanson and Ceppos above, it can be stated that this study is a significant piece of work regarding affordable housing and its finance situations in China because of the classified data, because it updates the academic knowledge on the subject, and because it is in the public interest of the people in China. Importantly, all the interviewees have been made anonymous, and thus no one involved can be harmed.

4.6 Limitations of the Research Methods

Due to the nature of the research questions, this study involved a small number of interviews as only related stakeholders were needed. However, these stakeholders were mainly high-ranking officials or company executives, whom it could be difficult to access, and for whom it could be difficult to find alternative interviewees. As a result, the sample size in this research was small, so generalisations of the results to all Chinese cities cannot be made. Furthermore, random sampling methods were not appropriate for this research.

In addition, the method of elite interviewing was used in this research project. Some critics argue that such interviews sometimes lack validity and reliability since these interviewees usually want to ‘prove’ that something is or is not working, so their interview responses might be biased (Jupp, 2006). It also lacks the rigour of quantitative research, producing ‘soft’ data that is subjective and not easy to replicate (ibid.). Nevertheless, the elite interview method has increasingly been recognised and utilised for qualitative research. Most importantly, adequate preparations before the proposed interviews and good communication

with the interviewees ensured the effectiveness of elite interviewing in this research and enhanced the present author's confidence in the quality of the data.

Furthermore, it must be stated that the representativeness of Nanjing as a case study also has its limitations. Nanjing is one of the most advanced cities in China. Hence, it could be that the results of this research only apply to a few Chinese cities, given that most cities in the country remain relatively underdeveloped in terms of economy and social development, including the affordable housing sector, compared to Nanjing. Thus, generalisability is an issue. However, it is believed that valuable information could be generated from the case study in Nanjing as a reference for similar cities, such as Suzhou and Hangzhou.

Chapter 5: Affordable Housing Finance and the Reason to Establish Affordable Housing REITs in Major Chinese Cities

5.1 Introduction

As discussed previously, in order for REITs to have a chance to be established in China from the affordable housing sector urgently requires several important issues to be addressed by academia and industry. This includes a greater awareness of the specific context of the affordable housing sector in China, greater transparency regarding the financing details of the national government's affordable housing building, and a more thorough understanding of the underlying motivations driving the government to create REITs to support the affordable housing sector. This chapter fully investigates the findings related to these issues.

Based on the themes generated from the research data and the categories created in this research project, a complete and robust linkage between the affordable housing sector and REITs in China is established. This chapter starts with detailed reviews of historic and current affordable housing policy and practice in China. The aim is to understand the reasons behind the government failure, the plan to build 36 million units of affordable housing between 2011 and 2015, and the financial stresses associated with a building programme on this unprecedented scale. Second, the chapter investigates the actual financing details of the affordable housing sector using data collected from the case study area, Jiangsu Province and Nanjing City. This is helpful to determine how the government overcame the funding gaps postulated to exist by previous studies. Finally, the underlying motivations behind establishing affordable housing REITs in China are investigated and explained.

5.2 The Failings of Affordable Housing Policy and Practice Before the 12th Five-Year Plan Period

To investigate the affordable housing sector and the government's renewed policy goal to establish an affordable, fair, and sustainable rental housing market system by 2020, it is

necessary to begin by reviewing the history of affordable housing policies and practices in China after the housing reform. This section provides a general background before examining the current situation and what has happened in China's affordable housing sector. Section 3.2 demonstrated that the current affordable housing system was established only after the housing reform in China, and scholars such as Rosen and Ross (2000) suggest that the importance and the focus that the government placed on the affordable housing sector diminished sharply after 1998. In fact, during this study, several in-system interviewees also expressed criticism and shared their thoughts on the affordable housing sector. They too stated that the shortage of affordable housing has become a growing problem since the housing reform in 1998 and that responsibility for dealing with this serious problem rests with the government. However, for them this kind of opinion was not suitable for public expression. Regarding this issue, Mr. A, a senior official of the CREA, first combed the historic timeline and stated:

‘In fact, as early as 1998 when the housing reform was going to start, establishing an affordable housing system was clearly a big part of the reform. I remember that the initial plan was to build a dual-track housing system, one was the commodity housing market that you can see today, and the other was the affordable housing market with cheap rental housing (CRH) and economical and comfortable housing (ECH) designed and provided by the government.’ [Mr. A]

Based on this quote, and also based on Chen et al.'s (2013) statement that the government initially planned to house 80% of the urban population by ECH, one wonders why the affordable market was abandoned. Mr. A further explained:

‘Review the past, lessons and experiences were enough. To promote the housing reform at that time, also considering the limited resources, the government decided to build the ECH for the low- and middle-income families after 1998, and in the meantime suspend the construction of CRH for two years. However, the period of two years' suspension for CRH became 10 years eventually, and the supply of ECH kept decreasing. It should be mentioned that at that time the government had forgotten its responsibility to build affordable housing. They (the government) can be given merit for promoting the commodity housing market, as a complete real estate market has

now been established in the country, but in terms of affordable housing, they (the government) can be faulted as basically nothing has been done in a very long time.’
[Mr. A]

The present study identified several reasons why the affordable housing sector was excluded from the focus of the political agenda before the 12th five-year plan period. These are discussed in the following.

5.2.1 Affordable Housing Policy Deficiencies

As mentioned in Section 2.5, a government can fail when it intervenes to solve a market failure. Specifically, Dolfsma (2013) suggests that a government can fail in four ways in terms of rules it imposes on an economy: these can be too specific, too broad and even arbitrary, or they can conflict. After the housing reform in 1998, the government faced the task of establishing a modern real estate market that comprised commodity and affordable housing. When the government focused on the establishment of the commodity housing market, it did not in fact entirely ignore the affordable housing sector. However, weak and incomplete policy and guidance contributed to the failure to establish an affordable housing system in the country. Hence, following Dolfsma, the rules were *too broad*.

Mr. B, a senior official of the Department of Housing and Urban-Rural Development of Jiangsu (DOHURDJS), shared the following interpretation from a policy perspective:

‘The housing reform in 1998 was a significant breakthrough during the transfer of the market economy of China. But this reform neglected the establishment of a housing security system for the low-income group at that time, left regret. But there were some reasons. From document No.23 issued in 1998 and document No.18 issued in 2003, you can see that according to the State Council’s instructions, we were going to construct ECH and CRH to establish an affordable housing system, which was VERY clear. But these documents did not clarify any responsibilities or financial support. In other words, who was responsible and where did the money come from to build that affordable housing? The documents did not clearly point this out, so it left us feeling that it was very difficult to practise. The result was that building CRH became empty

talk, and ECH was getting out of the track of housing provision but became a tool for power rent-seeking. We clearly knew that but there were some reasons...' [Mr. B]

According to Dolfsma (2013), if government rules are formulated in broad terms without giving guidance about their interpretation, as Mr. B described above, then they are said to fail. Regarding the context in China, affordable housing was in place after 1998, including ECH and CRH, and a series of affordable housing policies made by the central government. However, there was a lack of clarity over responsibilities and financial arrangements, so the policies were difficult to enforce, which in turn discourage local governments from constructing affordable housing. This led to the stagnation in the development of the Chinese affordable housing sector for nearly 10 years.

However, attempts were made in late 2007 to address the difficulty of implementing ECH policies caused by lack of execution details, as Mr. B explained:

'The document No.24 issued in late 2007 made clear the division of housing provision work between the government and the market. In 2008, Prime Minister (PM) Wen's government work report also stressed the division of responsibilities of housing provision between the government and the market in particular. That is, middle- and high-income groups should be covered by the market, namely housed by commodity housing. The government would collect land-transferring fees through the land allocated for commodity housing for the rich, which you know is a big number. Then this money would be used to construct CRH to solve the housing problems of the poor. So the upper end relied on the market, the lower end relied on the government, and the middle end could choose to solve their housing needs from either the market or the government.' [Mr. B]

However, another problem subsequently arose regarding government failure due to rules. Following Dolfsma (2013), at this time the government failure did not concern the nature of the rules as discussed above, but had to do with the government rule-setting activity: namely, the Chinese government changed the rules *too frequently*. It can be seen that the government's focus shifted in the affordable housing sector with policy refinements around 2008, as Mr. B indicated, which could be a positive sign for the affordable housing sector in

China. However, the national affordable housing policy changed annually in the following years. Mr. B further explained:

‘In 2008, the government started to refocus on the affordable housing sector and emphasised the importance of affordable housing to the people. Also in 2008, it was basically confirmed that the main form of affordable housing included ECH and CRH. It could include CPH as well, and it extended to include PRH in 2010. However, in 2009, the central government planned to build 5.18 million units of CRH over three years’ time, but in 2010 the plan again changed to build 5.8 million units of affordable housing for the same year. But this plan was a failure.’ [Mr. B]

Desmarais-Tremblay (2015) points out that in their rule-setting capacities, governments often fail to promote their goals, and one significant failure is the inconsistency of policies. According to Mr. B, the affordable housing target of building 5.8 million units in 2010 was not achieved. It is believed that local governments may not know how to operate in an environment of inconsistent government policies (ibid.). Mr. B’s statement also supports this argument:

‘Because the policy changed every year, we actually did not know how to implement the policy on the local level. So for us, the best thing we could do...was to do nothing... As a result, the affordable housing sector in nearly every local government was incomplete, lacking financial support and enough land supply, for example. So in the end it was realised that the plan of building 5.8 million affordable units in 2010 could not be completed at all.’ [Mr. B]

Although it failed, 2010 could be recognised as the first year of the ‘great leap forward’ of the affordable housing sector in China, as it triggered the following ambitious plan of building 36 million units between 2011 and 2015 as a pilot, and this affordable housing campaign has lasted until the time of this writing, in 2017. Mr. B suggested:

‘The failure of 2010’s target let the government learn a lot and the government adjusted its target and finally made the plan of building 36 million units of affordable housing for the following five years. Also, at the start of the 12th five-year plan, I

remember in early 2011, probably in February, the PM Wen Jiabao clearly indicated that the basic housing provision for the low-income group should be covered by the government through CRH and PRH. This was great progress in the affordable housing sector, because it emphasised that the nature of affordable housing in China was for living rather than being private assets, like ECH. This was a significant policy change which would make affordable housing truly affordable for the poor, by protecting their basic housing rights rather than increasing the home ownership rate for those people that created a great space for power rent-seeking.’ [Mr. B]

5.2.2 The Misallocation of Affordable Housing Due to Short-Termism and Rent-Seeking

In addition to policy deficiencies, another important cause of the inefficient affordable housing system was the mismatch of affordable housing resources. Lavery (1996) states that a government failure can be triggered by *short-termism*: governments often focus on the short term and look for quick-fix solutions, and neglect the interests of more people in the long term. This can lead to misallocation of precious resources.

Mr. C, a senior official of the Nanjing Housing Security and Real Estate Management Bureau (NJHSREMB), explained that Nanjing had ignored the basic housing provision work for more than a decade as most affordable housing units were in fact used for other purposes. He said:

‘To be honest, the focus of affordable housing in Nanjing was not on the basic housing security and protection. You are studying in the UK – in this area (housing provision), UK has done well. But in Nanjing, between 1998 and 2010, I can say that more than 90% of the affordable housing, mainly ECH, was used as demolition resettlement housing to be compensated and provided to relocated households. We focused on the displacement and resettlement during the process of urbanisation in Nanjing at that time, and had no time to spare for basic housing provision for the poor. Government resources were limited, so when we tried to address the housing problems of relocated households by ECH, which was a very big problem to the government, the poor suffered inevitably. Between 2002 and 2012, Nanjing stopped physical housing

protection for citizens, instead providing housing allowance. In other words, during such a long period of time, there was no new affordable housing supply to provide to civilians. You know the house prices in Nanjing have been crazy, so that housing allowance was far from enough to buy or rent a house from the open market. At that time, we also had around 4,000 (4,081 to be precise³²) units of CRH, but the application standard was very rigor, so very few people could actually get one.’ [Mr. C]

Thus, the government in Nanjing used ECH to address the housing issue of relocated households. However, for the low-income households who really needed affordable housing units, no solutions could be provided for a long time due to government short-termism led to the misallocation of limited government resources, namely affordable housing units.

The misallocation of affordable housing units also occurred when another typical type of government failure happened: *rent-seeking*, as mentioned by Mr. B several times above. Helm (2010) argues that large-scale government intervention creates a pool of economic rents, which includes subsidies whether directly from the government or indirectly from consumers. People normally seek rents when they try to obtain benefits for themselves in the political arena (Henderson, 2008). They typically do so by obtaining a subsidy for a good they produce or for being in a particular class of people, by securing a tariff on a good they produce, or by obtaining special regulation that hampers their competitors (ibid.). According to Mao (2008), ECH was originally designed to house the poor, but ultimately, many ECH units were assigned to the middle class and the rich (see Section 3.2.3). ECH thus has become a source of social injustice as it was financialised and turned into a tool to seek rent in the Chinese society, as suggested by Mr. B above, too. Mr. A of the CREA said it in a more direct way:

‘You can see that in many affordable housing communities, quite a few residents drive BMWs and Mercedes... They don’t look like poor people at all... Also, I know that some ECH is larger than 200m² in Nanjing, so are they built for the poor? I don’t think so...’ [Mr. A]

³² Specific number obtained from the interview with Mr. E, the financial official of Anju.

5.2.3 Local Government's Lack of Motivation

Other than the misallocation of affordable housing units due to short-termism and rent-seeking, local governments in fact ***lacked the motivation*** to build affordable housing, as was discussed in Chapter 3. According to Yang (2015), even during the 12th five-year plan period, local governments still used 'strategies'³³ to deal with the difficulties of building affordable housing on a massive scale as dictated by the upper government, not to mention earlier times when related policies could not be enforced.

Mr. C, a local government official, made it clear that the significant factor that contributed to the inefficient affordable housing sector was the lack of motivation experienced by local governments to construct affordable housing for the poor:

'Before the 12th five-year plan, in fact, we had no enthusiasm about building affordable housing. I believe it is also very easy to understand that building affordable housing means a big loss to the government's finance. Most local governments live on land finance. Taking Nanjing as an example, the land finance accounts for more than 50% of the government revenue every year. So how could the government have the motivation? Especially, you know, there was no accountability system for the affordable housing sector at that time, so the government adopted an indifferent attitude towards the construction of affordable housing.' [Mr. C]

As a result, before the 12th five-year plan period, the government let access to housing for low- and middle-income groups be driven by the market without sufficient support in place when house prices exceeded their reach. The underlying reasons for this were the government failures caused by policies being too broad and inconsistent, short-termism, rent-seeking, and the well-known reason that local government lacked the motivation to build affordable housing units as they did not want to forfeit land finance.

Consequently, the housing provision system was far from established in urban China, and a significant gap in affordable housing emerged. For example, in Nanjing more than 90% of ECH was not provided to house the poor but used for city relocation instead. In addition, it is worth noting that although the city's population is above 8 million, before the 12th five-year

³³ Refer to Section 3.3.1 for more details.

plan period the city had only 4,081 CRH units for a long time. Although the exact number of households in need of affordable housing units was out of reach in this study, it can be expected that 4,081 units of CRH was a small number, representing a large affordable housing shortage.

5.3 36 Million Affordable Housing Units – Addressing the Market and Government Failures

Based on the examination of the housing affordability issue in China (refer to Chapter 2), it can be stated that the affordability problem caused by the housing market failure has been very serious in the country. Thus, government intervention is required to correct the failure. According to Reed (2015), Asian governments tend to provide affordable housing to citizens as a major way to intervene in the housing market, as is the case in Hong Kong and Singapore. On the other hand, during the process of intervention, the government itself can also fail for various reasons. The above discussions showed that a series of government failures did indeed happen after the housing reform, and as a result a complete affordable housing system was far from established in China. All in all, the serious housing affordability issue in the country has been a result of both market and government failures.

Hence, although the government did not explicitly indicate the underlying motivation for its change in policy which saw the building of 36 million units of affordable housing during the 12th five-year plan period, it should now be clear that these units represented the repayment for the affordable housing debt owed to the people for more than a decade, as the affordable housing problem had reached crisis point for many low- and middle-income households. Mr. A stated this in straightforward terms:

‘I think you should now be clear on why the government needed to build 36 million affordable housing units. Because they had to. There were a lot of people without a house, and the social contradiction was very sharp.’ [Mr. A]

5.3.1 The Primary Motivation – Social and Political Stability

The housing market is tightly connected to social and political stability, not just in China. Taylor and Stroud (2010) state that in the UK, decades of boom and bust housing inflation have led to massively increased social and intergenerational inequality, and thus government intervention to the housing market is necessary to address those social problems. However, as mentioned in Section 3.2, the housing affordability issue has been one of the largest challenges for the government in China, and has even threatened the social and political stability of the country (Yang and Chen, 2014). Therefore, it can be concluded that the plan to build 36 million units of affordable housing as part of the 12th five-year plan period involved compensating for the results of the policy failures that had occurred 10 years prior to correct the government and market failures, with the purpose of maintaining social and political stability. That is, in the wake of mounting unrest, the creation of an affordable housing sector was perceived as a way forward. This sector existed on paper, but it was now time to repay the affordable housing debt owed. Specifically, Mr. A explained this motivation and the change as follows:

‘The government made real estate a pillar industry as real estate business brought huge GDP to the government, and PM Wen Jiabao’s government mainly did nothing to contain the real estate market but promoted it in a great way. So the house prices became higher and higher. In 2008, the Chinese economy met a big problem because of the Global Financial Crisis (GFC). The “Four Trillion Stimulus Plan”³⁴ was thus launched and was supposed to boost the real economy, but in fact, most of the money went to the real estate industry to seek higher profits, driving house prices up again. But you know that, on the other hand, the affordable housing system had not been established in China, the so-called “affordable housing” existed in name only. So, in the end the government decided to build those affordable housing units for the poor. This was a decision based on preventing political crisis. Also, it was the decision the government had to make without other options, and it was the decision to repay the (affordable housing) debt owed for more than 10 years.’ [Mr. A]

³⁴ The State Council of China announced a RMB 4 trillion (US\$586 billion) stimulus package on 9 November 2008 as an attempt to minimise the impact of the GFC on the world's second largest economy. Critics of China's stimulus package have blamed it for causing a surge in Chinese debt since 2009, particularly among local governments and state-owned enterprises.

5.3.2 Anxieties Behind the Ambitious Affordable Housing Plan – Poor Estimation

In general, the nationwide affordable housing project has been positive. It has created a complete affordable housing sector and has had positive effects on social and political stability in China:

‘It was a positive sign that implied the government had finally returned to the initial dual-track housing system proposed in the housing reform of 1998. One side is the open market, the other side is the government provision, which is what a normal and stable housing market should be. I think it is a very good thing for the affordable housing sector, our economy, and society.’ [Mr. A]

However, in this study it was found that the policy might still be flawed by policy failure caused by the rules employed. In terms of the 36 million units of affordable housing themselves, the most critical problem was that how the number of 36 million had been determined was unclear. The accuracy of this target was raised as an issue by Mr. A:

‘I have to state that the plan was good, but there was a fatal error. This fatal error was that no systematic and detailed investigation would be conducted before the publication of the policy. Why build 36 million units? If you went to the MOHURD, asked how the number was calculated, no one could give you a precise answer. Because there was no housing census and investigation on the security objects to make this policy.’ [Mr. A]

With regard to this key problem, Mr. B was also asked for an explanation. He said:

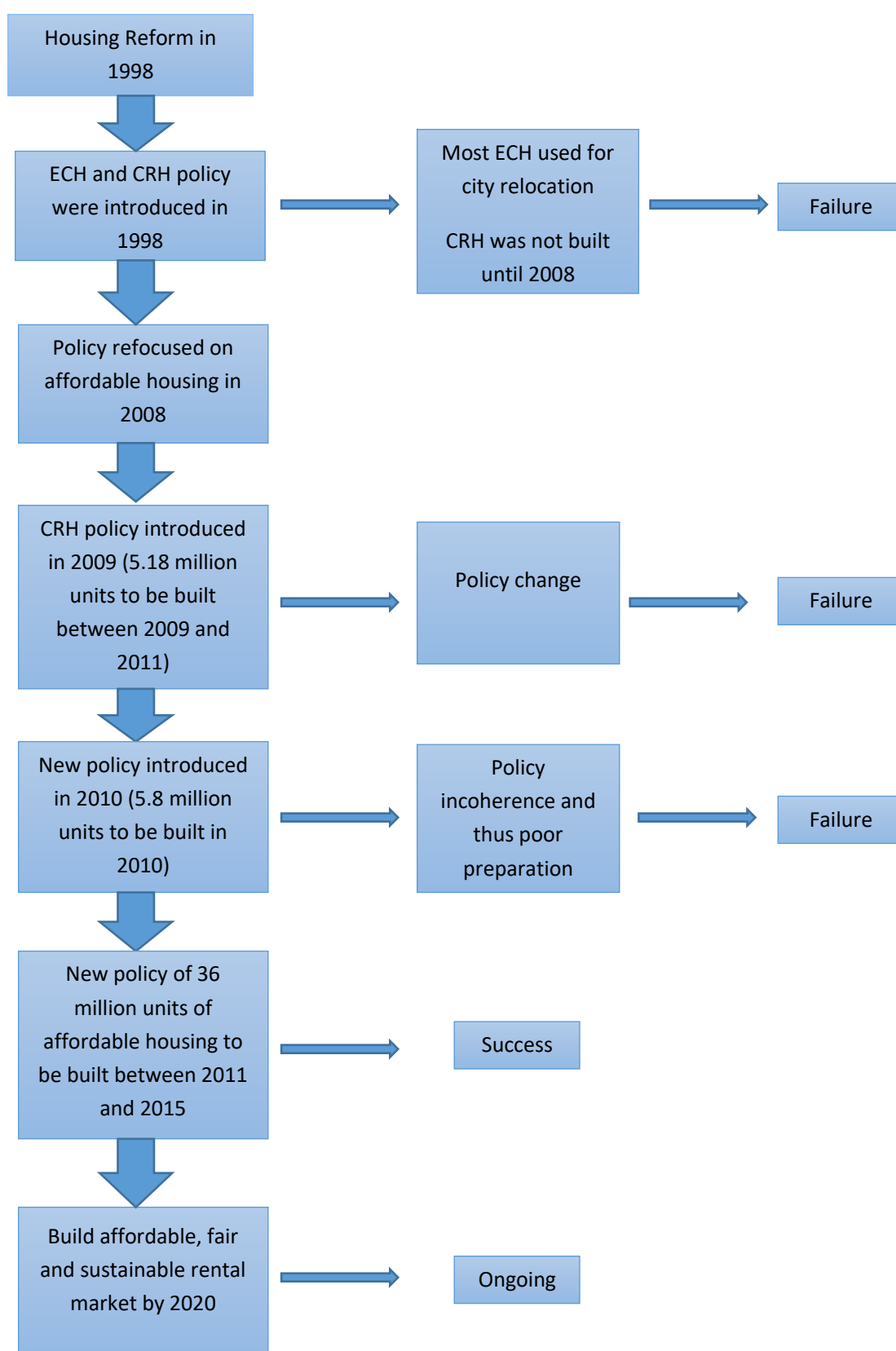
‘We have not had a diagnostic investigation of the national housing situation in recent years. So when making a related housing policy, it is very hard to avoid deviating from the actual demand. The last national housing census was conducted in 2000, and was already no longer a valid point of reference. To be honest, I know when making an affordable housing plan like build how many units, we must have an understanding of how much housing we already have and how much the potential demand is, and it must also be tied to the income level. This is a very complicated and precise process...’ [Mr. B]

Based on these statements, it can be stated that although the plan itself has brought a great and positive change to the affordable housing sector in China, the project of 36 million affordable housing units contained a serious problem. That is, the number '36 million' was a poor estimation based on imprecise information. In fact, the government did not understand how much affordable housing was needed. Thus far, the present author suspects that the serious funding burden experienced by local governments, such as that of Nanjing, to construct those affordable housing units may have been caused by this poor estimation, as the funding needed was beyond their financial ability. However, further investigation is required to confirm this conjecture.

5.3.3 Review and Rethink

Based on the discussions above and Section 3.2, the following figure was produced to show the development and changes in China's affordable housing sector after 1998, as a roadmap.

Figure 5.1: The Development of China's Affordable Housing Sector after 1998



Source: Researcher's own summary, 2017.

In summary, subjectively, the government lacked enthusiasm for building affordable housing for people in need. Compared to in developed countries such as the UK, the Chinese government appeared to be more passive and did not see the need to become involved in the construction of affordable housing or to stimulate new affordable housing supply. It can be understood that there was also no choice but to build 36 million units of affordable housing during the 12th five-year plan period to prevent social and political crises, as the housing affordability problem was critical.

In addition, the figure above shows that in the past 20 years, the affordable housing policies in China have frequently changed, resulting in a lack of continuity and operability. This policy confusion could arguably be recognised as the early exploration of the affordable housing policies in the country. However, from the start of the 12th five-year plan, namely 2011, the government made clear attempts to redefined the policy, and set into action a goal and implementation plan to develop the immature affordable housing sector in China. That is, the Chinese government started to address housing as *merit goods*,³⁵ whereby the government should provide basic housing to people, and this basic housing provision system is based on the public rental sector instead of directly providing home ownership to the protected and vulnerable households.

All in all, it can be concluded that the plan of building 36 million units of affordable housing was a sign and milestone of the return of the government's responsibility for housing provision in China, although the plan had certain problems. In this vein, Mr. A said:

‘The affordable housing sector in China was basically unsuccessful, but it has been heading in the right direction again since the start of the 12th five-year plan. It was like a man who had not driven a car for a long time: he might speed once he got back to the road again. However, one thing was certain: he was on the right track.’ [Mr. A]

However, ‘getting back on track’ was costly. As shown in the previous chapters, affordable housing finance was a substantial problem in China, but it was eventually solved by the government. However, many puzzles remain unsolved, and whether the financial problem

³⁵ Refer to Section 2.2.1.2.

was caused by government failure requires further investigation. The following sections explain those issues in detail.

5.4 Current Affordable Housing Finance in Jiangsu Province and Nanjing City and Potential Problems

Based on the valuable information gained from the fieldwork, this section explicates the affordable housing finance details of urban China to determine how affordable housing has been financed and what the potential problems are.

This section starts with Jiangsu Province and then specifically examines the capital city of Nanjing, before finally considering the potential problems in China's affordable housing sector as a whole. As suggested in Section 3.3.1, a three-level institutional model can be used to explain the inter-governmental structure in housing provision in China: central initiation, provincial intermediation, and finally municipal implementation. It is believed that a study of both the provincial and municipal levels makes this research more comprehensive, given that data on that national level is generally available to the public (see Section 3.3.2).

5.4.1 Affordable Housing Finance in Jiangsu Province

As mentioned above, the study area, namely Nanjing, is the capital city of Jiangsu Province. Before examining the specific city, it is helpful to have an overview of the current situation of affordable housing finance in the whole province.

Jiangsu is located on the developed east coast line of China (refer to the figure below). It is the third smallest but the fifth most populous and the most densely populated of 22 provinces in mainland China (National Bureau of Statistics of China, 2010). Jiangsu has the second-highest GDP (7.61 trillion RMB) of the Chinese provincial-level administrative regions, after Guangdong, contributing to more than 10% of the country's GDP (74.41 trillion RMB) in 2016 (Wallstreetcn.com, 2017). For a better reference, internationally, the GDP of Jiangsu

Province in 2016 (equivalent to 1.12 trillion USD) was close to that of Spain in the same year (1.23 trillion USD)³⁶.

Figure 5.2: Map of Jiangsu's Location in China



Source: China Highlights, 2017.

5.4.1.1 Four Major Financing Sources for Jiangsu

The background of the affordable housing sector of Jiangsu was that, in 2014, Jiangsu's annual affordable housing target was successfully achieved by finishing 260,000 units and starting new builds of 270,000 units (CIIC, 2015). Among the new builds, PRH accounted for 38,000 units, ECH for 22,000 units, CPH for 22,000, and the remaining majority of 188,000 units for SRH (ibid.).

To achieve the above housing target, the funding mainly came from four sources. Specific data in this regard is summarised in the following table.

³⁶ International Monetary Fund, 2017. See: <http://www.imf.org/external/datamapper/NGDPD@WEO/OEMDC/ADVEC/WEOWORLD/ESP>.

Table 5.1: Four Major Financing Sources of Affordable Housing in Jiangsu, 2014

Financing Source	Amount (RMB)	Interest Rate	Term	Remarks
China Development Bank (CDB) Loans	38 billion	4.995%	25 years	<ul style="list-style-type: none"> As a national policy bank, CDB aims to support the national strategy set by the central government with financial instruments. These loans were policy-based lending, so they had to be guaranteed by the government's public finance. However, no actual collateral was needed. The interest of these policy-based loans was 18~19% lower than the base rate set by the Central Bank of 6.15% as of 31 December, 2014.
Commercial Bank Loans	46 billion	≥6.15%	various	<ul style="list-style-type: none"> The lengths and interest rates of different commercial loans were different. However, one common factor was that those interest rates were higher than the base rate.
Local Government Guaranteed Corporate Bonds	28 billion	around 8%	7 years	<ul style="list-style-type: none"> Must be approved by the National Development and Reform Commission of the PRC (NDRC), and must be issued by government-owned enterprises.³⁷ In the first three years, there was no need to repay the principal, but in the following four years, 25% of the principal had to be repaid annually. The yield had to be paid to the investors on an annual basis.
Channels of Non-Financial Sectors	16 billion	n/a	n/a	<ul style="list-style-type: none"> Government subsidies at all levels accounted for the vast majority of this part of funding.
Total	128 billion			

Source: Personal interview with Mr. B, 2015.

³⁷ Such enterprises were set up by the government to be financing platforms to issue corporate bonds; no private enterprises could be involved.

From the table above, it can be calculated that a total of RMB 128 billion was funded in 2014 to support the affordable housing sector in Jiangsu. The major funding channels were policy and commercial bank loans, government guaranteed bonds, and central, provincial, and local government subsidies.

Although the funding for the construction of affordable housing units was plentiful in Jiangsu and thus the affordable housing target was achieved, Mr. B noted that governments in Jiangsu at all levels faced great financial pressure for new affordable housing projects, as most of the construction capital was borrowed. This pressure was especially heavy for local governments as they were responsible for the construction of affordable housing units and had to repay the debt they borrowed by government financing. Mr. B also suggested that beyond the huge debt owed by governments, for each new affordable housing project the government had to organise 20% of the total capital needed as self-raised funding in advance to apply for loans or issue bonds, which could also be huge financial burdens for local governments in Jiangsu.

5.4.1.2 Conflict Between Reality and the Literature

As discussed in Section 3.3.2, the major and traditional financing sources of affordable housing in China included financial support from the central government, 10% of local government's land-transferring net income, and commercial and policy bank loans.

However, the data collected from the fieldwork revealed a significant difference between reality and what is argued in the literature regarding affordable housing finance. Specifically, from the table above, it can be seen that commercial and policy bank loans indeed were the most significant sources of financing affordable housing in China. Current studies suggest that other major sources were used, but in practice, they were only marginal.

In terms of the *central government support*, the MOF (2015) indicates that the amount was RMB 222.2 billion in 2014. However, in Jiangsu, this was not the case:

‘The support from the central government was very limited, very little. In 2014, the central government only provided Jiangsu with a subsidy of RMB **2 billion** to build affordable housing. You know how much we used, so 2 billion was just a very small amount of the total number. However, I need to say that 2 billion was already good

enough. Because in the past, the developed provinces and cities like Jiangsu, Zhejiang, and Shanghai could not even get one penny from the central government as we were required to be self-funded before. At least we could have 2 billion now.’ [Mr. B]

In addition, for the *10% of local governments’ land-transferring net earnings*, it is estimated in this study that the amount in 2015 was RMB 337 billion at the national level. However, this part of funding could not in fact be used by the affordable housing sector of Jiangsu at all:

‘You should understand that the tricky part of this policy was the so-called “net earnings”, which was not the land-transferring “revenue”. During the actual operation, local governments tended to reduce the figures of such net earnings, or sometimes, the figures could even be negative. Currently governments at all levels have fiscal difficulties. So, I think it is not surprising that local governments would use this money (land-transferring net earnings) to build roads, bridges, and subways. But how much could be left for affordable housing? By policy, this part of the fund should be used to support the construction of CRH and now PRH. But in fact, this part of the money basically cannot be seen and used by us.’ [Mr. B]

Besides the two traditional financing channels indicated in the literature, as mentioned in Section 3.3.2, local governments also developed some innovative financing mechanisms through financial and land means. Among them, *earnings from the Housing Provident Fund* (HPF) was a significant one that was discussed intensively by scholars. They suggested that this innovative form of funding was helpful as a supplement to the affordable housing sector, although the policy was revoked in 2016.³⁸ However, this form of funding was not significant in Jiangsu:

‘I want to make it clear that yes, we had money from the HPF, but it was very little. In 2014, the earnings from the HPF used to finance the construction of affordable housing were around RMB **100 million** in each provincial city in South Jiangsu. In

³⁸ Based on Section 3.3.2, between 2009 and 2015, the total amount that the HPF contributed to the affordable housing sector was RMB 110.7 billion.

less developed North Jiangsu, the amount was even less in each city at tens of millions.’ [Mr. B]

Zou (2014) states that some local governments such as Beijing have set an affordable housing quota for commodity housing projects to increase the supply of this housing. According to Mr. B, in Jiangsu an innovative financing method through land was also used: the *compensation of the precondition for the granting of land*. However, this method was ineffective:

‘In some provincial cities such as Changzhou, Taizhou, and Lianyungang, the governments would require developers to build some affordable housing units in the same area with more expensive commodity housing to form a common community, and make this a precondition for selling the land to developers. However, most developers were afraid of the decrease in property quality due to the involvement of affordable housing units in the same community, and thus chose to pay for the compensation as an alternative, which could be used to construct affordable housing units elsewhere by the government. In Changzhou, for example, only one developer has chosen to build affordable housing units along with the commodity housing so far, since this policy was implemented in 2008. But this part of fund was very limited, too. Taking Changzhou as an example, the revenue of the compensation was only around RMB **100 million** annually, which was very little.’ [Mr. B]

Based on the statements above, it can be concluded that besides government borrowings, the financing channels identified by the academic circle in fact only represented a fraction of the total cost needed by the affordable housing sector in Jiangsu. Specifically, in 2014, RMB 128 billion was needed in this sector to finish 230,000 units and start 260,000 units of new builds; and of the total funding, 87.5%, namely estimated at 112 billion, was government borrowings. In view of this situation, Mr. B suggested:

‘This situation was not a single case in Jiangsu, but a common phenomenon in the whole country.’ [Mr. B]

Thus, it can be concluded that current affordable housing finance in China heavily relies on government borrowings, and the remaining part of the funding mainly comes from government subsidies at all levels. The rest of the so-called ‘major’ sources and innovative sources in fact only form a tiny part of the total required capital.

The funding to finish the affordable housing goal set for 2014 and even the whole 12th five-year plan period appeared to be sufficient in Jiangsu, or even broadly in China. However, governments faced grave financial pressure at all levels, as the funding for the affordable housing sector including borrowings and subsidies was virtually entirely the responsibility of the government, and repayments including principles and interest were required.

5.4.2 Affordable Housing Finance in Nanjing

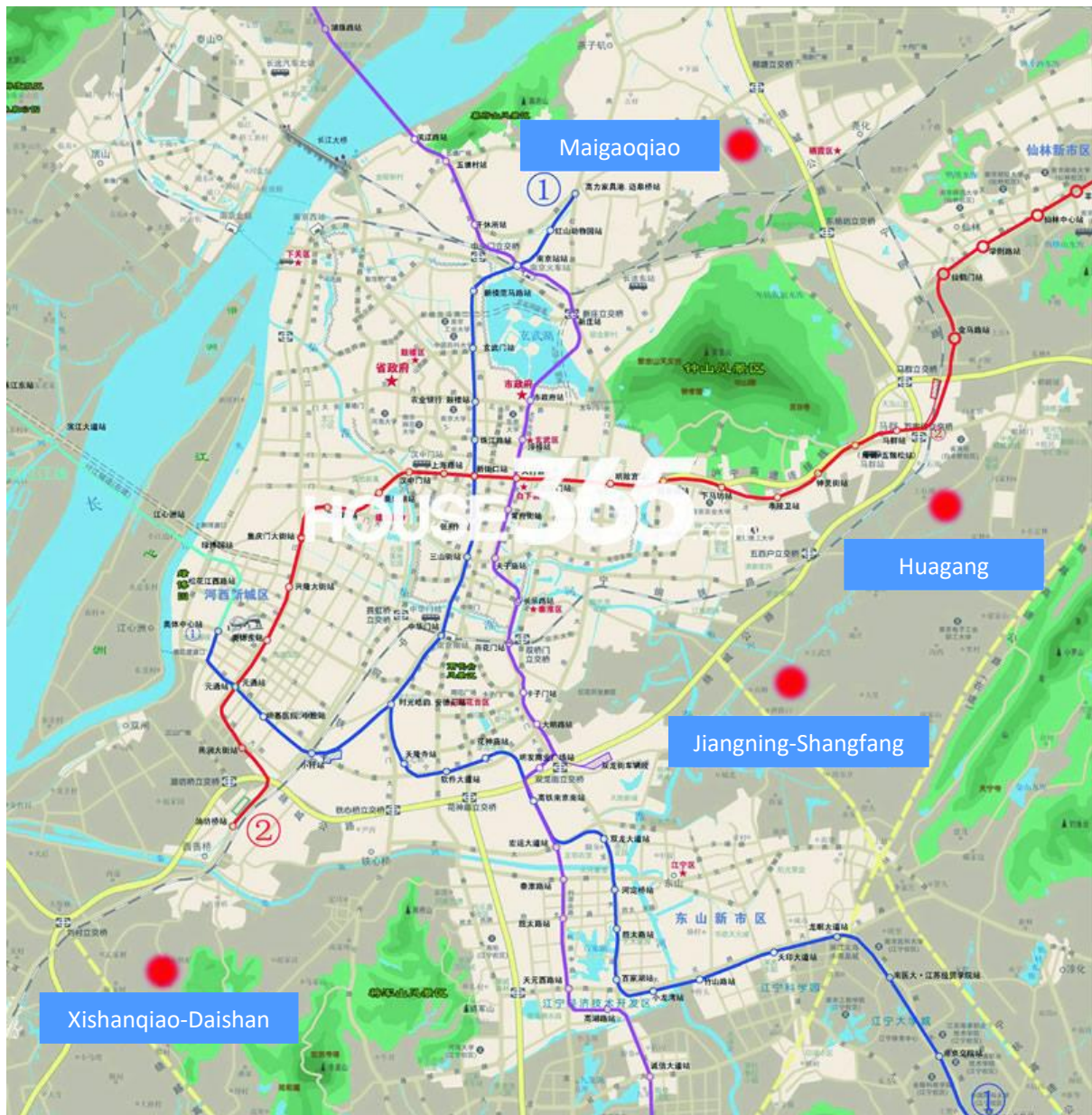
An official document of Nanjing Auditing Bureau issued in 2013³⁹ states that according to the national and provincial deployments, the Nanjing municipal government started to plan and construct the ‘four major affordable housing areas’ (四大保障房片区) in 2010, namely Maigaoqiao Innovation Park, Huagang, Xishanqiao – Daishan, and Jiangning – Shangfang (see Figure 5.3 below for their locations in Nanjing). According to the document, the total gross floor area of these four affordable housing projects was 8.4556 million m², including 82,800 various forms of affordable housing units. The Nanjing government deemed this to be the largest livelihood project in the modern history of Nanjing⁴⁰ (see Figure 5.4 below for PRH communities). According to a document published by Anju Affordable Housing Company (hereafter referred to as Anju) in 2014,⁴¹ the main purpose of this significant affordable housing plan was to tackle the problems in the affordable housing sector of Nanjing including inadequate coverage, low construction quality, and poor supporting infrastructure at the start of the 12th five-year plan period.

³⁹ Internal government document accessed through personal channels, cannot be attached.

⁴⁰ See: http://www.nanjing.gov.cn/xxgk/bm/sjj/201408/t20140801_2934631.html.

⁴¹ Internal government document accessed through personal channels, cannot be attached.

Figure 5.3: The Four Major Affordable Housing Areas in Nanjing



Source: house365.com, 2011⁴²; modified by the researcher, 2016.

⁴² See: <http://www.house365.com/d0t1l2p3/1000000/2011/12/08/020730/>

Figure 5.4: The Public Rental Housing Projects Within the Four Major Affordable Housing Areas in Nanjing



Source: Pictures provided by Mr. D, 2016.

According to Anju, the Nanjing government was responsible for every aspect of this large affordable housing plan in the city, from construction to demolition, and certainly including its finance. Mr. D, a senior official of Anju, explained:

‘In order to complete the goal of the four major affordable housing areas, Nanjing government set up a state-owned enterprise called Nanjing Affordable Housing Construction and Development Company in 2010 (predecessor of Anju). And in 2012, the company upgraded to the Nanjing Anju Group, which was a government platform responsible not only for the construction of all the affordable housing units in Nanjing, but also for the operation and management of those affordable housing units.’ [Mr. D]

5.4.2.1 The Affordable Housing Financing Channels for Anju

In terms of Anju’s financing details, Mr. E’s, a financial officer of Anju, stated:

‘To finish the construction target of the four major affordable housing areas, we spent around **RMB 44 billion** in total, and as a government platform, Anju had to find its own way to finance those affordable housing projects, which was very tough. But at the end of this May (2016), we finally completed this job and delivered 82,800 units of affordable housing to the people of Nanjing.’ [Mr. E]

The specific financing sources are presented in the table below.

Table 5.2: Funding Channels for the Four Major Affordable Housing Areas in Nanjing

Financing Source	Amount (RMB)	Interest Rate	Term	Remarks
National Social Security Fund (NSSF) Trust Loans	3 billion	6.05%	35 months (2 years and 11 months)	<ul style="list-style-type: none"> • In 2011, Anju successfully secured a trust loan through the NSSF. • The interest rate of 6.05% was well below the base rate over the same period. • This was the first case in China where the NSSF issued trust loans to invest in affordable housing projects.
Housing Provident Fund (HPF) Loans ⁴³	1 billion	4.95%	8 years	<ul style="list-style-type: none"> • In 2012, as a pilot city, Anju of Nanjing obtained an HPF loan to finance the construction of public rental housing. • The interest rate was only 10% above the HPF base rate of 4.5% as of 31 December, 2012.
Anju Corporate Bonds (Local Government Guaranteed)	6.5 billion	5.4%/5.6%	7 years/10 years	<ul style="list-style-type: none"> • In 2013, approved by the NDRC, Anju issued corporate bonds to investors. • Seven-year bonds accounted for 3.5 billion with a yield of 5.4%. • The remaining 3 billion was in 10-year bonds with a yield of 5.6%.
Privately Raised Anju Company Bonds	6.5 billion	6.85%	5 years	<ul style="list-style-type: none"> • Issued in 2013 in the inter-bank market, not for the public. • Compared to local government guaranteed corporate bonds, these privately raised company bonds had lower credit ratings (containing higher risks) and thus could generate higher yields.

⁴³ This was an HPF loan, not the earnings of the HPF mentioned above.

Policy and Commercial Bank Loans	24.6 billion	various	various	<ul style="list-style-type: none"> • Those loans were obtained at different times between 2011 and 2015. • The interests of policy bank loans were well below the base rate. • Commercial bank loans' interests were generally above the base rate.
Government Subsidies	2.4 billion	n/a	n/a	<ul style="list-style-type: none"> • Government subsidies were purposely used for CRH and PRH.
Total	44 billion			

Source: Personal interviews with Mr. E, 2015 and 2016.

Based on the table above, it can be stated that the affordable housing financing details in Nanjing were in line with the overall situation of Jiangsu Province. That is, policy and commercial bank loans were the largest financial sources, although Anju also tried to raise funds through alternative channels including issuing company bonds and obtaining NSSF trust loans and HPF loans. However, in the final analysis, the vast majority of funding was still government borrowings, since Anju is a government platform wholly owned by the Nanjing government.

5.4.3 Potential Problems in Current Affordable Housing Financing in Jiangsu and Nanjing

Based on the precise data regarding affordable housing finance in Jiangsu Province and Nanjing City above, several potential problems can be identified in the current affordable housing financing system. These are discussed in the following.

5.4.3.1 Funding Required Beyond Local Government's Financial Capability

The funding needed to achieve the affordable housing goal set for the 12th five-year plan was enormous. For example, the funding needed in Jiangsu was RMB 128 billion in 2014 alone,⁴⁴ and the total amount required in the province between 2011 and 2015 was around RMB 500 billion.⁴⁵ Specifically, Jiangsu Province has 13 cities, and during the 12th five-year plan period, its capital city of Nanjing spent RMB 44 billion in the construction of the 'four major affordable housing areas'. All in all, the information collected for Jiangsu Province and Nanjing City suggests that considerable funding was demanded by China's affordable housing sector for the 12th five-year plan period.

As discussed in Section 5.3.2, this thesis argues that the 12th five-year plan policy to construct 36 million units of affordable housing was a failure and thus resulted in a huge financial burden for the government. Regarding the policy failure, Dolfsma (2013) states that rules in a policy cannot be too specific. For example, a specific rule limited to a number such as 36 million units of affordable housing will be costly in itself to implement for the rule maker, but will also increase uncertainty in society. This is because a highly specific rule will soon become obsolete as circumstances change and need to be reformed (ibid.). In the context of China, once the target of building 36 million affordable housing units was announced, the local governments could only try to achieve the goal, although the policy was made based on a poor estimation.

There is no doubt that the considerable amount of funding required to achieve this specific housing target was beyond the local governments' financial capability:

'It can be said that the (Nanjing) government was financially unable to construct such a large amount of affordable housing units in a few years' time. The financial allocation to the affordable housing sector was far from enough. But the target was there, so, there was nothing for us to say, we just followed the order to do it...' [Mr. E]

Thus, at the beginning of and during the 12th five-year plan period, many scholars argued that the funding gap to finish this housing task would be huge, and that it would be difficult or

⁴⁴ For a better reference, the total fiscal revenue for Jiangsu was RMB 723.3 billion in 2014, see: <http://finance.sina.com.cn/china/20150108/011021247642.shtml>

⁴⁵ Data from personal interview with Mr. B of the DOHURDJS, in 2015.

even impossible for the government to fill this gap (see: Qi and Wang, 2013; Wang, 2011). Even though Jiangsu is the second richest province in China, and its capital of Nanjing is one of the most developed cities in the country, it still faced great financial pressures in completing the affordable housing goal. One can imagine that the financing situation in cities in less developed central and western regions could only be worse. However, the government found a short-term solution: borrowing money.

5.4.3.2 Current Financing Channel Constrained by a Single Source

To finish the task set by the central government, local governments in China tried to finance the new builds even though the housing target exceeded their ability. However, the financing scheme was problematic. That is, as mentioned above, the vast majority of funding was government borrowings, and the rest was government subsidies at different levels. Thus, building affordable housing in China was essentially a government job, especially as its financing channel was constrained by a single source of government borrowings and subsidies. This placed high financial stress on the governments. Regarding this financing scheme, Mr. E commented:

‘We had many innovative financing methods like NSSF’s trust loans and HPF loans, which were all leading financial innovations and attempts for the affordable housing sector within the country. But yes, as you said, essentially we were relying more on borrowings, and those innovations were still loans too. To be honest, every morning when I woke up and then I realised it would be another...err, more than a million RMB of interest we owed to the banks, I really had a headache.’ [Mr. E]

However, it must be noted that although the funding borrowed by the government for the affordable housing sector was substantial, and vast repayments would thus be required, the government would repay a part of the money by selling affordable housing units to the low-income households once those units were completed. It can be stated that this has been a long-lasting financing method for the affordable housing sector in China since the housing reform in 1998: borrowing money to construct affordable housing units and repaying the debt by selling those units when they are complete. This works to finance the affordable housing units available for sale.

Regarding Nanjing in particular, Mr. E revealed how Anju would repay the borrowed money:

‘We made a plan of how to repay the money, although I could see that there would be a big funding gap.’ [Mr. E]

The detailed repayment plan is summarised in Table 5.3.

Table 5.3: The Repayment Plan for the Funding Borrowed for the Four Major Affordable Housing Areas in Nanjing

Repaying Source	Amount (RMB)	Remarks
Affordable Housing Sales	30 billion	<ul style="list-style-type: none">This part of funding was largely based on the sales of ECH and CPH (61,551 units in total) to low-income families and relocated households.
Government Subsidies	2.4 billion	<ul style="list-style-type: none">These subsidies were from the central, provincial, and local governments.Could only be used for CRH and PRH.
Total	32.4 billion	
Funding Gap	11.6 billion	<ul style="list-style-type: none">Total funding needed: 44 billion

Source: Personal interview with Mr. E, 2016.

Regarding the data in the table above, it is worth mentioning that the calculated repayment amounts were significantly below the market price of the housing units, which were only enough to cover the costs with limited profits. Mr. E emphasised the following:

‘Those repayment amounts were calculated based on the price set by the (Nanjing) Price Bureau, for example the price of ECH and CPH per square metre.⁴⁶ You should understand that we are building affordable housing, so the price set for those housing

⁴⁶ RMB 5,200 per square metre for ECH, and RMB 7,800 per square metre for CPH.

units for sale cannot go high but must be made to cover the costs and have some limited profits.’ [Mr. E]

So far, based on the table and statements above, it is clear that the money borrowed to construct the affordable housing in Nanjing was mainly repaid through the sale of the affordable housing units such as ECH and CPH. However, regarding the rest of the housing assets such as PRH, which cannot be sold, how to balance the expenditure was problematic for the government, as a large funding gap of 11.6 billion could still not be filled.

5.4.3.3 Public Rental Housing Has Changed the Current Pattern of Affordable Housing Finance

The old financing approach enabling the building of public rental housing (PRH) could not work here as the units could not be sold. Alternative ways must be found urgently, since the government has fundamentally changed the development direction of the affordable housing policy in China. The aim is now to establish an affordable, fair, and sustainable public rental housing market system by 2020 instead of increasing the home ownership rate for the low-income group.⁴⁷ Hence, lease-based affordable housing units, which are not for sale, will become the main housing form in the affordable housing sector.

Regarding this issue, Mr. E explained:

‘The funding gap of 11.6 billion⁴⁸ was the spending on the PRH and the commercial real estate combined. Of this number, nearly 6 billion was for PRH units, and the rest was for the supporting commercial real estate in the communities. We hoped this cost could be covered by the government finance. However, we only received subsidies from the central, provincial, and local governments of 375 million. For the rest, the municipal government asked Anju to use land transfer fees to cover the cost by ourselves as they already gave us more than 2 billion to construct CRH. But this was totally unrealistic!’ [Mr. E]

⁴⁷ Refer to Section 3.2.3.

⁴⁸ Refer to Table 5.3.

‘Because the low returns and the return cycle would be long, even many (commercial) banks were not willing to be engaged in providing the funding for the PRH. So the financing of the PRH in Nanjing could only rely on the government. But it was not realistic as government finance could not afford it. The land would be provided for free and more than that, the government had to pay for the costs of demolition and construction. It was not realistic for the government finance at all. So, in the end, we (the government) had to borrow the money from the National Social Security Fund, China Development Bank, and other commercial banks too.’ [Mr. E]

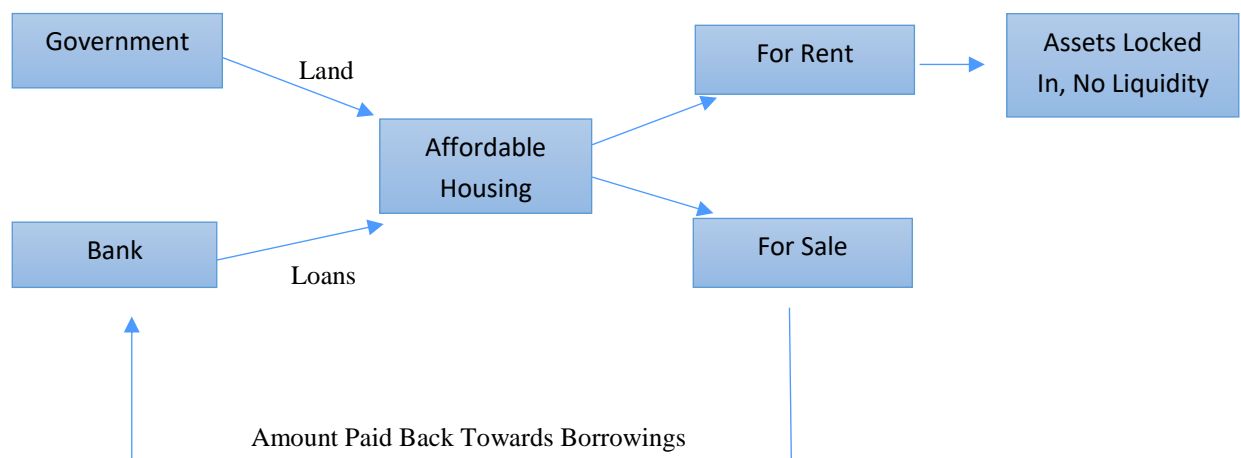
For this part of government borrowings, currently no non-governmental repayment plan could be established, but this money still had to be paid back by government finance:

‘Selling the affordable housing units to repay the borrowed funds for construction has been a usual practice for us. We do it all the time since the housing reform. But for PRH, this financing mode cannot work, so all the debts are undertaken by government finance.’ [Mr. E]

In general, the above statements and data demonstrate the current situation of affordable housing finance in China, and help to answer the research questions proposed in this thesis. These research questions concerned discovering the detailed account of how affordable housing has been financed in Nanjing and what the problems that currently exist in affordable housing financing scheme which could have a negative impact on the maturing of this affordable market.

The current situation of affordable housing finance in China can be simply presented as the following figure. Based on Figure 5.5, it can be seen that PRH has changed the current pattern of affordable housing finance, and has in fact become a source of financial burden for the government. Hence, solutions are needed.

Figure 5.5: Current Pattern of Affordable Housing Finance in China



Source: Developed by the researcher, 2017.

5.5 Affordable Housing REITs

Based on the current situation, could have a sense that establishing affordable housing REITs in China might be necessary. Firstly, a great deal of affordable housing including PRH has been built since 2011, and secondly, the government does not have appropriate financing channels to fund the construction of affordable housing for rent, other than spending money borrowed from banks, which has to be paid back by government finance without any other channels.

Regarding this issue, Mr. A shared the following outlook:

‘The proposal of affordable housing REITs in China is based on a series of considerations. But the most important one is about the *turnover of capital*. During the 12th five-year plan period, the government spent about RMB **2 trillion** in total on the construction of rent-based affordable housing, so the financial pressure was very heavy. But this capital was locked in the large number of housing stocks, and if the cash could be withdrawn from the housing stock through the securitisation of real estate, then a lot of problems would be solved. Think about it, had you ever heard the term *affordable housing REITs* before the 12th five-year plan? ...The idea of

affordable housing REITs started to come out only after the emergence of public rental housing in China.’ [Mr. A]

On the other hand, Mr. B explained the vehicle of REITs from the perspective of the government:

‘The idea of REITs came after careful considerations. Following investigations and studies, the government thinks that REITs are a very good vehicle to use to liquidate the existing PRH stock. Because it is a well-established vehicle to deal with those lease-type properties that have been used in Western countries for ages, and Hong Kong has REITs too. I think that ultimately, the best way would be for REITs to hold those PRH units, well, not just for affordable housing, but also for other types of lease-based properties, I mean...’ [Mr. B]

The government’s considerations behind the idea of affordable housing REITs are discussed in the following.

5.5.1 Immediate Considerations

Based on the interviews, it can be stated that the most direct and explicit causes of the government plan to establish affordable housing REITs were based on the following two considerations.

5.5.1.1 Cash Turnover for New Builds and Debt Repayment

As suggested by Y.X. Huang (2010) (see Section 3.5.2), liquidity is the greatest benefit that REITs can bring to the affordable housing sector according to the US experiences. Also, as mentioned by Mr. A above, the foremost consideration of the proposal of affordable housing REITs in China could be cash turnover. Specifically regarding the city of Nanjing, Mr. C suggested:

‘A very important feature of rent-based affordable housing finance has been that we have to use a lot of long-term funding, as the payback period of the investment in the PRH is very long. But currently the terms of most of government borrowings are

relatively short, so we have to do something like “borrowing to repay” in order to maintain the construction and operation of the PRH. This kind of financing mode, namely continuing to borrow short-term debts to repay the long-term loans, has resulted in great financial pressure for local governments. So, if affordable housing REITs could be established in Nanjing, I would estimate that at least several billion could be released from current PRH stock. This money would be more than enough to construct the PRH for the 13th five-year plan and thus to increase the total supply of the PRH in Nanjing. Otherwise, we will have to continue to borrow money to build and maintain the PRH.’ [Mr. C]

After the construction boom of the 12th five-year plan period, the targets of PRH set for local governments have been reduced. So the capital to be released from current housing stocks would be, duly, used to repay the government borrowings, in addition to financing new builds in Nanjing:

‘The PRH target set for the 13th five-year plan was basically half of that for the last five-year plan (in Nanjing). So as I said before, a part of the money would be enough to construct new PRH units, while the remaining part would be used to repay the debt... There is no question about it.’ [Mr. C]

5.5.1.2 Separation of Management and Regulation for Promoting Justice and Efficiency

Other than the consideration of capital circulation, Mr. B highlighted an important consideration of the government from the policy perspective:

‘The establishment of the affordable housing REITs means that the management of the affordable housing units will be given to the professional property management team, decided by the REIT manager. In other words, REIT management will take on all the responsibility of operating, maintaining, and managing those affordable housing units, based on government requirements and policies and supervised by the government. But now, the government builds PRH and in the meantime operates and manages those units too, and more than that, the government needs to create all the regulations to regulate its own actions... Well, it cannot continue to be both a player and the referee. So I think REITs would be a good vehicle to *separate the management and*

regulation of the affordable housing for rent. Also, I think the government policy would provide *better protection* to those low-income groups if it was not involved in the operation.’ [Mr. B]

In addition, it is believed that separating the management and regulation of affordable housing by establishing affordable housing REITs would help increase the efficiency of operation and maintenance of current PRH. In this vein, Mr. D of Anju commented:

‘I believe that one of the most important benefits of establishing affordable housing REITs would be *efficient management*. Because currently you can see that the government is managing all the affordable housing units directly through Anju, which has been very costly. In contrast, REITs normally have a very professional team that is small in number but highly trained, which could save a lot of money but provide more efficient services. I think the REIT team would do much better to provide thoughtful and professional services to tenants, as the return on REITs would be highly dependent on the tenants’ satisfaction. Not like now, as a state-owned company, doing a good or bad job is the same, it is all public money anyway... I always believe that the market can do a better job than the government can.’ [Mr. D]

5.5.2 Hidden Reasons

Apart from the direct reasons mentioned above, key interviewees also revealed other significant but hidden reasons for creating affordable housing REITs in China. Mr. A said:

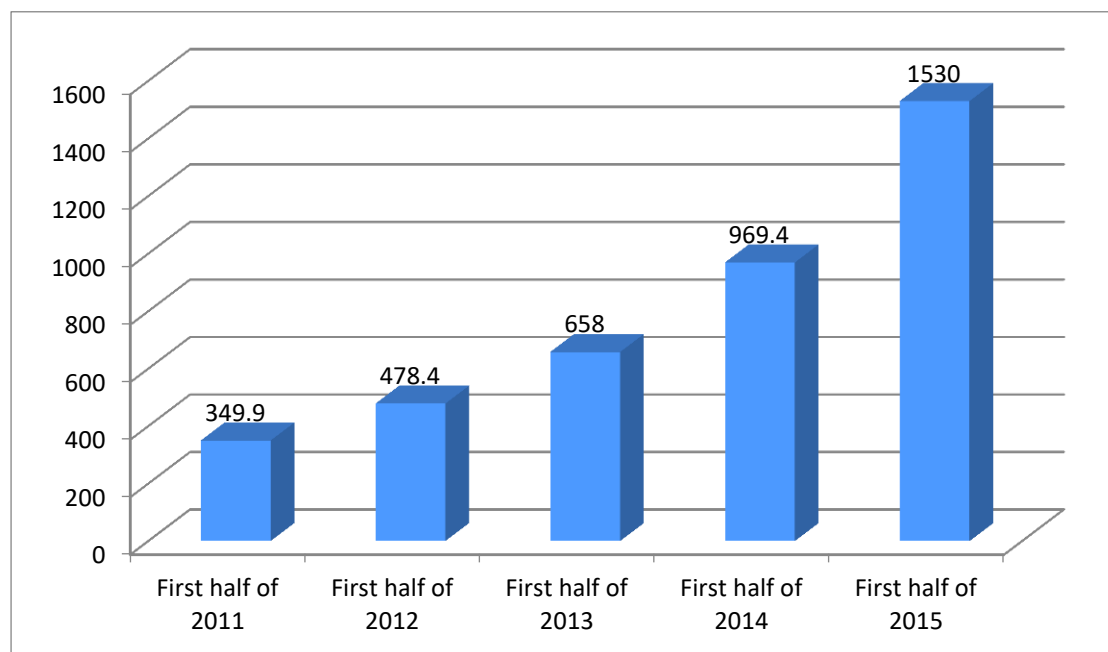
‘You don’t know how serious the issue of government debt is, and there are some problems with the economy at the same time...’ [Mr. A]

In other words, the underlying reason behind establishing affordable housing REITs in China is surprising but understandable: it is related to the government debt and the slowing Chinese economy.

5.5.2.1 The Crippled Government Debt Burden Uncovered

At the national level, the total loan balance⁴⁹ from both commercial and policy banks for the use of construction of affordable housing increased significantly from RMB 349.9 billion in the first half of 2011 to RMB 1,530 billion in the first half of 2015 (Ju, 2015); see Figure 5.6 below.

Figure 5.6: The National Loan Balance Growth Rate for the Affordable Housing Sector (in billions of RMB)



Source: Ju, 2015.

Researchers and professionals in the industry have been concerned about who will repay this debt in the future, as the total loan balance for the affordable housing sector was on track to increase to RMB 2,250 billion by 2016, and RMB 3,400 billion by 2017 (ibid.).

Based on the data collected in this research, it is clear that most of the affordable housing sector debt consists of government borrowings. Hence, the government should be responsible for this increased loan balance. Regarding this issue, Mr. B said:

⁴⁹ A loan balance is the amount left to pay on a loan. Every loan will have a loan balance until it is completely paid off; see: <https://www.thebalance.com/what-is-a-loan-balance-527327>.

‘Well, I cannot deny the upward trend of loan balance. However, the causes are not complicated. Most of the money was borrowed because we built a lot of affordable housing units, and you know that already. But on the other hand, housing sales take time. There is a sales cycle, and you cannot repay the money very quickly. More than that, there are also a lot of PRH units, and their repayment period will take decades. As a result, you can see that debts are being accumulated.’ [Mr. B]

According to Elliott (2017), the International Monetary Fund (IMF) warned China about its ‘dangerous’ growth in debt raising the risk of a sharp slowdown in economic growth. However, the Chinese government rejected the IMF’s criticism, stating that the strong growth outlook for the Chinese economy was the result of a rebalancing of the economy and the government’s reform programme and not a reliance on debt (ibid.). Nevertheless, Mr. B revealed the serious nature of the issue of government debt in Jiangsu Province, stating:

‘This year (2015), the public budget for Jiangsu is nearly RMB 1 trillion, whereas the government debt balance now is more than 1 trillion, which is the highest in China. What I said is just about direct government borrowings (borrowed and guaranteed by the government), not including the borrowings of state-owned companies and other state-owned platforms. So, how much in total have the government and its related bodies borrowed? I don’t know, because it is a national secret. But from the public data, you can imagine that it would be an enormous figure.’ [Mr. B]

5.5.2.2 The Slowing Economy

After 30 years of rapid growth, the Chinese economy has started to slow down. In a seminar at Hong Kong University, the US economist Robert Aliber even used the term *economic knockdown* to describe the current conditions in the Chinese economy.⁵⁰ In 2016, the GDP growth in China was 6.7%, the lowest point since 1990 (BBC News, 2017). The direct consequence of China’s economic slowdown is a possible decrease in the revenue receipts of local governments, which would weaken their ability to repay the money they have borrowed for the affordable housing sector.

⁵⁰ The researcher attended the seminar in June 2015, at the University of Hong Kong, Hong Kong.

In terms of this possible issue, Mr. B disclosed some sensitive information:

‘This concern is necessary, and some local governments have defaulted already, and thus required superior government to get involved to deal with the aftermath. But normally the media is not allowed to report on those issues, so the public has been out of the picture. It is not convenient for me to say more. But the issue of government defaults does happen in China, and more than a few. Now the economy is not very good, so I guess this kind of default will become more common.’ [Mr. B]

Regarding this problem, Mr. A appeared to be more direct and critical, stating:

‘No creditworthy economy can afford to see government defaults, because this may eventually lead to economic and financial crisis, for which the country of Greece has already been a lesson to the world. If the government information went public in China, I think people would see that many local governments have been Greece already.’ [Mr. A]

Thus far, this thesis has shown that the apparent reasons for the government to establish affordable housing REITs were based on two considerations: first, that cash could be released from the current PRH stock for new builds and debt repayment; and second, that social justice and housing management efficiency could be promoted. However, the underlying reason might be to use affordable housing REITs as a mitigation tool to solve the financial problem caused by the affordable housing policy failure in the short run, which this financial problem has deteriorated due to the contradiction between the government debt crisis and the national macro-economy. That is, the government debt balance has continued to increase with the significant contribution of the affordable housing sector, while on the other hand the national economy has been slowing down. For example, as mentioned above, the government debt balance for Jiangsu Province was above the government budget in 2015, which was more than RMB 1 trillion, ranking first among all Chinese provincial administrative regions. Meanwhile, local government defaults have started to occasionally happen but they are not reported. All in all, faced with these issues and the possibility of creating affordable housing REITs to release trillions of RMB from existing rent-based affordable housing stock appears to be highly attractive to the government.

5.5.2.3 For an Affordable, Fair, and Sustainable Rental Housing Market

The outcome of the government housing policy failure has been the accumulation of national debt and slowing economy, and the establishment of REITs offers a possible solution that would reverse this growing crisis and help the maturing sector to become an affordable, fair, and sustainable rental housing market in the long-run. As previously discussed, the national housing policy has shifted and now focuses on the rental housing market instead of addressing the homeownership issue for low-income households. However, based on actual practices such as the financing of PRH, it can be stated that the government has taken on too much responsibility. Thus, a new and creative state-market mix is needed at the consumption stage of the housing provision chain, especially for the affordable rental housing sector (refer to Section 4.2.2).

As demonstrated earlier, the government currently dominates the development phase of the housing provision chain, including site selection and project scale. It is believed that this will be difficult to change in the near future. Private developers are only involved in the construction phase to create a state-market mix. However, in the consumption phase, all the responsibilities and duties return to the government, particularly for affordable rental housing – from financing to property management. Therefore, it is expected that an affordable, fair, and sustainable rental housing market will only be possible if the existing housing scheme is changed as the scale of stock has reached a point beyond the government's ability to finance or management adequately. Stated more directly, it is believed that the existing affordable rental housing market would be difficult to sustain under current conditions, based on real facts obtained from the fieldwork suggesting that the government might be under increasing financial pressure.

As a result, the government has adopted REITs as an investment vehicle to create a new state-market mix at the consumption stage of the housing provision chain. The aim is to share the government's financial stress and current unlimited responsibility in providing affordable rental housing, and thus to increase the supply of affordable rental units and mitigate government debt crisis. This thesis argues that the government's motivation is rational and logical, but how REITs will work in China requires further investigations. Mr. A agreed with this statement:

‘Several documents issued by the central government have stressed the importance of REITs to the rental market of China. From initially using REITs as pilots, to actively promoting REITs today...you can see the changes in government attitudes. I believe that REITs will change and improve the current rental system, the whole (rental) system of the country...not just for the affordable housing sector. You will see...but there is still a long way to go for REITs to be actually launched...’ [Mr. A]

5.6 Conclusion

This chapter presented a detailed review of affordable housing policies and practice in China since the housing reform in 1998. Specifically, it identified why the government planned to build 36 million units of affordable housing between 2011 and 2015, and also determined the flaws in that plan. Nothing can happen without a reason. Local governments’ financial difficulties in building this affordable housing were all based on a major reason: due to various causes such as governmental failure regarding rules and a lack in motivation, the government had not built affordable housing for more than 10 years, so it anxiously created a problematic plan to seek quick success and gain instant benefits. This caused great financial stress.

To build 36 million units of affordable housing during the 12th five-year plan period, the government borrowed a large amount of money. Official data revealed that the major financing source in this project was government borrowings, while other so-called ‘important’ funding channels discussed by academia were not important in practice (see: Li, 2012; Shi, 2014; Wang and Zhang, 2007). This led the government to face financial difficulties. It is worth noting that the affordable housing units could be sold to repay the debt, which has been a consistent practice of the government since the housing reform. On the other hand, for affordable housing units for rent, such as PRH, this repayment method was not possible. Thus the development of rental units has created a huge public debt overhang which is unsustainable and, subsequently constraining further public investment in housing.

The idea of creating affordable housing REITs emerged from this situation. REITs are a well-established vehicle and have been used in many countries and regions for a long time. The Chinese government considers this vehicle to be the best option to liquidate the existing, huge

PRH stock to finance new builds and repay its debt. Moreover, it is expected that once affordable housing REITs are established in Nanjing, for example, there will be better protection for low-income tenants and more professional and efficient management of the PRH.

Finally, the underlying reasons for the government to create affordable housing REITs were based on its own potential risks: on the one hand, the growing government debt balance, and on the other, the slowing national economy. Local government defaults have already occurred and been kept secret. Creating REITs to liquidate trillions of RMB into cash from existing rent-based affordable housing stock thus seems highly reasonable to the government. However, in the longer run, the creation of REITs would also be helpful to build an affordable, fair, and sustainable rental housing market by 2020, as initiated by the central government. It would do so by creating a state-market mix at the consumption stage of the housing provision chain, whereas presently the government has unlimited liability, which has been deemed to be unsustainable.

This chapter clarified the background and motivation of the Chinese government to create affordable housing REITs. However, how to do this remains unclear. Therefore, the next chapter examines available and well-established REITs created from the affordable housing sectors around the world. The aim is to establish a reference pattern for the proposed affordable housing REITs in major cities in China, such as Nanjing.

Chapter 6: Affordable Housing Related REITs in Hong Kong and the United States

6.1 Introduction

So far, this thesis has shown that the Chinese government has strong motivations to create affordable housing REITs, and there is a large suitable stock of PRH that could be transferred into REIT vehicles. An old Chinese saying goes, ‘stones from other hills may serve to polish the jade of this one’,⁵¹ suggesting that existing REIT models and advice for practitioners managing these REITs may help in the development of a REIT in China, overcoming potential shortcomings to create an improved Chinese model. Overseas experiences provide valuable insights in this study to inform the development of the proposed affordable housing REITs in mainland China, given that the country has no prior experience establishing any REIT vehicle at all.

As mentioned in Section 3.5.2, few REITs are closely linked to affordable housing sectors in the world. This thesis identified four: Link in Hong Kong, CDT and HPET in the US, and Civitas in the UK. However, as mentioned before, Civitas just had its IPO in November 2016 and is hence not recognised as a well-established case study for the present investigation. Therefore, only the affordable housing related REITs in Hong Kong and the US were selected for detailed examination as part of the research.

6.2 Link REIT in Hong Kong

Link REIT was publicly listed on the Hong Kong Stock Exchange in November 2005, and represented the first REIT in Hong Kong after the Hong Kong government decided to privatise a portfolio of community shopping malls, car parks, and fresh produce markets previously owned by the Housing Authority (HA).

⁵¹ In Chinese: 他山之石，可以攻玉。

As a public REIT, detailed information about Link and its operations is readily accessible. According to its Interim Report 2016/2017⁵², Link has 160 properties across Hong Kong containing 10 million square feet of retail space and 72,000 car parking spaces, with another 884,000 square feet of retail space currently under construction. Moreover, Link REIT has expanded its portfolio with two properties situated in mainland China: one in Beijing and the other in Shanghai, together covering 1.8 million square feet of retail space. Link is currently Asia's largest REIT and one of the world's largest retail-focused REITs by market capitalisation which is wholly owned by private and institutional investors (World Economic Forum, 2017).

As previously mentioned, Link REIT is in fact a commercial REIT. Nevertheless, it has a significant impact on the affordable housing sector of Hong Kong, and even on the Hong Kong society. Hence, the specific area of interest in this study is how Link manages commercial real estate within public housing estates in Hong Kong, and its social and economic effects on the city. The researcher was interested in the development of this REIT and the insights that could be obtained from its experiences to inform the establishment of the proposed REITs in mainland China. Surprisingly, during the course of his fieldwork the researcher found that Link REIT has been highly controversial in Hong Kong. The following experiences and issues were identified and provide valuable insights for this study.

6.2.1 Similar Context of the Affordable Housing Sector

Several interviewees in Hong Kong and mainland China mentioned that the creation of Link REIT could be copied by the mainland due to its similar context: Hong Kong and mainland China have the same affordable housing schemes, the same protected subjects, and even similar large affordable housing stock. Moreover, importantly, they have a similar institutional framework in that the government takes the dominant role of building and providing affordable housing units to those in need.

The modern real estate industry that has developed in mainland China since 1998 was based on the model established in Hong Kong. Wang (2007) highlights the Hong Kong influences

⁵² Document can be accessed from:

http://www.linkreit.com/TC/investor/Documents/Financial%20Reports%20and%20Presentations_Tc/Financial%20Reports/Interim%20Report%202016-2017_EN.pdf

on the mainland China industry, pointing to the real estate development model, where the government relies on land finance through the state monopoly of the urban land market as the single most significant cause of high land prices, house prices, and profits for developers (ibid.). More positively, Wang (2007) suggests that Hong Kong's well-established affordable housing scheme, especially its PRH scheme, is a prime example that should be copied by the mainland. Today, his suggestion has become a reality as the Chinese government moves to create an affordable, fair, and sustainable rental market.

As discussed in Section 3.2.1, in the initial stages of the housing reform the Chinese government planned to establish a dual-track system for housing protection; this included ECH for sale and CRH for rent. After nearly 20 years of development, the housing provision in mainland China has in fact returned to this original notion, now with SOH for sale and PRH for rent. In contrast, for more than 50 years, the housing provision system in Hong Kong has consisted of PRH and home ownership scheme (HOS) housing without major changes.

Regarding this form of affordable housing scheme in the city, Mr. G, a member of the Legislative Council of Hong Kong at the time of the interview (hereafter referred to as Legislator G), explained:

‘Initially, PRH started to be built in 1954 to address the housing needs of low-income families in Hong Kong. And in 1973, the government announced a ‘10-year housing programme’ that aimed to provide accommodation for 1.8 million low-income people between 1973 and 1982. The Housing Authority was established in the same year (1973) to be responsible for the operation of the public housing in Hong Kong. Then the first phase of HOS housing was available for sale in 1978, as part of the programme. Since then, a dual system for housing provision has been established and confirmed in Hong Kong. Now, 48%, nearly half, of the Hong Kong population⁵³ lives in public housing. So PRH and HOS are very important housing schemes in this city.’
[Mr. G]

⁵³ According to the Census and Statistics Department of Hong Kong, the population in Hong Kong was 7.3749 million by the end of 2016; see <https://www.censtatd.gov.hk/hkstat/sub/so20.jsp>.

Furthermore, the households to be protected by the affordable housing schemes in mainland China and Hong Kong are essentially the same. Mr. H, a member of the HA, explained the target group for different types of affordable housing in Hong Kong as follows:

‘The background of the current affordable housing system is that the gap between the rich and the poor is very serious in Hong Kong. So PRH and HOS, but especially PRH has been the most effective way to solve the housing problem of low- and middle-income citizens, and to keep society safe and stable and maintain Hong Kong’s charm as Asia’s world city. As a result, one-third of people in Hong Kong, you know, low-income groups of people, are living in PRH now. The total number of these people is above 2 million, whereas HOS is designed for the ‘sandwich class’. Now HOS housing is sold at 70% of the market price. Say if a unit was priced at 5 million HKD, then the HA would sell it to you at 3.5 million under the HOS scheme.’ [Mr. H]

This thesis has established that the current affordable housing stock in mainland China is very large, containing more than 36 million units with 20 million PRH units housing 20% of the total population in China. In Hong Kong, however, the affordable housing sector is even more important, with 48% of the population now living in public housing, as highlighted by Legislator G. In addition, Legislator G had the same view as Mr. H did regarding the social base underpinning the current affordable housing system in Hong Kong and why this sector is so immense. He commented:

‘The reason why the affordable housing sector is so bulky in Hong Kong, ultimately, is because of the extreme disparity between the rich and the poor. Forty years ago, the ratio between private and public housing was 6:4, and today it is still 6:4 or even worse. The government has tried to increase the homeownership rate, but the rate just cannot be pushed up. On the other hand, this fact also shows how important the affordable housing sector is in Hong Kong.’ [Mr. G]

The above points have encouraged affordable housing REIT advocates in mainland China, as the affordable housing sectors in both the mainland and Hong Kong are highly similar in terms of housing forms, target households, and housing stocks. Many policy-makers and housing experts are asking why, if REITs could successfully be created from the affordable

housing sector in Hong Kong, mainland China cannot copy Hong Kong's lead. Mr. A from the CREA, expressed the same idea:

‘Many experts and government officials have suggested that we should learn from the Hong Kong experience. You know, because we have a lot of similarities (in the affordable housing sector). One of my friends, who is a senior official in the MOHURD, once told me that if Hong Kong can have Link, then the mainland can have it too...’ [Mr. A]

This statement reflects a general perception that mainland China could easily copy Hong Kong's affordable housing REITs based on the comparability of these two affordable housing markets. However, fully understanding the motivation of the Hong Kong government to create the Link REIT could yield important insights into whether or not establishing a similar REIT in mainland China is a feasible option for the Chinese government.

6.2.2 Motivation for the Creation of Link REIT – Correcting Government Failure

It is clear that the proposed affordable housing REITs in mainland China would be a remedial measure to solve the financial problems caused by the failure of the Chinese government in terms of its ability to provide affordable housing within an established affordable housing sector. Similarly, it could be argued that the underlying motivation for the creation of Link REIT in Hong Kong was also remedial action taken by the Hong Kong government to respond to its own failure. The motivations of both the central and Hong Kong governments are in fact intriguingly similar, as indicated by Legislator G:

‘The underlying motivation for establishing the Link REIT was to solve the financial problem of the HA. In fact, the HA had no money at that time, the affordable housing sector of Hong Kong could not make ends meet so the Link REIT was a life-saving straw to save the whole (affordable housing) sector.’ [Mr. G]

6.2.2.1 The Affordable Housing Finance in Hong Kong

To understand why the creation of Link REIT was necessary to save the affordable housing sector of Hong Kong, it is essential to review the affordable housing finance policy in the city.

Ma (2010) suggests that the similarity between Hong Kong and mainland China in terms of the affordable housing sector is that land is freely supplied and allocated by the government. However, one noticeable difference exists: the government in mainland China relies heavily on government borrowings for funding, whereas in Hong Kong the government depends on the sales of HOS housing. Legislator G explained this issue as follows:

‘We don’t borrow money from banks to build affordable housing. The major financing channel for the government to build PRH is the sale of HOS housing. We have a ratio, 1:2.5, which means that every sale of an HOS housing unit should be used to construct 2.5 units of PRH. This has been a traditional financing channel for the affordable housing sector of Hong Kong for decades.’ [Mr. G]

Yiu (2017) calls this affordable housing finance model the ‘sell to build’ model. He further explains how the ratio of 1:2.5 was calculated: if a unit of 500 square feet was priced at HKD 5 million on the open market, then HA would sell it to a qualified buyer at 3.5 million under HOS house pricing, or 30% off the market price. If it cost 1 million to build the unit, then the remaining income from the sale could be used to construct 2.5 units of PRH (ibid.). However, Mr. H revealed that this ratio was not achieved in practice:

‘The ratio of 1:2.5 has become just a target, as now the cost of building PRH has increased a lot. So 1:1 is only just possible. Taken together, selling one unit of HOS housing could contribute to a little bit more than one unit of PRH.’ [Mr. H]

Moreover, Mr. H pointed out the existence of several other financing channels for the affordable housing sector in Hong Kong. These are summarised in the following table.

Table 6.1: Major Affordable Housing Finance Sources and Amounts in Hong Kong, 2016

Sources:	Amounts (in millions HKD)
● Build and sell HOS housing to construct PRH	2,520
● Commercial Rentals	2,375
● Investments	1,101
● Others	237

Sources: Mr. H, 2016; summarised by the researcher, 2017.

As explained by Mr. H, ‘although other channels including HA investments and commercial rents could generate a significant cash flow for the HA, selling HOS housing to subsidise the PRH was still the most important and traditional way in the affordable housing sector of Hong Kong.’ This is an important point to highlight as this financing mode and tradition directly led to the government failure regarding the real estate market of Hong Kong, and thus the establishment of the Link REIT.

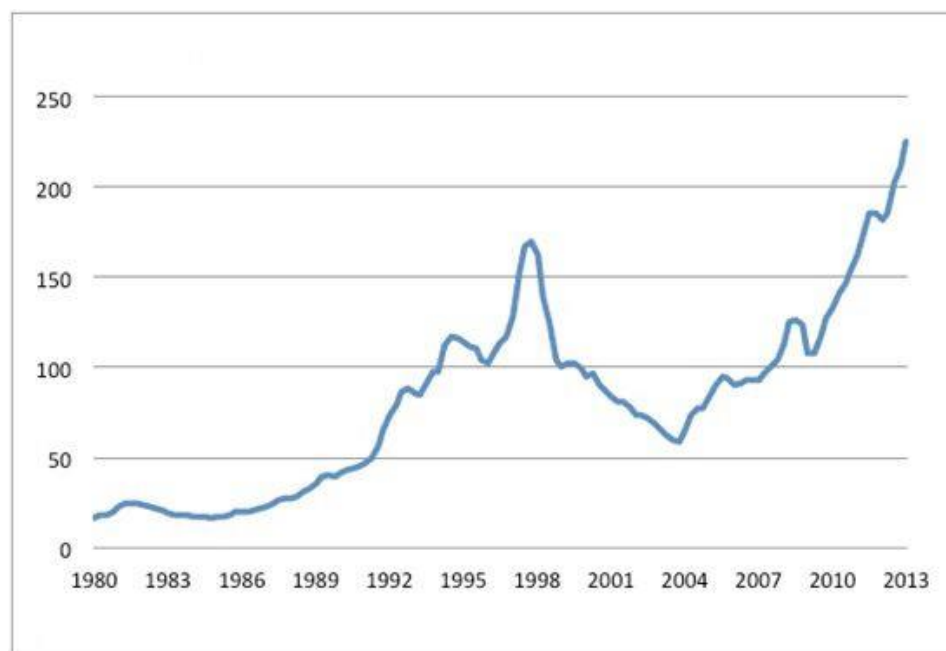
6.2.2.2 The Hong Kong Government Failure and the Creation of Link

Riley (2015) suggests that political self-interest is one of the most common causes of government failure. This is because the pursuit of self-interest among politicians can result in the misallocation of available resources. For example, choosing where to locate a new road or a school may be subject to special political interests (ibid.). Specifically, Palagashvili (2015) argues that politicians are normally in the business of maximising their votes and staying in office, and that there are special interest groups, who normally aim to protect and enhance their interests through for example campaign contributions to politicians, who facilitate such goals. This means that political decisions can be made without a full and proper cost-benefit analysis, and to benefit influential special interest groups. According to Riley (2015), this is a typical example of political self-interest leading to a government failure.

The government failure that occurred in the housing sector in Hong Kong could be recognised as textbook definition of such a case. According to Wang (2010), the house prices

in Hong Kong were hit badly by the Asian Financial Crisis in 1997, triggering a fall in these prices. Between 1997 and 2002, the average house price dropped by about 70% (refer to Figure 6.1 below) and the Hong Kong government announced the indefinite adjournment of its subsidised-sale programme of public housing (HOS) (ibid.). The aim of the government was to save the real estate market in Hong Kong, but political self-interests were evident.

Figure 6.1: Hong Kong Residential Property Price Index Between 1980 and 2013



Source: Rating and Valuation Department of the Hong Kong Government, 2014.

Regarding this issue, Legislator G stated:

‘Hong Kong’s economy is majorly driven by the real estate market. I believe all the people who are familiar with Hong Kong should understand that the richest persons in Hong Kong are all real estate tycoons. Starting in 1997, house prices dropped significantly in Hong Kong, and I think there were two reasons: one was certainly the financial crisis, and the other was the 85,000 Plan.⁵⁴ The result was that all major

⁵⁴ Upon his inauguration in 1997, Chief Executive Tung Chee-hwa pledged that there would be an increase in the homeownership rate from 52% to 70% in the next decade, and a decrease in the average waiting time for PRH from 6.5 years to 3 years. These ambitious targets prompted the building of public and private flats

developers, you know, very powerful in Hong Kong, kept lobbying the government to save the market, and the final bailout plan was to suspend the HOS indefinitely in order to decrease government housing supply so that people had to buy houses from private developers.’ [Mr. G]

The Hong Kong housing market started to recover in 2003, but the general public and scholars voiced discontent about this policy. Wang (2010) argued that the decision to suspend the HOS indefinitely required detailed consultation and investigation before the policy was implemented, but this was not done, thereby undermining it as a long-term policy. With regard to this issue, Legislator G said:

‘I suspect that a tacit understanding or even an agreement was reached between the Chief Executive and the developers. Those developers are very powerful in the electoral committee...so if you were not listening to their words, how could you be elected as the Chief Executive?’ [Mr. G]

Hence, it is clear that the political decision to suspend the HOS programme was made without a full and proper cost-benefit analysis, under the influence of the special interest group of major developers in Hong Kong. This inappropriate policy of stopping the sale and building of HOS housing has had far-reaching consequences for Hong Kong society today, and a serious effect on the government itself (Chen, 2017). As described previously, affordable housing finance in Hong Kong relied on the sales of HOS housing. The suspension of the HOS did help to save the real estate market, but this policy change blocked the primary financing channel of the HA and inadvertently suspended the supply of new affordable housing in the Hong Kong sector.

Wang (2005) argued that the HA’s revenue could no longer meet the expenditure levels needed to satisfy affordable housing after the policy stopped the selling and building of HOS housing. In response to this, the HA decided to sell the 151 shopping malls and 178 car parking lots it held in July 2003 to solve its financial problem. In December 2003, the HA agreed to transfer those assets into a new REIT, and in August 2004, this REIT was officially

starting from 1999/2000, known as the 85,000 Plan. The Plan indicated that a total of 85,000 units of public rental, HOS, and private ownership flats would be built yearly by the government and developers to fulfil the Chief Executive’s goal.

called Link REIT (ibid.). Finally, on 25 November 2005, Link REIT was listed on the Hong Kong Stock Exchange (Link, 2017).

Thus, it can be seen that the establishment of the Link REIT took place within a complicated political and economic environment at that time, and was perceived by local government as a remedial measure to correct for national government failure that had occurred as a result of political self-interest. Mr. H of the HA stated:

‘I think the creation of Link in Hong Kong was not an accident. There were a variety of reasons that led to its birth. But I think that one of the most important and direct reasons was that HA ran out of money and its major funding source, namely HOS, was cut at that time...so HA had to sell its assets to create the Link REIT, as it was the response to the previous wrong policy proposed by the government.’ [Mr. H]

Close parallels can be drawn between what happened in Hong Kong and what is currently happening in the affordable housing sector in mainland China. This sector faces tremendous financial pressure in response to the national house building plan, and thus wants to privatise its assets to liquidate its current capital to solve the financial problem by creating affordable housing REITs.

‘When I understand the context of the Link REIT in Hong Kong, I do believe REITs could be created from the affordable housing sector in the mainland. I know this thing is not that easy, but the direction is right.’ [Mr. A]

6.2.3 Positive Experiences with Link – Financial Successes

The motivation driving the creation of Link in Hong Kong was to solve the financial crisis of the HA. The launch of Link REIT was successful in this perspective. In general, the creation of Link REIT brought several benefits to Hong Kong, which are discussed in the following.

6.2.3.1 Major Goal Attainment – Solving the Housing Authority’s Financial Problem

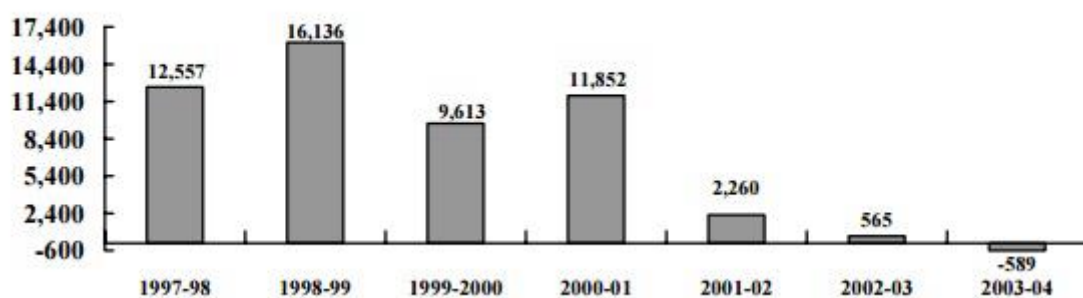
Dou et al. (2006) indicate that the HA received HKD 32 billion through the establishment of Link REIT, helping to overcome its financial problems. Based on the estimation of

independent valuers, the assets sold by the HA were worth HKD 33.8 billion as of 30 September, 2005, so Link REIT's IPO was generally consistent with market expectations and in line with the market price of the property at the time (ibid.).

Obtaining this locked-in capital through the creation of Link REIT helped the HA address its financial problems. Mr. H explained some of these financial issues as follows:

‘We sold shopping malls and car parking lots to Link because we could not build PRH as HOS was suspended. If we didn't do this, the whole affordable housing sector (in Hong Kong) would come to a standstill. From this perspective, the creation of Link helped us a lot at that time... 2004 was the first time that the HA had a financial deficit since the return to China (refer to Figure 6.2 below), and we expected that this kind of situation would continue for at least three years without the help of Link REIT. That would mean that we could not build any new PRH and the maintenance of current housing stock would be problematic for several years, which I could never imagine...’ [Mr. H]

**Figure 6.2: Running Surpluses and Deficits of the HA Between 1997 and 2004
(in: millions HKD)**



Source: Legislative Council Secretariat of Hong Kong, 2004.

Based on the statement above, the creation of Link REIT freed capital to allow more PRH to be built, and it was immensely beneficial for the affordable housing sector of Hong Kong, which had reached a standstill. Link REIT was successful in achieving this goal. As Figure

6.2 shows, the HA was also running at a deficit in 2003-04. The transfer of its assets into a REIT vehicle benefited the HA, as it could address this deficit and afford to build more housing. This enabled the affordable housing sector of Hong Kong to function in the years that followed. Legislator G shared this opinion, stating:

‘Between 2003 and 2011, the government stopped building and selling HOS housing.⁵⁵ So during these years, building PRH relied on the funding from the creation of Link. I must say, Link REIT was a great help, from the perspective of saving the affordable housing sector of Hong Kong financially...’ [Mr. G]

6.2.3.2 Financial Innovation – The First REIT in Hong Kong

Although the primary purpose of creating Link REIT was to help the HA overcome its financial difficulties, Link had a wider influence than was originally intended. This is because it was the first REIT listed on the Hong Kong Stock Exchange, which indicated that the Hong Kong government had allowed the launch of REIT investment vehicles in the Hong Kong market, thus increasing confidence (Knight Frank, 2014). Zhang and Zhu (2006) state that the market had very high expectations for REITs in Hong Kong, since this financial innovation not only created a new investment vehicle for private and institutional investors, but also provided a brand-new financing channels for old-fashioned real estate companies. From this perspective, the creation of Link REIT, the first REIT in the Greater China Region, had epoch-making significance. In this vein, Mr. H said:

‘Before the establishment of Link REIT, people in Hong Kong didn’t have any idea of what a REIT should be, but the market had been expecting the first REIT to be launched in Hong Kong for a long time. So, from a financial perspective, the creation of Link REIT suggested that Hong Kong had entered the REITs era, which meant a lot to Hong Kong, which is one of the most renowned international financial centres.’ [Mr. H]

⁵⁵ In 2011, Hong Kong Government decided to restart the HOS under pressure from the Central Government as house prices in general had increased significantly in Hong Kong and thus seriously weakened the ability of the people of Hong Kong’s to access affordable housing.

The creation of Link REIT had two important effects in Hong Kong. Firstly, it successfully solved the financial problems faced by the HA, and secondly, it signalled to the domestic and international investment markets that Hong Kong had entered the era of real estate securitisation. Regarding this issue, Legislator G shared more details:

‘You should understand the background at that time. Singapore had its first REIT in 2002, and Hong Kong started to prepare REITs after that, as Hong Kong and Singapore have been always competed to be the leader of Asia’s financial centre... I am not saying that the government created Link as a landmark because we wanted to compete with Singapore, but I am stating the financial importance of Link REIT for Hong Kong.’ [Mr. G]

6.2.3.3 Upgrade and Better Management of Previously Government-Owned Properties

You (2014) argues that after the transfer of ownership from the HA to Link REIT, the latter made great efforts to renovate and upgrade its shopping mall holdings to raise the grade of the property, optimise its portfolio, and thus attract more tenants and shoppers. These value-added activities were motivated by the managers’ drive to enhance the overall performance of the REIT. It can be stated that Link has been highly successful from this perspective, as its performance is directly reflected in its share price on the stock market. The initial issue price per unit of Link REIT was between HKD 9.7 and 10.3 in 2005 (Sina Finance, 2005), while as of 10 August 2017, the price was HKD 63.05, indicating that the unit price of Link REIT has doubled every two years since its launch (Bloomberg, 2017a). According to the financial information available from Bloomberg (2017a), the YTD return of Link REIT was 24.9% at the end of July in 2017, making Link REIT one of the best-performing REITs in the world.

Regarding this issue, Mr. H from the HA reported:

‘There is no doubt that Link improved the quality of the shopping malls previously owned by the HA from every aspect, such as the exterior and interior environment as well as the management. Even the people who are most against Link would agree with this point.⁵⁶ But the reason is simple. The HA’s purpose is to provide basic services to the local residents nearby. All we want is to “not lose money”. Whereas Link must

⁵⁶ The objection to the Link REIT will be addressed later.

make money. But how? Well, I think better quality and management of those shopping malls was very important...' [Mr. H]

In fact, even remote shopping malls owned by Link REIT, located far from the centre of Hong Kong, have been renovated and upgraded and are now under professional management. The following pictures (see Figures 6.3 and 6.4) were taken by the researcher during the fieldwork in Hong Kong, showing the differences between the retail spaces owned by the HA and Link.

Figure 6.3: Retail Spaces of Pok Hong Estate, Owned by HA



Source: Pictures taken by the researcher, 2015.

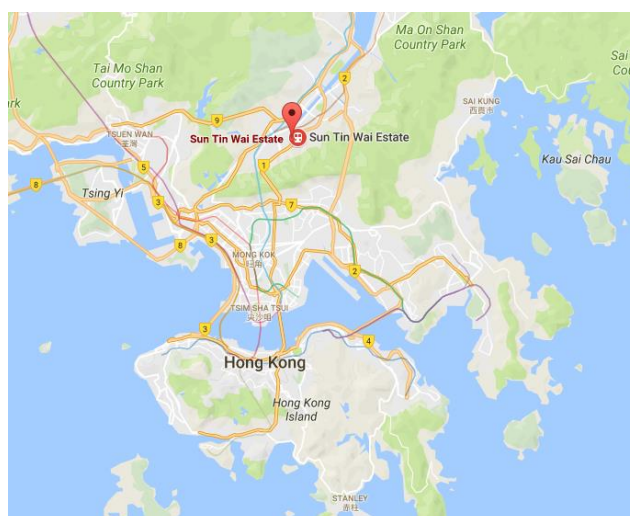
The pictures above are of the retail spaces in a public housing estate, namely the Pok Hong Estate in the centre of Sha Tin, owned by the HA. It is rare in that it has not been sold to Link REIT.

Figure 6.4: Retail Spaces of Sun Tin Wai Estate, Owned by Link



Source: Pictures taken by the researcher, 2015.

Figure 6.5: Sun Tin Wai Estate's Location in Hong Kong



Source: Google Map, 2017.

The pictures above are of the retail spaces of Sun Tin Wai Estate, which are owned by Link REIT and located far outside the centre of Hong Kong (refer to Figure 6.5).⁵⁷ Local PRH residents told the researcher that the commercial part of the estate might represent the minimum standard of property management of Link REIT.

⁵⁷ It cost the researcher more than an hour to travel to the Sun Tin Wai Estate by metro from the centre of Hong Kong on Hong Kong Island.

By intuitive comparison, the retail spaces owned by Link REIT were clearly classier and cleaner in organisation and presentation than those owned by the HA. Furthermore, Link used a higher building quality than the HA, which used temporary and shed-like structures. In fact, every shopping mall and retail space owned by Link is now under professional management, and this has impacted the quality of the retailing environment no matter how far it is from the city.

All in all, the creation of Link has been a financial success, not just for the REIT itself, but also for the affordable housing sector and the financial market of Hong Kong. Legislator G stated the following:

‘Link REIT is a success in Hong Kong without doubt, but only financially. You can see its share price, which is continually increasing. If Link couldn’t make money or had some problems, I think everything would be reflected in its share price, and I can’t see that there’s any problem...’ [Mr. G]

6.2.4 The Success of Link REIT – the Hong Kong Model

Link REIT has been a highly productive REIT in terms of its key financial indicators: capitalisation, growth rate, and annual return. However, this business success has certainly not been without costs to Hong Kong society. Referring this point as the ‘Hong Kong model’, the following investigates the key to creating affordable housing REITs. In general, it can be stated that the Hong Kong government made every effort to support Link to ensure its success as a REIT, since the Hong Kong model has the following specialties.

6.2.4.1 Only Including Assets with Positive Cash Flows into the Portfolio

This point was the most creative aspect of the development of Link REIT: commercial assets transferred were only transferred into it after careful selection. Since Ni and Yu (2012) indicate that the rents charged for PRH in Hong Kong are not set at the market rental value. Instead, they are based on the median household income and set at no more than 10% of this value, give or take 10% (ibid.). This usually makes the rental income attached to a PRH unit between 15% and 25% of the market rent achieved on similar nearby housing units (Z. Huang, 2010). This means that the rental income generated from PRH barely supports the affordable

housing sector, let alone providing a sufficient income flow to create an attractive investment vehicle like a REIT. Regarding this situation, Mr. H said:

‘Constructing and maintaining PRH must be a loss. The only problem is how much we lose each year...’ [Mr. H]

Hence, the HA carefully selected the profitable parts of its portfolio to create a REIT with stable and positive cash flows every year, namely its shopping malls and car parking lots. Legislator G shared the following details on this issue:

‘PRH cannot make money at all, so the HA worked out a solution to sell the commercial part of the public housing estates but hold all the PRH... as, you know, the shopping malls and car parking lots... they were the best assets of the HA. The occupation rate of those shopping malls was above 92% at that time, the cash flow generated from those assets was around HKD 3.7 billion in 2005. You can simply calculate the gross rental yield or ROE (return on equity)... which was above 10%, nearly 12% I think... Today, the performance of Link is still very strong, and is getting better... If you invested in the Link as a long-term investment, you should already be making a lot...’ [Mr. G]

6.2.4.2 Geographical Partition to Make Link Profitable

During the fieldwork in Hong Kong, the researcher found that in nearly every PRH community, shopping malls owned by Link REIT could be the only option for local residents to do their daily shopping. In other words, PRH residents had to shop in the malls owned by Link, or travel great distances to find the nearest alternative.

Legislator G explained the cause of this special geographical partition as follows:

‘This partition was purposely made for Link. In an affordable housing community, the Link mall is the only option for local residents to shop. You cannot even find mum-and-dad businesses for shopping nearby as this is not allowed by the planning regulation. This kind of planning regulation guarantees that Link can make money due to geographical partition.’ [Mr. G]

Based on Legislator G's statement above, this thesis argues that the HA has used location to restrict competition, giving rise to a monopoly for Link REIT, and in fact leading to market failure (refer to Section 2.2.1). Without doubt, this planning system has ensured a steady shopping flow for shopping malls owned by Link REIT. In this vein, Mr. H from the HA stated:

'Based on conservative estimates, more than half of the Hong Kong people have to rely on the commercial real estate owned by Link to meet their daily needs.' [Mr. H]

As a result, an article from *Real Estate*⁵⁸ in 2015 stated that Link REIT is the best REIT in Hong Kong, China, or even the world (Xian, 2015). While this may be the case, the present author believes that the strong government support could be the primary reason for Link's top position in Hong Kong in terms of commercial success. The reason why the government has continued to protect Link REIT appears to be closely guarded secret in Hong Kong. Only an anonymous official insider⁵⁹ revealed the following:

'Link REIT is a topic that cannot be discussed in Hong Kong, especially in political circles. The only thing I can tell you is that the government cannot let Link down as it is all about political correctness. Civil opposition is already very strong, and if Link can't succeed in business...well, it proves that Link is a total failure to the government, from the beginning to the end, doesn't it?'

Link's profitability is underpinned by only the best assets being transferred to it from the HA and restrictive planning regulation set by the government to protect its market share. Yet, the people of Hong Kong have opposed this situation, leading to social unrest. For example, Mr. I, a representative of the HKCSS, voiced his disquiet about the planning restrictions:

'Link has monopolised the shopping malls and street markets in almost every PRH community. The residents have no choice, really, and they can only be trampled upon...' [Mr. I]

⁵⁸ *Real Estate* is the most authoritative trade journal in China in the real estate field.

⁵⁹ This official required complete anonymity in this study.

Previous research has only emphasised Link's business or financial success, ignoring the social dimension. However, the civil society of Hong Kong has a different view of Link REIT, and its monopoly hold on the retailing market has already become one of the most serious social problems in Hong Kong.

6.2.5 Lessons from Public Opposition and Potential Risks

The newly elected Chief Executive Carrie Lam said in 2016 that Link REIT was one of the 'three big mountains'⁶⁰ in Hong Kong's livelihood issues, and urged Link to strengthen communications with district councils, district offices, and local residents to understand and meet citizens' needs (Information Services Department, 2016). The reason why such a high-level official spoke directly to Link to meet local needs was that the rising discontent around the impact of Link's activities on the livelihood of people in Hong Kong could no longer be concealed by its business success.

The mounting opposition to Link has arisen from two aspects: one is that the living costs of PRH residents have significantly increased, and the other is that it has become highly difficult for small businesses to survive following the creation of Link REIT. These two aspects are interlinked: Link's monopoly power means that it has been able to uncontrollably increase the rents charged in its units. Ye (2016) reports that on its creation, Link put in place the strategic policy of increasing the rent it charges by 9% every year. In addition, Link normally doubles the rents it charges tenants after every renovation of the shopping mall they occupy. For example, when Link REIT renewed the lease of the newly renovated Lek Yuen Plaza in Sha Tin (refer to Figure 6.6 below), the increase in rent was more than 100% of the rent charged before the renovations (Ye, 2016). As a result, many small businesses, or mum-and-dad businesses, and old shops were forced to move out or close down; and even community welfare institutions were not immune (*ibid.*).

⁶⁰ Two other major issues are the Mass Transit Railway (MTR) Corporation and mandatory provident fund (MPF) schemes.

Figure 6.6: Lek Yuen Plaza – Before and After



Source: Link, 2013.

Regarding this issue, Mr. I, from the HKCSS, said:

‘The strategy that Link REIT used was to keep increasing the rent, thus pushing all the businesses without stable cash flows out, and then it introduced large chain stores in order to remain profitable... and this strategy worked...’ [Mr. I]

However, the increase in rent has been passed on by retailing tenants to local residents, pushing up their living costs. Legislator G explained:

‘Basically, the living cost increased by 50% on average for those PRH tenants. Cheap goods were gone, and instead replaced by expensive products because small businesses with cheap stuff could not afford the rent anymore... So the public has had a very big complaint about Link REIT since its creation...’ [Mr. G]

This kind of complaint lies at the heart of social protests in Hong Kong. For example, in April 2016, the pan-democratic camp occupied the headquarters of Link REIT in Kwun Tong, Hong Kong for nearly eight hours to ask Link to stop increasing the rents it charges, and to ask the Hong Kong government to buy back Link REIT (Oriental Daily, 2016). Figure 6.7

below shows protesters gathering at the Link headquarters and the Hong Kong police asking the crowd to disperse.

Figure 6.7: Occupy Link Campaign in 2016



Source: Oriental Daily, 2016.

It appears that the government had grievances that would be awkward to disclose, as explained by Mr. H of the HA:

‘We never promised cheap goods (for PRH tenants). Goods were cheap as the rent used to be very cheap because the shopping malls owned by us didn’t have the purpose of making money, as I said before. Now Link has to make money so they have increased the rent, and as a result the price of goods has increased too... It’s totally normal market behaviour... PRH communities represent a third of the total interests in Hong Kong, there are too many different mouths with different voices, and basically we are blamed for everything we have done...’ [Mr. H]

In general, from the perspective of investors, Link's strategy to enhance its performance should be appropriate, but from the perspective of local residents, and especially PRH tenants, the creation of Link has been catastrophic. Hence, the government is in the middle of an awkward conflict. The underlying reason for this contradiction is the conflict that lies between private sector entrepreneurial activities and the social goals of public sector housing. The valuable lessons that should be learned from these tensions when establishing an affordable housing REIT in the mainland are presented in the following.

6.2.5.1 The Predictable Conflicts Between Public and Private Sectors

Based on the evidence from Link in Hong Kong, it is clear that return on investment is the first priority of the private sector, as its for-profit character overshadows social goals. This is in stark contrast to the public sector, where non-profit services attach greater importance to social goals than generating profits. The latter is clear in the way the shopping malls owned by the HA are managed. The tensions regarding Link REIT originated from the two sides' different goals.

Hindsight reveals this to be an obvious problem, but during the creation of Link REIT, the potential for tension and conflict was at best missed, and at worst ignored. Legislator G clarified this as follows:

'I admit that we ignored the social interest when we created Link. The return on Link has always been good, but the fact is that behind this is the sacrifice of life choices of those PRH residents. The story of Link has proved that Link only cares about profits and not the interests of PRH residents, but in fact we didn't expect that the conflicts of interest (between public and private sectors) would be so obvious and serious...' [Mr. G]

Thus, in transferring commercial stock from its affordable housing estates into a REIT, it would be necessary for the Chinese government to realise this potential conflict and put in place mechanisms for social goals.

6.2.5.2 Public REITs Regard Profits Above other Goals and Are Difficult to Coordinate

Link is a public REIT listed on the Hong Kong Stock Exchange. Thus, to maximise its profits, management must be accountable to its investors, or unit holders, instead of to PRH residents or the government. All of Link's activities, such as the renovation of shopping malls and the increase in rents, have in fact followed the requests of its investors. In addition, as a public REIT, Link's performance is regularly presented and published in financial reports to enhance investors' confidence and thus attract more investments. As a result, the room left for the government to coordinate with Link REIT is highly limited. In this vein, Mr. H stated:

‘If we put a lot of restrictions on Link, investors will lose their confidence and everything will be reflected in the share price right away. But if there were no restrictions, a lot of problems would occur. Based on the agreement between the HA and Link, the HA is now unable to influence Link, but Link can make requests to us, and they can ask for compensation if the HA affects their operation... so things become very hard...’ [Mr. H]

Regarding the coordination between the public and private sectors, Legislator G proposed the following solution based on his experience with Link:

‘I think it would be much better if Link was a private REIT. Private REITs can adjust their goals based on the will of part of the shareholders, and normally the management of private REITs is easier to negotiate. Let's say... if Link was a private REIT and the government gained a part of its share, then it would be possible for the government to negotiate and coordinate with Link to set a return rate of 6% for investors, for example, which would mean that Link could still make money, but also take social purpose into account... you know, not make that much... But now Link is a public REIT, so it is impossible for this kind of thing to happen, as the job of a public company is to make money, the more the better...’ [Mr. G]

6.2.5.3 The Public Passes on Its Grievances to the Government, Resulting in More Difficult Management

The issues generated by Link REIT have resulted in PRH tenants boycotting government affordable housing policies. In turn, this has caused governance difficulties, and not just regarding opposition to the Link. For example, Mr. H from the HA told the researcher:

‘We are always in a deficit running PRH. Current rents for PRH are HKD 1,700 per month, and if we increased the rents to 1,800 per month, then we could balance revenue and expenditure. But people (in Hong Kong) were against this proposal as they thought they had been exploited by the Link, so there was no reason to increase the PRH rents anymore. In the end, there was nothing we could do...’ [Mr. H]

Other than the lessons and experiences mentioned above, there was a potential risk or uncertainty in the affordable housing sector of Hong Kong after the creation of Link: the redevelopment of public housing estates. The issue of the redevelopment of public housing communities in Hong Kong cannot be examined now, but should be taken into account by the decision-makers in the mainland before the establishment of affordable housing REITs. Regarding this potential risk, Legislator G stated:

‘The sub-sale of commercial parts in 2005 to Link REIT converted public housing estates from single ownership to multiple ownership.⁶¹ Currently there are no redevelopments of public housing communities but this problem is foreseeable as some of the estates are aging rapidly...’ [Mr. G] (refer to the table below for details)

⁶¹ In Hong Kong, the ownership of housing estates refers to the shares, or proportion of ownership. For example, Link REIT owns the commercial complex and car parking lots of Tsui Ping (North) Public Housing Estate. However, legally Link does not own those commercial properties, but instead owns 6% of Tsui Ping (North) Estate.

Table 6.2: Aging Public Housing Estates in Hong Kong

Estate	Completion Year	Building Age (as of Dec. 2017)
Model Housing	1952	65
Sai Wan	1958	59
Ma Tau Wai	1962	55
Wo Lok	1962	55
Choi Hung	1962	55
Fuk Loi	1963	54
WahFu (I)	1967	50
Wah Fu (II)	1970	47
Ping Shek	1970	43
Mei Tung	1974	42
Kwai Shing West	1975	42
Lai King	1975	42
Lei Muk Shue (II)	1975	41
Hing Wah (II)	1976	41
Lai Yiu	1976	40
Nam Shan	1977	40
Cheung Ching	1977	40
Yue Wan	1977	39
Choi Wan (II)	1978	39
Fu Shan	1978	39
Cheung Shan	1978	39
Shek Kip Mei	1979	38

Source: Legislator G, 2015; modified by the researcher, 2017.

Hong Kong HA (2014) fully understands this potential risk, and addressed this issue in an unclassified document:

‘For divested estates which are co-owned by the Link and the HA, it is necessary to have the cooperation and agreement of the Link to jointly address the issues relating to the legislation, land lease, deed of mutual covenant and land ownership, etc. and to derive a redevelopment model that is considered acceptable by both the Link and the HA, before we can embark on any redevelopment.’

However, according to Legislator G, it is not clear to the HA how it can collaborate and cooperate with Link to conduct the foreseeable redevelopment:

‘The redevelopment is a very complicated problem. We don’t have a concrete scheme now. So it might be good... or bad. We don’t know... everything is uncertain. And to be honest, we didn’t realise this potential issue when we made the decision to create Link...’ [Mr. G]

In short, it can be stated that Link REIT in Hong Kong was created to address one problem, but the government’s short-sightedness in fact resulted in more problems. The public sector, namely the HA, benefited in the short run but paid the price in the long run as it has created something that now impacts how it manages the assets it has retained. While the private sector and its investors have achieved great success due to the appreciation and strong performance of Link REIT, the low-income group of people who live in the affordable housing communities have suffered the greatest loss, with the cost of living increasing significantly.

Based on the insights from Hong Kong, creating affordable housing REITs in mainland China would not be an easy task and would require all-round and careful considerations. In contrast, affordable housing REITs in the US are based on a business model where their creation appears to be much simpler.

6.3 CDT and HPET in the United States

The Community Development Trust (CDT) was the first REIT to be established in 1989, and it is the largest in the US that focuses on investing in affordable housing (OFN, 2017). The goal of CDT is to stabilise and revitalise the affordable housing stock in the communities it serves by providing capital through two programs. First, CDT makes equity investments in affordable multifamily communities to own and operate housing stocks for cash flows, and second, it offers direct loans to affordable multifamily communities and purchases mortgages from other lenders such as community development financial institutions (CDFIs) for interest income (ibid.).⁶² Currently, the total value of equity and debt investments made by CDT is above USD 1.1 billion spread across 42 states, helping to preserve or add over 36,000 units through its equity and debt programs to the nation's affordable housing stock (ibid.).

Established in 2012, Housing Partnership Equity Trust (HPET) is a younger REIT, but it is the first REIT owned and operated on a not-for-profit basis to preserve affordable rental homes for low- and middle-income households (HPET, 2017). This social-purpose REIT is sponsored by the Housing Partnership Network (HPN) and owned by 14 HPN members⁶³. It invests in long-term and low-cost equity and now owns 2,605 units of affordable housing with a value of USD 287 million (ibid.).

As mentioned in Section 3.5.2, REITs have a long history of participation in the construction and management of affordable housing units in the US tracing back to 1950s. It could be stated that REITs have been syncretised well with the affordable housing sector, although it is not a significant part of the US REIT industry. Mr. J, a senior official of Nareit, stated:

‘REITs and affordable housing have a long history of working together in the US, but affordable housing REITs are not a big part of the industry. I think the only affordable housing REITs here are CDT and HPET, which personally I am not very familiar with but I think they are doing well based on public information.’ [Mr. J]

⁶² Since the purpose of establishing affordable housing REITs in China is to liquidise the existing PRH stock, only CDT's equity program was studied, and not its debt program.

⁶³ The National Housing Trust (NHT) is one of the HPN members.

6.3.1 Affordable Housing as Business in the US

As shown above, a common motivation behind the creation of affordable housing REITs in Hong Kong and mainland China was to solve financial difficulties experienced in the public sector, but this is related to a number of other considerations. In the US, however, things are much simpler as affordable housing has been a business for decades, and REITs have been set up as an investment vehicle with the sole purpose of generating profits within a tax-transparent environment. This has been possible because some government programs have run in parallel to enable the private sector to participate in the affordable housing sector and make a profit. Mr. K, a senior official of the National Housing Trust (NHT), stated the following:

‘The stories in China and Hong Kong were very impressive to me, but here is different... affordable housing is business, very big business. We are REITs to make money, not to finance the public sector...’ [Mr. K]

Specifically, two programs are in operation in the US to make affordable housing assets attractive: the Section 8 Program and the Low Income Housing Tax Credit (LIHTC) Program.

6.3.1.1 Section 8 Program

As discussed in Section 3.4.1, with the Section 8 Program, affordable housing business operators in the US, such as affordable housing REITs, can receive rents set at the market level. This program was created under the Housing and Community Development Act of 1974, which further amended the US Housing Act of 1937 (HUD, 2017b). Under the Section 8 Program, affordable housing tenants only need to pay about 30% of their income as rent, and the rest of the rent is paid for by federal funding (ibid.).

According to the official definition setting out its purpose, the Section 8 Program increases affordable housing choices for very low-income households by allowing them to choose privately owned rental housing in two different forms. One is tenant-based assistance, namely the Housing Voucher and Certificate, which allows tenants to freely choose their housing location; and the other is the project-based assistance, which requires the tenant to live in a specific property. No matter the form adopted, landlords either individual or institutional receive the full market rental value. Currently, the Section 8 Program helps over 1.4 million

households in the US by paying landlords the difference between what the household can afford and the rent for the housing.

Thanks to this program, affordable housing REITs can generate stable cash flows from their portfolios at very low risks. Mr. L, a senior official of CDT, explained:

‘We only invest in properties with Section 8 project-based contracts, as this ensures us to receive stable cash flows, very stable... as the majority of rental is guaranteed by the federal government. For the rest of the rental, you know, paid by the tenants, mostly it is good, but sometimes we might lose one or two tenants. But you know, affordable housing in the US is a scarce resource, so there is no need for us to worry too much as there is a long waiting list of qualified tenants who want a unit from us.’
[Mr. L]

Mr. K of NHT shared a similar view:

‘We invest in normal housing as well as Section 8 housing projects. We feel very confident about our investments as market rentals can be guaranteed under the Section 8 Program.’ [Mr. K]

6.3.1.2 The LIHTC Program

In the US, the LIHTC program (hereafter referred to as tax credit) is a highly significant policy that encourages the private sector to participate in the affordable housing business, as explained in Chapter 3. The official line of the tax credit program is that it is the most important source of affordable housing in the US today (HUD, 2017c). This program was created by the Tax Reform Act of 1986, which gives the states and local agencies around USD 8 billion a year to issue tax credits for the acquisition, rehabilitation, or new construction of affordable rental housing targeted at low-income households (ibid.). Based on this program, over 1,460 projects and 110,000 units on average were placed in service annually between 1995 and 2015 (ibid.).

The tax credit program cannot be used by REITs directly as they are two different modes of conducting affordable housing business. To illustrate this, Mr. K worked through a typical tax credit transaction, which he referred to as the 'Jie and Michael' deal:

'Jie and Michael are good. Jie and Michael find 100 units in Cleveland. They team up with National Housing Trust to buy it. Say it is 100 units, and it is 50,000 each... it is 5 million total, right? So, 5 million dollars is required to buy the property. And there is another 10 thousand dollars in rehab of each unit to you. There is another million in rehab... so a total of 6 million dollars to acquire the property, right?' [Mr. K]

'They can charge rents to people who live there to raise about 3 million dollars in debt, 3 or 4 million dollars in debt, so there's a 2 million dollar gap, right? They go to the housing financing agency in Columbus, Ohio. They say, "we would like to apply for tax credits". "Oh, really? Tell us where the property is..." "It is in Cleveland." "Oh, really? Tell us what you're gonna do..." "We will make it green, we will put up a community centre, we will do all those good things to make everything a lot better than before. OK, we will give you... 1.5 million dollars in tax credits."' [Mr. K]

'Jie and Michael say, "that's great". They compete, they win. And Jie and Michael, by the way, are competing against lots of Jies and Michaels in Ohio, it's not... you don't get there when you walk in, you have to compete. It is actually a competition. Only one out of seven applications will be accepted. Like gambling!' [Mr. K]

In this example, it was assumed that \$6 million in total was required for the proposed 'Jie and Michael' affordable housing project. For this amount, 3 million would be raised through debt financing based on the rental income. After heavy competition, another 1.5 million in tax credits was obtained.

'They win. They go to a syndicate, the syndicate goes to a bank and says, "I have these tax credits, I am going to give you these tax credits and you're gonna give me money." Why?' [Mr. K]

‘Because the bank has the tax obligation to the US government. Every credit it buys reduces its tax liability by one dollar. So it buys 1.5 million, it reduces its tax exposure by 1.5 million.’ [Mr. K]

‘How much would the bank give me for that 1.5 million? 1.3 million, 1.2 million... they won’t give me 1.5 million. So now Jie and Michael have 1.3 million. So 4 million from the debt and 1.3 million from the tax credits, they’re still 700,000 dollars short, right?’ [Mr. K]

‘Where do we find these 700,000 dollars? The housing trust fund from the state, or... maybe a little bit of loan from National Housing Trust. They couple it together with other money, now they have the money to buy and rehab it.’ [Mr. K]

These 1.5 million dollars in tax credits could be turned into cash by selling them to investors, for example the bank. However, the cash contribution would be for some amount less than the credits reserved for the developer, in this case it was 1.3 million. The difference between the total credits obtained (1.5 million) and the contribution to buy the credits (1.3 million) was one of the bank’s primary motivations to make the deal: it is the bank’s profit. Additionally, the bank would require a discount to reflect the time value of money. After the 1.3 million was obtained, the remaining 700,000 dollars would be raised by the loan from the NHT and other housing funds.

‘Wait a minute, but where are Jie and Michael gonna be paid? Did all this work? Who’s gonna pay them? Right?’ [Mr. K]

‘They get a development fee. They get 15% of the total development cost. The total development cost is 6 million. So they get a 900,000 dollar developer fee, 15%. Do they give the money up front?’ [Mr. K]

‘No, over a period of years, say 10 years, it has to be occupied... you have to meet the benchmark every year to get the development fee paid. Every year, every year they come back, some years they do not make it. So they may never make that 900,000. They may make 750,000, but you’re gonna make something, all the time.’ [Mr. K]

‘At least you can make something. Plus, if you operate correctly, there will be some cash flow. Not a lot, but some cash flow. We will come back to REITs in a minute... it is the tax credit deal, not the REIT. In this deal, 100 units in Cleveland, Ohio... we split that, you get... say 25,000 for cash flow, and may get 50 to 75,000 deferred developer fees. It is called the deferred developer fee. Deferred every year, OK? So that’s the tax credit deal.’ [Mr. K]

By law, it is permitted a developer fee of 15% of the total cost of the affordable housing project to be included in eligible basis, or say the total amount of cost (Paul, 2016). So in this case, the developer fee was 900,000 dollars. Based on the statements above, a developer fee represented payment for a developer’s services, needing to measure up to some standard set by the government, which was deferred every year.

In short, because of the national policy environment, the affordable housing market in the US is highly different to the sectors established in mainland China and Hong Kong. That is, the affordable housing sector in the US is a profitable venture, and the private sector is therefore keen to be involved. REITs are only one type of organisation and investment company that participates. Mr. K said:

‘There are many, many, many other organisations like National Housing Trust doing the same thing to preserve and improve affordable housing in the US. We are just one of thousands. Even one person, individual person can do this business, if they have the wealth, if they have the bank balance. My nephew lives in Los Angeles, he has a job... he and his friend have bought four apartment buildings, small apartment buildings, and they are renting them up as affordable housing units. They are landlords. So there are thousands and thousands of people like that in the US...’ [Mr. K]

6.3.2 The Motivation to Create Affordable Housing REITs in the US

As mentioned above, REITs are just one form of investment vehicle used in the affordable housing sector of the US. Mr. K described a typical affordable housing REIT transaction as follows:

‘What if Jie and Michael said, “you know, we want to try to do it through a REIT. We don’t want to compete with the tax credits, we are tired of doing tax credits, it is hard to win. We just want to see if REIT would work,” right?’ [Mr. K]

‘So they might go to and think about the Housing Partnership Network. And Michael says, “I know this Housing Partnership Network, I know the National Housing Trust is a member of that network. I bet they might let us join them to get REIT dollars. We would never have to compete; we would just get REIT dollars. We won’t get a development fee, but we might get more cash flow.”’ [Mr. K]

‘Same deal... 100 units, same cost, 6 million dollars... The REIT might come in for, say 2 million... equity, 4 million in debt. The REIT will charge higher rent, return may be... 10% of return. But probably, at the end of that deal, Jie and Michael will get 80,000 a year in cash flow...’ [Mr. K]

‘You can charge higher rent. Or, or... you don’t need to go through the whole tax credit process. The tax credit application process is a time-intense process; it is spending a lot of time. The REIT is easier. So they might get more cash flow from the REIT. The REIT won’t work properly if it needs a big rehab. The REIT only works, in the US anyway, if it’s a modest rehab.’ [Mr. K]

So far, one should understand that affordable housing REITs are just a small part of the US REIT industry, as stated by Mr. J of Nareit. Moreover, they are also a relatively small part of the affordable housing business in the US when compared to the tax credit deal described by Mr. K.

‘To give you a sense, the tax credit is about 7 to 8 billion a year. Affordable housing REITs in the US may be 200 million a year, max. So we’ve got a long way to go to be equivalent to the dollars of tax credit. The tax credit is the real deal, it is 7, 8 billion dollars a year, it is about 100,000 units a year, it is a real market. Affordable housing REITs are still emerging. CDT is established, Housing Partnership Network hopes to be established, it is off to a great start. My guess is that in 5 to 10 years, that 200 million will become 800 million, but it will not become 7 or 8 billion.’ [Mr. K]

The underlying reason behind the different weighting in the affordable housing business is simple: tax credits are recognised as free gifts to affordable housing developers, whereas these do not exist for affordable housing REITs. Mr. K explained:

‘Remember Jie and Michael competed to get the tax credit. They did not pay anything for that tax credit, they just competed. They got free money, 1.3 million! If we win, we get 1.3 million dollars. It is like a grant.’ [Mr. K]

‘Here, there is no free money. The REIT, there is no free lunch. But the tax credit, if we win, it is a free lunch. That’s why the tax credit programme is so attractive to developers, and to lenders. Everybody likes it because it is consistent, you don’t have to repay the money, it fills real gaps.’ [Mr. K]

‘With the REIT... remember I talked about the rehab, if you have a 50,000 dollar rehab, you cannot do it with a REIT. Because the REIT doesn’t provide that much low-cost capital to do that kind of rehab. Here (for tax credit), I’ve got a lot of money to play with. So, if it is a 10,000 dollar rehab, I might able to do it with the REIT. But remember the rehab... I cannot increase the rents enough to pay for the rehab; I can do that in the private market, but not in the affordable market. So, that’s why tax credit is still popular. We support it, very strongly, we do.’ [Mr. K]

Under the backdrop of affordable housing REITs being less attractive than the tax credit deal in the US, the motivation for establishing affordable housing REITs was not clear-cut. However, further research revealed the reasons for doing so.

6.3.2.1 Less Competition

As explained by Mr. K, only one out of seven competitors is given tax credits, so the level of competition for these is highly intensive in the US. Indeed, Kimura (2015) suggests that the LIHTC market can be summarised in just one word: competitive. This is because now syndicators not only have to compete with each other, but there is also increasing pressure on them from direct investors (ibid.). These direct investors have an impact on syndicators by absorbing part of the market share, and they can distort prices in the tax credit market where they aggressively bid on deals (ibid.). As a result, the competition becomes even more

aggressive in an already ultra-competitive environment as the conflict between the market's high demand for credits and their limited supply increasingly worsens. Affordable housing REITs are investment vehicles that everyone can use freely without the same level of intense competition. According to Mr. K, this represents a highly important motivation driving the establishment of affordable housing REITs in the US:

‘Although tax credit is very popular, the REIT still has the attraction because it is less competition, it is private, it is just there, it is a facility that is available, free to use.’
[Mr. K]

Mr. L of CDT shared a similar view:

‘Tax credit is very hard to win, so we don’t think about it but focus on cash flows...’
[Mr. L]

6.3.2.2 Tax-Effective Vehicle

As mentioned in Section 3.5.1, the greatest characteristic of a REIT is that it is a tax-effective vehicle, and to maintain its tax-free treatment, it normally has to distribute 90% of its income annually. In the US, it can be said that affordable housing REITs are primarily motivated by their tax-free status.

In this regard, Mr. L said:

‘We chose to be the structure of a REIT, which was really just a tax decision. So we decided to be taxed as a real estate investment trust to do affordable housing business here, but that doesn’t mean you have to be a REIT to do the same thing.’ [Mr. L]

Similarly, Mr. K also addressed the tax purpose:

‘We are a REIT also because of the tax purpose. I think the structure is not the most important thing but our goal is. We are here to preserve affordable housing and we are a REIT to offer tax-efficient exposure to the affordable housing market.’ [Mr. K]

Thus far, it can be concluded that the motivations for establishing affordable housing REITs in the US were all based on market considerations with the focus on tax efficiency, which is significantly different to Hong Kong and mainland China's political considerations to correct government failures.

6.3.3 The Successful Stories of CDT and HPET – the US Model

Although the context of establishing affordable housing REITs in the US differs greatly from those in Hong Kong and mainland China, there are still some useful factors from the US that the proposed affordable REITs in mainland China could learn from and copy. These factors are discussed in the following.

6.3.3.1 Affordable Housing REITs Should Be Private Rather Than Public

As Legislator G explained, if Link REIT was established as a private unlisted vehicle then it would be much easier to coordinate with the public sector to create outcomes acceptable to both sides. In the US, being private is the key to affordable REITs' success, as only private REITs can balance two goals: to preserve and expand the supply of affordable housing, and to earn attractive returns for shareholders.

Specifically, Mr. L stated the importance of being a private REIT to conduct affordable housing business:

'I think most REITs are publicly traded... REITs. A couple of things happen. One is, if they are publicly traded, the boards of those REITs get concerned about their responsibility to their shareholders, which is to produce the highest return. So we describe ourselves as a double bottom-line organisation: we have a mission, and we have a return. I think for public companies, it is harder to balance those two, and move towards the return side. I think most REITs rely on the sales of properties to generate returns. And that to me... my feeling is that it conflicts our mission, which is to provide long-term affordability, and long-term capital for affordability. So there are some properties we've owned for 15, 16 years now. And many REITs would have sold them worth more money than what we paid for them and many REITs would have sold those. Whereas we see the long-term ownership of those properties as

ensuring stability, which is good for the property and good for the tenants. And publicly traded REITs might say, “well, our strategy is to sell these properties in 5-7 years,” and I think that conflicts with our thought of providing stability over a longer period of time. That’s why we choose to be a private REIT. I think we probably will be a private company for the foreseeable future...’ [Mr. L]

Mr. K shared the similar opinion that being a private REIT could balance social and economic goals simultaneously, saying:

‘Well, as a private REIT, we are agreed, under the REIT term, to charge affordable rents, we don’t rise... In an open REIT in the US, the operating principle is come in, raise the rents, and reduce the expenses. And that’s how it works. It is not wrong, but it is not good for tenants. In our REIT and CDT, there is another factor: we want to keep our rents relatively affordable. We might raise rent a little, but we want to prevent displacement; prevent people from moving out because they cannot afford us. We can manage this as a private REIT. Our return is not bad, but not high, but we agreed to keep rents affordable.’ [Mr. K]

6.3.3.2 Institutional Investors Should Be the Target

In contrast to Link REIT in Hong Kong, which is a publicly listed company with diverse investors, the investors in CDT and HPET are institutional, not private. For example, the investors of CDT include Bank of America, Capital One, Fannie Mae, JPMorgan Chase, Morgan Stanley, Wells Fargo, and many other renowned institutional investors,⁶⁴ and the investors of HPET include Citi Bank, Morgan Stanley, the Ford Foundation, and many other organisations.⁶⁵ It can be seen that no private investors are involved in affordable housing REITs as these are not perceived as mainstream investment vehicles. In conclusion, it makes sense that institutional investors should be the target investors for those affordable housing REITs.

Regarding this issue, Mr. L of CDT told the researcher:

⁶⁴ See <https://www.cdt.biz/about-us/investors/>

⁶⁵ See <http://hpequitytrust.com/investors-members/investors/>

‘We only look for institutional investors. Because it would be hard to go the street and find someone and say, hi, would you like to invest in an affordable housing REIT? People are not familiar with this area, and which affordable housing REITs can make money. Whereas institutional investors are much easier to deal with...’ [Mr. L]

The same issue was mentioned by Mr. K of NHT. He said:

‘We have institutional investors only. Because it’s not necessary to find those non-institutional investors if they don’t have an idea of how affordable housing REITs work. Investor education may work for them (personal investors), I think, but it’s costly and time-consuming, which I don’t think is necessary...’ [Mr. K]

However, regarding the last point, it must be mentioned that choosing institutional investors only might be a luxury for private REITs, while publicly traded REITs cannot do that. Mr. L stated:

‘We can choose our investors because we are a private REIT. If we were going public, investors, no matter institutional or non-institutional, would choose us... things would go in the exact opposite direction.’ [Mr. L]

Based on the above information, it can be concluded that the affordable housing sector in the US is totally different to those of Hong Kong and mainland China. The US government has created attractive policies and thus an effective affordable housing market for REITs to participate in the sector. All in all, these case studies show that it is possible for REITs to be set up as investment vehicles that can earn profits from affordable housing as well as preserve and expand the supply of this housing in the US.

6.4 Summary and Implications to China

Based on the analysis and evaluation of the affordable-housing-related REITs in Hong Kong and the US, some deeper thoughts have been proposed in this thesis. These could be necessary and valuable to examine when considering the future similarities in mainland China.

6.4.1 Why Do Affordable Housing REITs Work in the US and Not in Hong Kong?

In a deep sense, it is believed that the existence of affordable housing REITs in the US is due to the country's unique and superior affordable housing policies, which were addressed in Section 3.4.1. Furthermore, interviewees in the US acknowledged that these policy advantages have made affordable housing a business in the country, and that REITs are just an investment vehicle to run a business primarily for the purpose of enjoying the benefit of tax exemption. Among these policies, the Section 8 Program and tax credit are the most significant in terms of the affordable housing sector in the US. In addition, as discussed in Chapter 3, the US government has created a robust and long-term funding channel to attract private capital to invest in affordable housing through these policies. In other words, the US government has used limited public financial resources as incentives, such as housing vouchers and tax credits, to attract much more private and social funding into the affordable housing sector. This is more effective than investing directly in building affordable housing units, as is being done in China, and this is how policies such as the Section 8 Program and tax credit work for the affordable housing sector in the US. As a result, the affordable housing sector has become a business in the US, since private investors can make a profit by investing in affordable housing. Thus, it can be stated that affordable housing REITs work in the US because the affordable housing sector is profitable for investors, and REITs are only one of the many existing forms of companies in this business.

In contrast to the US, the affordable housing sector in Hong Kong is isolated from the market: the private sector is unwilling to risk making any affordable housing investment because no profits can be generated by private investors. In other words, a robust and sustainable channel does not yet exist between government spending and private investment towards the affordable housing sector. In this context, the creation of Link REIT, which is a commercial REIT rather than an affordable housing one, can be recognised as an important breakthrough already, as its birth has solved the financial problem of the HA in the short run, persevering and increasing the affordable housing stock of Hong Kong in some sense. On the other hand, a long-term negative effect on the Hong Kong society is being experienced.

On the other hand, it also necessary to appreciate that over the last 60 years, REITs in the US have been an important tool to generate equity, capitalise balance sheets, and spur acquisitions and development in the real estate industry. The current REIT market in the US

is mature, entrenched, and familiar; it is the largest REIT market in the world by various indicators such as capitalisation, classification, and number of REITs listed. As the market has become more specialised and sophisticated, federal regulations and the tax code have evolved over decades to reflect the growing appetite for investment in real estate, which also provides a highly conducive environment for the whole REIT industry to grow and, of course, for affordable housing REITs to be created (Chan, 2016).

6.4.2 How Successful Are the US Affordable Housing REITs?

Affordable housing REITs in the US work thanks to the affordable housing policies in the country. However, another aspect needs to be considered: how successful they are. There are only two affordable housing REITs operating in the US market today, among more than 1,100 REITs in total (Nareit, 2018).

Specifically, these affordable housing REITs, namely CDT and HPET, show robust and successful performance. For example, in 2017 CDT reported \$18.7 million in operating earnings, a 25.5% increase from a year earlier, and \$33 million in new capital raised, which further strengthened the company's capital base and helped grow CDT's net worth to more than \$325 million (CDT, 2018). Furthermore, HPET's cash distribution from property operations was \$4,548,537 in 2017, nearly eight times larger than the \$575,265 in 2014, the first year of HPET's operation (HPET, 2018). Moreover, in 2017 CDT had a positive impact on the lives of 12,000 residents by creating and preserving over 4,000 units of affordable rental housing across the country through its equity programme, whereas HPET funded affordable multi-family housing serving nearly 3,000 families, with rents affordable at 57% of area median income (CDT, 2018; HPET 2018).

From the financial figures above, it would be difficult to state that these REITS were not successful in their operations and performance. However, from a broader perspective, as addressed before, it should be recognised that CDT and HPET provide a small proportion of the affordable housing stock and only account for a very minor part of the REIT industry in the US. Hence, they could not be deemed to have a huge impact on either the affordable housing sector or the REIT industry in the US.

However, the present author believes that he knows the reason for this. As the interviewees from CDT and NHT mentioned, the misalignment of interests between profit-maximising private investors and the social mission of the affordable housing REITs might not allow them to invest more than what is necessary to ensure the creation of a good-quality, long-lasting affordable product. However, they are mission-based REITs and thereby intend to invest in good, long-term properties to ensure affordability, rather than chasing higher returns. Thus, in terms of the US REIT industry, they look very niche as other REITs are normally profit-driven, and there are many other real estate assets in which REITs could invest to generate higher returns than affordable housing, such as commercial real estate. Hence, there is certainly pressure in terms of answering to the public and normal investors who might not understand their mission-based work. Nevertheless, at the end of the day, the present author fully understands and appreciates their double-mission work (addressing affordability while making reasonable profits): affordable housing is their primary business, and they choose REITs simply as a vehicle or structure to conduct their affordable housing business. In other words, they are affordable housing companies that choose REITs as their company structure for various reasons, such as tax exemption; they are not REITs to invest in affordable housing.

As Mr. K was quoted as saying above, tax credit is now the ‘real deal’ in the US affordable housing sector due to its nature of having no cost, while forming a REIT to conduct affordable housing business is still costly. As a result, REITs as a kind of company structure are not cheap to form, and tend to be niche in the affordable housing sector, too, since most investors naturally want a ‘free lunch’ – namely, benefiting from the tax credit deal, rather than spending money to establish a REIT.

Therefore, it can be stated that the affordable housing REITs in the US are successful, since the only two REITs are robust in their performance and have great potential for future growth. However, from a macroscopic perspective, they are not successful in size and number, since they are a very niche product for both the affordable housing sector and the REIT industry in the US. These suggest that this product may not be generally accepted by the market and thus may not turn into a mainstream one. However, it is argued in this thesis that the niche product of affordable housing REITs in the US has its own characteristics and valuable experiences, and that although it has grown in a country with favourable affordable housing policies, it

could still provide China with strong and established examples as references from which to learn.

6.4.3 What Could China Learn, and How?

The Hong Kong and US models offer valuable experiences and lessons for China. However, given the major contextual differences between China and the US, some difficulties and issues should be recognised first before discussing what can be learned from overseas case studies.

First, it should be realised that it is possible to create affordable-housing-related REITs in mainland China. There are no overly large differences between the conditions in Hong Kong and mainland cities such as Nanjing in terms of the affordable housing sectors. Even the motivations to create affordable housing REITs are the same. Second, it can be stated that the US experiences cannot be copied directly to mainland China due to the huge policy differences between the two, but some specific aspects could be carefully studied, like the private structure and target investors. The most important consideration should be whether lessons from Hong Kong and the US can support the interests of both the private sector and public welfare in China. The Hong Kong model failed to do so, while the US model can, but enjoys policy advantages that do not exist in China.

The present author believes that the answer to the above question is ‘yes’. This answer has already been shown in the interviewees’ statements presented above. Namely, the Hong Kong model and the US model should be integrated together, drawing on each’s strength to offset weaknesses. In particular, the Hong Kong model could be chosen as the basic model for the mainland to copy, since its operability has been tested in a similar context. Its disadvantages, especially the misalignment of interests between the private investors and public welfare, as mentioned above, could be mitigated by the specific methods provided by the US model. The private REIT structure and targeting of institutional investors have worked to CDT’s and HPET’s great benefit, and will no doubt continue to do so in the foreseeable future, to address affordability for low-income families while simultaneously generating reasonable profits for private investors. Hence, the proposed model in mainland China should be a combination of the Hong Kong and the US models. More details are discussed in the next chapter.

6.5 Conclusion

In conclusion, this chapter reviewed Link REIT in Hong Kong and CDT and HPET in the US, all of which are established REITs that are closely linked to the affordable housing sector in the world. Specifically, this chapter studied the contexts of these REITs in Hong Kong and the US, respectively. It investigated the motivations for establishing affordable REITs in these contexts and analysed how they operate. It also examined the useful experiences from REITs in Hong Kong and the US and especially the lessons to be learned from Link REIT in Hong Kong. Finally, some deep reflections regarding REITs and their use in Hong Kong and the US were presented to provide a foundation for the specific discussion on if affordable housing REITs could be established in mainland China which is addressed later in this thesis.

It is believed that the case studies in Hong Kong and US would be highly useful to the proposed affordable housing REITs in mainland China, although Hong Kong stands out as the closest and most relevant case study because it has the same context, institutional framework, and political environment as mainland China does. Even the motivation behind the establishment of Link REIT in Hong Kong was essentially the same, whereas the creation of affordable housing REITs in the US is motivated in other ways. The most important conclusion to draw from the US affordable REITs is that their structure and their choice of target investor appear to enable socially conscious profit-making vehicles. These are useful points in the creation of an affordable housing REIT in China.

The Hong Kong model could provide the strategic framework, while the US model could yield specific tactics to be adopted in the proposed Chinese REIT to avoid some of the difficulties experienced in Hong Kong. More details are provided in the next chapter.

Chapter 7: The Nanjing Model

7.1 Introduction

This chapter explores the possibility of creating a Chinese REIT from the affordable housing sector using Nanjing as a case study. Thus, it develops a Nanjing model. This model reflects current conditions in the affordable housing sector of Nanjing and is underpinned by the experiences and lessons learned from Link REIT in Hong Kong and CDT and HPET in the US. However, it is believed that several potential barriers may prevent the launch of REITs in China. Even so, in practice, the Nanjing government still aims to establish a REIT based on the Nanjing model proposed in this thesis to liquidise the housing assets held by its affordable housing sector⁶⁶. Based on the recent event, this chapter compares the Nanjing model to the Penghua Qianhai Vanke Quasi-REIT in Shenzhen, which has been deemed as the first ‘REIT’ in China, in order to offer a better reference. Furthermore, the chapter argues that the proposed REIT in Nanjing would be the closest one to an actual REIT vehicle, and that its financial success is predictable and would thus benefit the affordable housing sector of Nanjing to increase affordable housing supply, as well as the government in terms of debt relief. Finally, some other potential solutions other than REITs which were found in the course of this study are summarised and analysed, including bonds, rental subsidies and government credits. It is believed that these possible solutions would expand the ways of thinking on financially solving the affordability problem in China.

7.2 The Nanjing Model – the Combination of the Hong Kong and US Models

The present author believes that it is *feasible* to establish a REIT in the city of Nanjing that could be used to support the affordable housing sector, and that this Nanjing model could become a reference to other similar Chinese major cities. However, for this to successfully happen, several important factors must be considered.

⁶⁶ According to the latest national plan, Nanjing government is making the proposal of establishing a REIT from its affordable housing sector in the city. It is worth mentioning that the proposed REIT in Nanjing is based on the model created by this research project. More details are addressed in Section 7.4.

7.2.1 Portfolio with Positive and Robust Cash Flows

The viability of the Hong Kong model (refer to Section 6.2.4) exists because its portfolio contains only commercial property with positive cash flows. This indicates that in the Nanjing model, the REIT's portfolio must be capable of generating positive and robust cash flows to attract investors. Therefore, a detailed examination was conducted of the assets held by the affordable housing sector of Nanjing to identify the suitable ones to form a REIT (see Table 7.1 below).

Table 7.1: Housing Assets Owned by the Affordable Housing Sector of Nanjing

Housing Assets	Amount ⁶⁷ (RMB)	Remarks
Commercial Complex	4.9 billion	<ul style="list-style-type: none">• 430,000m² of commercial complex including 181,000m² of shopping mall and 249,000m² of street retail space.• 25,600m² square metres of serviced apartment.
Car Parking Space	1.1 billion	<ul style="list-style-type: none">• 16,107 car parking spaces in the four major affordable housing areas.
Public Rental Housing Units	5.9 billion	<ul style="list-style-type: none">• 18,900 units of PRH.

Source: Personal interview with Mr. E, 2016.

7.2.1.1 A Pure Housing REIT Is Not Feasible

The nature and structure of the affordable housing sector in Nanjing is similar to that of Hong Kong, where it would be difficult to generate sufficient profits on the housing components to maintain the assets. This is different to the US, where affordable housing is an established business entity with subsidies: to date, affordable housing in Nanjing has been provided by the government as social housing. The inability to operate a pure housing REIT is supported by the evidence presented by Mr. E of Anju:

⁶⁷ This is the only market value available now. It was calculated by the government in 2013, and no updated calculations have been conducted or completed since then.

‘Now we have **18,900 units** of public rental housing (PRH) in Nanjing, it cost us billions to build... but do you know... the rental income we have got... was just **16.8 million** in 2015,⁶⁸ which was not enough for the maintenance. This year (2016) we expect that the rental income will be **pretty much the same**, as you should know that, for low-income groups, the monthly rental for a unit, sized at 45m² for example, is just RMB 72... So basically the operation of PRH relies on fiscal subsidies, as PRH, really, cannot make money at all!’ [Mr. E]

Based on Mr. E’s data, the nominal annual return on equity invested in PRH in Nanjing was just **0.285%**⁶⁹ in 2016. At this low rate of return, it would be impossible to attract private investors if the proposed REIT in Nanjing only contained the non-commercial stock held on PRH estates in its portfolio.

In addition, it is worth noting that there are two levels of rent for PRH in Nanjing, which the units at these two prices have been equally distributed on the whole, according to Mr. E. As a result, it is estimated that even the proposed affordable housing REIT with portfolios comprising just the higher rent segments would be infeasible to be established, given the proposed rate of return would be around **0.57%**⁷⁰.

7.2.1.2 A Commercial REIT Can Produce Attractive Returns

However, on the other hand, the inclusion of the commercial part of the PRH communities in the REIT’s portfolio could help the future managers of this fund to generate positive and robust cash flows, which would allow the REIT to maintain its stock and deliver investors an attractive return, thereby creating a vehicle similar to that in Hong Kong. This assertion is supported by data revealed by Miss F, a leasing unit official of Anju. She provided financial information on the commercial assets held by the local authority within its affordable housing estates. The market value for the commercial assets, calculated in 2013 by Nanjing government, was estimated at RMB **6.0 billion**, with 4.9 billion representing commercial space and 1.1 billion representing car parking (see Table 7.1).

⁶⁸ According to Mr. E, the occupancy rate of PRH in Nanjing was around 80% in 2015.

⁶⁹ The estimation was calculated based on using 16.8 million divided by 5.9 billion. In fact, the market price of PRH would be more than 5.9 billion now, so the actual rate of return on equity would be even smaller. However, the current market value of PRH was not available for this study.

⁷⁰ $0.285\% \times 2$, given PRH units at two prices have been equally distributed.

‘In the four major affordable housing areas, we all configured commercial real estate to meet the needs of the local residents. Now the ownership of the commercial real estate has been transferred from us (Anju) to the local government (of Nanjing). The type of the commercial real estate is mainly centralised regional commercial centres and street retail space, and the operation performance is not bad.’ [Miss. F]

‘The occupancy rate is currently around 70% and keeps increasing. Our job is to rent out the commercial space and we are doing well. The rental income for 2015 was around RMB 250 million, which was the first year of operation. And for this year (2016), our estimation is **330 million**...’ [Miss. F]

Based on data provided by Miss F, the nominal return on equity of the commercial real estate held within the affordable housing communities in Nanjing was **5.50%**^{71 72} in 2016.

This represents a large difference in nominal returns. The low return on PRH but higher return on the commercial real estate of affordable housing communities presents a startling similarity with the situation faced by the Hong Kong HA prior to the establishment of its REIT. The provision of an investment vehicle that could deliver a sufficiently high return on equity on what would be a relative low risk investment due to its stable income flows would be key to attracting private investors to participate in the affordable housing business. Furthermore, packaging the REIT as a general equity company with commercial assets presents an opportunity for Chinese major cities such as Nanjing.

7.2.1.3 Market Target Return Suggests a Mixed Portfolio Is Still Workable

The target rate of return that the market considers to be suitable is believed to be an important consideration to test the performance of the proposed portfolio of the REIT.

Mr. A of the CREA provided insightful information that helped to establish a benchmark target rate of return:

⁷¹ The estimation was calculated based on using 330 million divided by 6.0 billion. However, the market price of the commercial real estate would be above 6.0 billion, so the actual rate of return on equity would be smaller.

⁷² A sensitivity analysis was made, refer to Appendix D.

‘If the rate of return of the REIT in Nanjing was around 5%, I think it would be very attractive to investors. The average return of commercial real estate in major cities is **6.1%** in China (in 2016). But you need to remove the tax cost, including 5.5% of business tax, 1.2% of property tax, and 25% of corporate income tax. So the actual amount... to your hand... would be just 60-70% of the nominal rental, and you need to pay the personal income tax...’ [Mr. A]

‘So, now you tell me that the return of the REIT would be 5%, more or less... As a professional, I would certainly invest in it, as I know I would save a lot because REITs don’t pay tax at company level... and that saving would be my income.’ [Mr. A]

Based on Mr. A’s information, this study sets **4% (after tax)**⁷³ as the benchmark rate of return that the market considers to be acceptable. If the proposed REIT in Nanjing could be granted the tax-free status, then this thesis argues that a mixed portfolio containing commercial real estate plus some PRH units would be workable too, given that a purely commercial REIT could generate a return of 5.5%. Thus, a portfolio comprising some PRH units, which would lower the total return, could still be acceptable to investors if the rate of return was above 4%. However, it is not currently possible to determine a specific proportion of the portfolio, namely how much housing and how much commercial real estate create an acceptable rate of return, as much more detailed information is required but could not be accessed by the researcher: for instance, the current value and specific rental income of PRH and commercial real estate. Nevertheless, it is believed that the commercial real estate would account for the majority of this portfolio.

All in all, including the commercial real estate of the affordable housing estates or building a mixed portfolio⁷⁴ would make it possible to establish a REIT from the affordable housing sector of Nanjing to liquidise the public real estate and thus financially support this sector. The Hong Kong model suggests that such a vehicle could work and deliver an attractive return. Further adjustments to the model may be necessary, however, and here elements of the US model would be helpful.

⁷³ Suppose $6.1\% \times (1 - 35\%) \approx 4\%$.

⁷⁴ Prerequisite: a return rate above 4% after tax.

7.2.2 The REIT Should be Private, not Public

Based on the experiences from the US, it can be argued that it would be necessary to keep the proposed REIT in Nanjing as a private vehicle. The reason for this is that only a private and unlisted REIT could maintain its goal of preserving and increasing the affordable housing stock held while generating profits. As a publicly listed company, the goal of seeking the highest return would be dominant and overshadow the social dimension of the vehicle.

Although the viability of the Nanjing REIT rests upon the inclusion of mostly commercial real estate assets in its portfolio, it would be possible to establish the REIT as a private one. The legislation framework for private companies could still apply, making it easier to coordinate the private REIT with the public sector, as previously suggested by Legislator G of Hong Kong. This is because the commercial complexes in the affordable housing communities of Nanjing serve the local affordable housing residents and tenants, who have been categorised as low- and middle-income groups. These households are price-sensitive shoppers. If retailers are charged higher rents, then they will pass on the higher operating costs to customers who will then be negatively affected, possibly changing their shopping patterns if they can. Hence, the rents that commercial occupiers are charged must be responsibly managed. Miss F, the official responsible for leasing units in Anju, provided more details in this regard:

‘The municipal government set the highest price of the rental we can charge, which is below the market price. So local residents love to shop with us as the rent and thus the prices of goods are cheap here. You know, people from neighbourhoods nearby also do their shopping with us... I think this is a kind of welfare that is provided to the affordable housing households... and they are happy about that.’ [Miss. F]

If the REIT was established as a public vehicle like Link in Hong Kong, the living cost of the affordable housing residents and tenants would increase unavoidably, as there would be no legislative controls to prevent a public company seeking higher returns and raising the rents charged on its commercial real estate properties. This has occurred in Hong Kong, so the Chinese government needs to take preventative action to establish the REIT in a manner that avoids similar situations arising in Nanjing and other mainland cities, which forming a private and unlisted structure of the proposed REITs should be the first consideration based

on the US experiences. Whereas in Hong Kong, business performance dictates the rents charged. This has resulted in serious social conflicts between the private sector, public sector, and Link REIT. An intuitive lesson to learn here is to ensure that this cannot happen again. Regarding this problem, Mr. A said:

‘If the proposed REIT in Nanjing can have serious social consequences or even cause conflicts, just like what happened in Hong Kong, I give you my word on it... the Nanjing municipal government will not approve this proposal at all... To solve the financial problem is important, but it is not worth having any social conflicts and group incidents. Hong Kong is Hong Kong, but this kind of thing cannot happen on the mainland!’ [Mr. A]

Therefore, based on the successful experiences from the US, this thesis argues that the proposed REIT in Nanjing should be established as a private vehicle instead of a public company. This would ensure better coordination of the interests of all parties including the government, the affordable housing residents, and the REIT and its investors.

7.2.3 Institutional Investors Should Be the Target

Investigations into the US model and the private REIT structure revealed another feature that is necessary to create a viable REIT in Nanjing: the targeted future investors should be institutional instead of private investors, as is done in the US. Private investors in China now are not familiar with the concept of REITs as they do not currently exist in the country, let alone in the form of a specialised affordable housing REIT. The proposed REIT in Nanjing would be a REIT majorly based on the commercial properties held in PRH estates instead of purely holding the housing assets themselves. Nevertheless, it would not be easy for retail investors in China to understand how a REIT owning commercial facilities of affordable housing communities or a mixed portfolio containing PRH units could deliver a suitable return. In contrast, institutional investors in China are more familiar with the investment vehicle of REITs and the affordable housing sector.

Regarding this issue, Mr. C of the NJHSREMB said:

‘I think institutional investors would be the major investors of the proposed REIT in Nanjing. As far as I know, organisations like NSSF and many banks including commercial and policy banks are interested in this kind of deal. Especially for NSSF, they have invested in the affordable housing of Nanjing... they have experience, and they are familiar with the affordable housing sector of Nanjing... so I believe they will be very interested in the proposed REIT deal in Nanjing too.’ [Mr. C]

In contrast, Mr. C also shared the following opinion regarding private investors:

‘I don’t recommend absorbing personal investors. One thing is that the general public doesn’t have an idea of what a REIT is, and you are going to ask them to invest in a REIT... a REIT created from the affordable housing sector, which would be hard. But on the other hand, I believe institutional investors will come in great numbers and there will be enough investors for the proposed REIT in Nanjing... so there is no need to attract individual investors, believe me...’ [Mr. C]

Thus, this thesis argues that institutional investors should be the target of the proposed REIT in Nanjing, as this would be most convenient way to launch in terms of marketing time and cost.

7.2.4 Summary

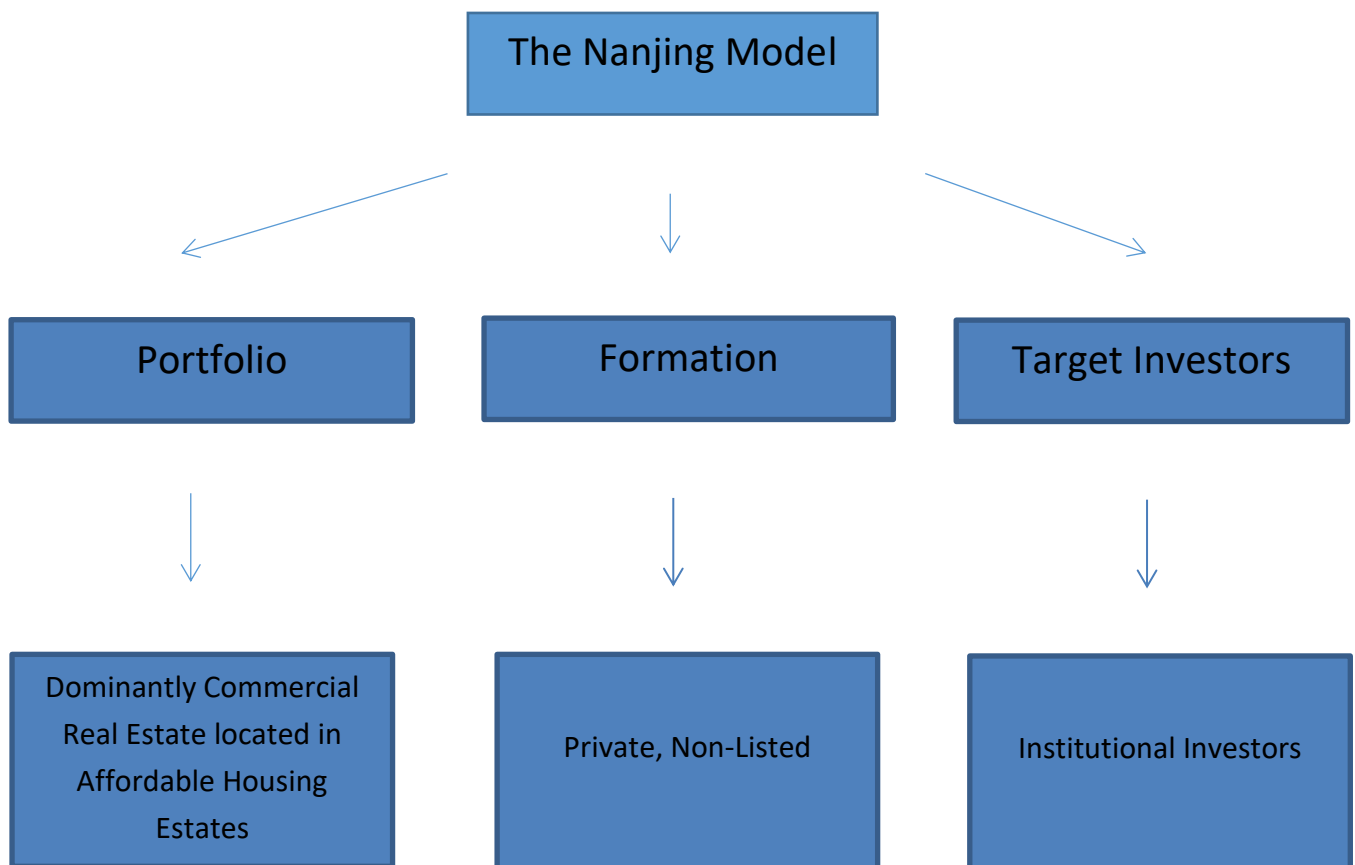
In general, the three points above have established important characteristics for the proposed REIT in Nanjing. This model combines major elements of the Hong Kong and US models. Specifically, it defines the portfolio, formation, and target investors of the REIT in Nanjing based on the current situation of the affordable housing sector and the investment climate. Furthermore, it is a portable model that could be copied by other major Chinese cities in real-world applications (see Figure 7.1 below).

It is believed that based on the Nanjing model, the financial problems of Nanjing’s affordable housing sector could be mitigated, as could those of many other major Chinese cities. Furthermore, if a mechanism is put in place to retain the social goals of the vehicle, the

effects on the affordable housing householders could be minimal. In addition, the proposed REIT would be highly popular with targeted future investors.

More importantly, it is believed that this model could help to establish a state-market mix at the final consumption stage of China's housing provision chain by liquidising the real estate assets held by the affordable housing sector. This mix is currently missing. An affordable, fair, and sustainable rental housing market could be expected with the creation of such a state-market mix.

Figure 7.1: The Elements of the Nanjing Model

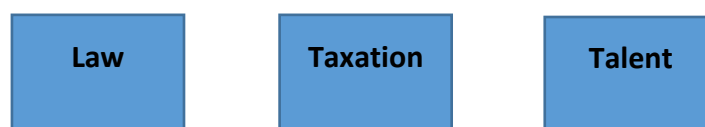


Source: Developed by the researcher, 2017.

7.3 The Barriers to Establishing the Proposed REIT in Nanjing

Although the Nanjing model is a potentially workable model for Nanjing and similar cities to adopt, much work remains to be done for the REIT to be established. This is because some general barriers exist to prevent the birth of REITs in China; more details are necessary to understand this situation. This study has identified several major barriers based on existing studies and interviews conducted in this research project. These concern the law, taxation, and lack of talent (refer to Figure 7.2 below). Hence, it is necessary to examine and discuss potential solutions to those barriers, which have been studied intensively by the academic circle and the industry.

Figure 7.2: Three Barriers to the Establishment of REITs in China



Source: Summarised by the researcher, 2017.

Based on Figure 7.2 above, the Nanjing model or even actual REITs in China can only be workable if three barriers are removed: law, taxation, and talent barriers.

7.3.1 Law

Shen (2009) suggests that one of the greatest barriers to the establishment of REITs in China is that no related laws and legislation exist to provide a framework to guide the establishment of a REIT. For instance, according to RICS (2016) the first REIT in Singapore, namely the Capital Mall Trust, was launched in 2002, but this required REIT legislation to be introduced in and enacted in 1999. Similarly, the first REIT in Hong Kong, Link, was established in 2005, but the necessary legislation was put in place in 2003 (ibid.). Establishing the necessary legislative framework is an essential first step in the process of establishing REITs in a country. China is no different, so appropriate law and legislation would form this foundation

by defining the structure and operational details of this type of vehicle. Mr. A voiced the following opinion on this issue:

‘Currently, we lack specific legalisation to define the REIT products. The result is that no details in terms of the structure, source of income, profit distribution, and tax exemption can be confirmed...’ [Mr. A]

Furthermore, Mr. C said:

‘As far as I know, company law, trust law, and tax law in China all need to be adjusted to fulfil the requirement to establish the proposed REIT in Nanjing. This will be a very big project, taking years to complete, I think. But this year (2016), several deputies to the National People’s Congress⁷⁵ brought a motion to promote the making of a REIT law, which I believe was a good start. Once you see the National People’s Congress including a formal bill of REIT law in the agenda, it means that REITs in China are really coming...’ [Mr. C]

In general, the lack of specific law and legalisation in China to define REIT products has held back the progress of the securitisation of real estate in the country. However, positive changes can be expected in the near future, although no more details could be obtained regarding the motion mentioned above.

7.3.2 Taxation

Real estate income is highly taxed in China, as mentioned by Mr. A (refer to Section 7.2.1.3). However, REITs established in many countries offer investors tax incentives, and this underpins the great interest in these instruments by China’s real estate development industry. However, it is possible that the REITs could be introduced with no tax preference granted under the current tax system in China. In other words, REITs might be taxed on both company and personal levels (RICS, 2016). According to the *White Paper on the Development of Public REITs in China*⁷⁶ released in 2017, which was prepared by Guanghai

⁷⁵ The National People’s Congress (NPC) is the top legislature in China.

⁷⁶ Refer to

http://www.gsm.pku.edu.cn/_local/9/1A/6F/FE1B0957CA873D43991ED415FC1_38068A1C_44D1BF.pdf.

School of Management of Peking University, the tax cost of the proposed REITs would be very high if based on the current tax regime. Thus, corresponding adjustments are required, such as a specific tax incentives scheme.

Regarding the situation of double taxation, Mr. A shared some background information:

‘The tax problem of the proposed REITs, ultimately, is because the State Administration of Taxation (SAT) assumes an ambiguous attitude towards this issue. As far as I know, some conservative leading figures don’t support the idea of giving a tax-free status to REITs. So, the direction has shifted to the affordable housing sector, as giving tax preference to affordable housing REITs would be much easier for the SAT to accept, either economically, politically, or morally.’ [Mr. A]

However, Mr. A also suggested that the legal framework should be established first, and that this would start the process of clarifying the issues around the granting of tax-free status. This would mean that the taxation status issue would not be entirely the SAT’s responsibility. He said:

‘But we need to understand the fact that the tax preference cannot be confirmed, also because there is no legal framework to define the details of REITs in China. I believe that related law must come out in the first place, and then the tax authority could have the room to make adjustments accordingly. For example, Singapore had its first REIT legislation in 1999, and the Singaporean tax authority made relevant tax preference arrangements in 2001. After that, the first REIT was finally listed on the Singapore Stock Exchange in 2002. There is a process that you need to go through... and I think law first, tax second... So I believe that if there is a specific law available, say a REIT law, the attitude of the SAT will be much clearer...’ [Mr. A]

However, political tension exists over the granting of tax-free status to real estate activities. Under the current tax system, these proposed vehicles would face high taxes and double taxation, which would put off many investors, particularly as they would severely impact the net returns achievable by a Chinese REIT. If this issue cannot be addressed, then it is certain

that future REITs in China will be uncompetitive in comparison to other Asian REITs based in Japan, Hong Kong, and Singapore, where tax transparency is guaranteed.

7.3.3 Skills Shortage in the Real Estate Sector

Hou (2017) indicates that there is a critical shortage of talented workers who understand real estate finance and real estate securitisation as well as China's housing market. To establish REITs in China, this workforce shortage would need to be addressed, as otherwise a lack of professional teams with the necessary knowledge and skills would impede the process (RICS, 2016). Regarding this issue, Mr. A said:

‘So far, there are just a few teams who could design the real-estate-based financial products, and they are basically in Shanghai and Shenzhen. However, REITs also require qualified professional property management teams to increase the performance of the real estate assets, and this kind of professional is hard to find in the current market...’ [Mr. A]

Mr. C also recognised this skill shortage as an issue:

‘In a word, that is, this country lacks the tenants who understand real estate and also understand finance. This kind of tenant is sorely lacking in China. And I think the proposed REIT in Nanjing would face this tenant-related problem without doubt...’ [Mr. C]

In short, the three potential problems discussed above could be the most significant barriers to the establishment of REITs in China. Even if the Nanjing model could provide a clear pathway to create REITs in Chinese major cities to facilitate the transfer of real estate assets of the affordable housing sector from hard assets to cash for the government, the legislative, taxation, and skills infrastructure must be put in place to support the launch of these REITs. REITs would be difficult to establish in the current environment.

7.4 The Government's Attempt Based on the Nanjing Model

As explained in Section 4.4.1, the research philosophy adopted in this research project is *pragmatism*. The main reason is that this study aims to create new knowledge that could be useful for action and changes to real-world problems, which is in line with the ontological focus and epistemology of pragmatism. In this vein, this present author had the chance to address the housing financing problems by proposing REITs in a real-world scenario. That is, the Nanjing model described above was summarised and presented to the Nanjing Housing Security and Real Estate Management Bureau (NJHSREMB) as an internal written report in July 2017 (refer to Appendix E). As mentioned in the Introduction Chapter (see Section 1.1.2), Nanjing was chosen to 'actively support and promote the development of REITs' as one of the 12 major cities by the central government in July 2017. However, as early as in 2015, the researcher started to contact the NJHSREMB for the data of this thesis to examine the possibility of setting up an affordable housing REIT in the city. So the Bureau and the Nanjing government understood and have recognised the work that was done by the researcher since two years ago. However, starting from March 2017, the NJHSREMB began to work closely with the researcher to strive for the support of central government for the proposed REIT to be launched in the city, and finally became one of the first 12 pilot cities to establish affordable REITs, as official document publicly released in July 2017. However, it is worth nothing that the intellectual ownership of the 'Nanjing model' belongs to the researcher and this thesis, through negotiations.

Nevertheless, it is believed that the current responses from the Nanjing government could improve the model in a more applied way and thus make this research project more comprehensive and robust. In addition to the fact that its basic elements have all been accepted, Mr. C of the NJHSREMB presented the following feedback about the Nanjing model.

7.4.1 The Proposed REIT in Nanjing Will Be a Commercial One

The Nanjing model suggested that the REIT in Nanjing could be a commercial REIT or have a mixed portfolio containing a majority of commercial real estate but with some PRH units. However, the Nanjing government has chosen to create a commercial REIT holding shopping

malls, retail spaces, and car parking within affordable housing estates, following the example of Link in Hong Kong. This decision was based on meeting the market demand.

At the very beginning of this research, in December 2014, it was reported that the MOHURD required the four tier-one cities of Beijing, Shanghai, Guangzhou, and Shenzhen to submit their affordable housing REITs proposals (refer to Section 1.1.2). However, no progress has been made since then.

‘The reason was quite simple. The central government was not stupid... after analysis, those proposals were impossible to approve as REITs purely owning PRH units cannot make money at all. So there is no market for this kind of affordable housing REIT!’
[Mr. C]

In fact, regarding the Chinese housing market, the targeted institutional investors have excellent knowledge of the affordable housing sector including the current situation of PRH. Those investors would thus be unwilling to invest in the type of mixed portfolio proposed in this study. According to a market survey conducted by the government in Nanjing in August 2017, the PRH continues to lose money, and the private sector does not want to act as a charity:

‘We have surveyed 22 organisations so far, including banks and social funds, and the initial market response has been very positive. They all have been very interested in the deal but only with the part of the commercial real estate. It can be said that including only commercial real estate assets in the portfolio of the proposed REIT is the greatest common divisor between the public and private sectors, and the success of the proposed REIT in Nanjing will depend on the result of the two-way selection.’ [Mr. C]

7.4.2 The Government Will Still Own the Underlying Assets

Based on the suggestion of Legislator G from Hong Kong, the government should own a part of the share of the proposed REIT to better negotiate and coordinate with the REIT in the future to achieve business success while also protecting and maintaining the interests of affordable housing residents (refer to Section 6.2.5.2). The newest experiences from the UK,

namely regarding Civitas REIT, also imply that the private sector should work closely with the social landlords to achieve the best possible business results without causing any side effects such as the dissatisfaction of social tenants. The strategy used by Civitas is not developing or managing social housing directly but working in close collaboration with housing associations and local authorities in England and Wales who provide these services to help them liquidise real estate assets locked in existing social housing for new development, and to promote the delivery of new social housing (Civitas, 2017).⁷⁷ In addition, with regard to the business perspective, working in partnership with housing associations and local governments can increase investor confidence as Civitas's income is based on long term leases and occupancy agreements of typically 10 to 40 years which more than 85% of rental income paid to the company will be directly paid by the government (ibid.). Yet, the robustness of the model of Civitas remains to be examined due to the fact that it is not a well-established case.

However, in its latest feedback, the Nanjing government demanded that it transfer the management rights and income rights to the proposed REIT but retain ownership of the commercial real estate assets.⁷⁸ In other words, although the proposed REIT in Nanjing would include the commercial real estate of the affordable housing communities in its portfolio, the ownership of this real estate would be retained by the government, and specifically be managed by Nanjing's affordable housing company, namely Anju. Thus, it is expected that the public sector would have a relatively large say in balancing the business and social goals of the proposed REIT, as the REIT would not be a purely commercial one in the traditional sense. Instead, it would have the Chinese characteristic of the underlying assets still being owned by the government, and not by the REIT.

The government's preference for the proposed REIT has two major reasons, one legal and one political. Mr. C explained:

‘One thing is that transferring governmental housing estates to the private sector could be illegal under the current legal system. This kind of activity is suspected of causing the loss of state assets, so that's why a specific REIT law is necessary, not just for the

⁷⁷ The private sector in the UK usually contracts the management role to the partner association, though in the past this has been criticised for not creating efficiency incentives (Gibb, 2017).

⁷⁸ Feedback from Mr. C of the NJHSREMB by telephone conversation in September 2017.

industry, but also for the government. Otherwise, the ownership of these state-owned properties cannot be transferred.’ [Mr. C]

‘The other thing is based on the political consideration. The SAT doesn’t want to give the commercial REITs the status of being tax-free.⁷⁹ But on the other hand, you know, purely affordable housing REITs, they don’t have a market. So the Nanjing government wants to use this strategy as a bargaining chip to gain an advantage with the SAT. You know... we are not promoting a purely commercial REIT, the assets are still owned by the affordable housing sector, so the REIT should be tax-free...’ [Mr. C]

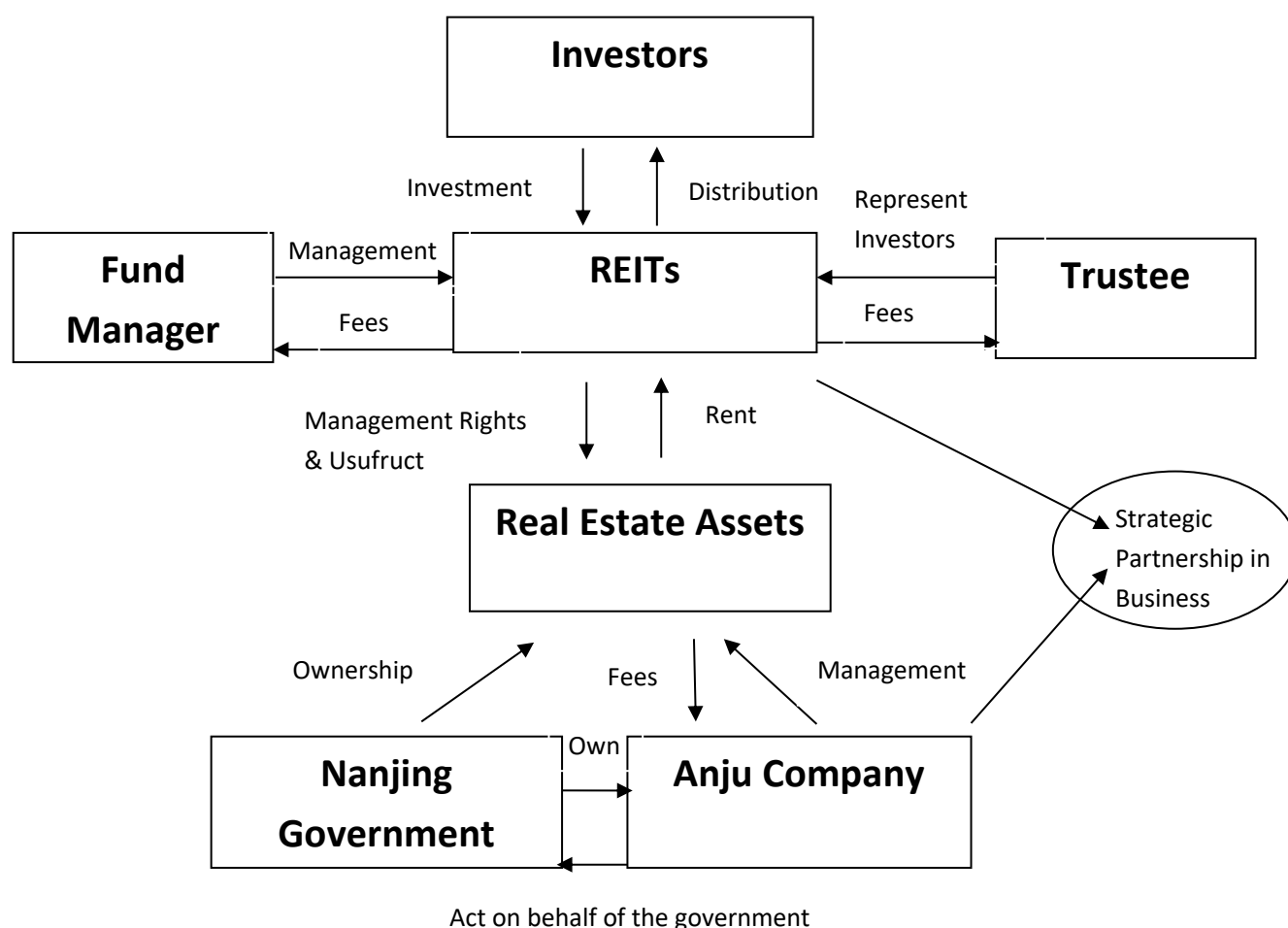
In addition, as mentioned above, it is believed that the government could have more control over the REIT by owning the underlying assets. However, it is expected that the government would not intervene in the operation of the REIT unless the interests of affordable housing residents were adversely affected:

‘The government won’t stop the private sector from making money, but the base line is that the interests of affordable housing residents cannot be seriously and adversely affected. In a word, the various problems caused in Hong Kong by Link REIT must be avoided in Nanjing.’ [Mr. C]

Based on this plan, the following figure presents the structure of the proposed REIT in Nanjing.

⁷⁹ Refer to Section 7.3.2 above.

Figure 7.3: The Structure of the REIT in Nanjing Proposed by the Government, Based on the Nanjing Model



Source: Summarised by the researcher, 2017.

The figure above shows that in addition to the traditional REIT structure, the Nanjing government intends to retain the ownership of the real estate assets but to transfer the management rights and usufruct to the proposed REIT. Based on the current government plan, Anju would be the real estate management company continuing to manage existing PRH units and commercial real estate. It would thus manage the portfolio of the REIT and act on behalf of the government, who would be the property owner, to work closely with the REIT to increase the performance of the real estate assets, and take affordable housing residents and related social issues into account. However, this thesis argues that Anju would have too much power in this structure, while the proposed REIT should be granted the right to appoint alternative real estate management companies if Anju presents below-standard work quality.

Moreover, it needs to state that this model was developed by the present author based on the limited government information available, and was also very preliminary. More details such as how long the management term is, and how rent and fees are decided and distributed in this model could be either not accessible or still under consideration. However, it is believed that these details, if available, would be very useful for wider discussion and further analysis.

7.4.3 The Released Cash and Its Applications

According to the feedback from the government, the exact amount of cash to be released by the establishment of the REIT in Nanjing was still under calculation when this research project was undergoing, as the latest detailed and comprehensive official calculation of the real estate assets of the affordable housing sector of Nanjing had been conducted in 2013. However, based on the 2013 data, at least RMB 6 billion could be released from the housing assets held by the government:

‘If the proposed REIT was to be established in Nanjing based on your model, it is believed that at least RMB **6 billion**⁸⁰ would be released from the commercial real estate of the four major affordable housing areas, according to the data from 2013. However, current market value is certainly higher now and currently being measured...’ [Mr. C]

Regarding the proposed use of this money, at least a half will be used to build the PRH to achieve the housing target set for the 13th five-year plan of Nanjing. The rest will be used to repay the government debt.

‘This amount could be enough for the construction of the PRH in Nanjing for the next few years... 3 billion, more or less, is required in total to construct those units according to the 13th five-year plan of Nanjing. And the rest of the money will be used to repay the (government) debt.’ [Mr. C]

In addition, this thesis studies *The 13th Five-Year Plan for Housing Provision in Nanjing*⁸¹ released in February 2017, which indicates that 10,000 units of PRH will be constructed

⁸⁰ It is believed that the current market price would be more than RMB 6 billion.

⁸¹ See: http://www.nanjing.gov.cn/xgk/szf/201703/t20170321_4404807.html

during the 13th five-year plan period, with the maximum unit size that is limited to 60m². Based on the official information, the researcher calculated that the capital required for the construction of the PRH during the 13th five-year plan period would be around 3.12 billion⁸², which was consistent with Mr. C's statement.

However, although the exact amount of money to be released is still under estimation, given that the funding gap of the affordable housing sector of Nanjing is 11.6 billion (refer to Table 5.3), this thesis argues that the establishment of the REIT based on the Nanjing model could only mitigate the financial crisis experienced by the sector, and not fully solve the problem. Nevertheless, it is also believed that the creation of the REIT in Nanjing would be a great help and improvement. Mr. C said:

‘The creation of the REIT in Nanjing suggests a process of “from zero to one”, which is the most difficult part of doing anything. What I am trying to say is that the difficulty has to be solved gradually, and the REIT would be the first step to solve the problem. And in fact, 6 billion is not a small number, it can be used to solve a lot of problems...’

7.4.4 Summary

In conclusion, it can be stated that the Nanjing model established the key characteristics necessary to set up feasible REITs in major Chinese cities. This is because this study gained access to inaccessible data on the affordable housing sector of Nanjing with the intention to solve the existing problems in this sector in major Chinese cities. Reference was made to Hong Kong and the US, and insights were gained into the operation of these vehicles from the basis of a practical and potentially workable model.

As a result, the Nanjing government has developed its own REIT structure based on the Nanjing model proposed in this study and on considerations regarding market response and legal and political issues. Hence, unlike REITs in the conventional sense in other countries and regions, the government's REIT in Nanjing would have its own Chinese characteristic, in that the underlying assets would not be owned by the REIT but by the government. This is in

⁸² Given the current portfolio of 18,900 PRH units are worth 5.9 billion, 10,000 units are worth around 3.12 billion.

line with the current legal system in the country. However, the proposed REIT would have management rights and usufruct, including rental income and capital appreciation, regarding the real estate assets in its portfolio. Mr. C further explained:

‘In fact, the ownership of commercial real estate is a 40- or 50-year lease in China. Real estate is all leasehold (in China), so investors would not be surprised by the fact that the real estate assets of the REIT’s portfolio were owned by the government. We have already conducted a market survey on this. Also, the Nanjing government will make a concession by allowing future investors to enjoy the capital appreciation of the housing assets in the portfolio although the ownership will be the government’s. We believe this move will boost market confidence.’ [Mr. C]

Given the updated facts provided by the Nanjing government, especially that the REIT will be a commercial one, a case study of the Penghua Qianhai Vanke Quasi-REIT was conducted. The aim was to investigate and show how the proposed REIT in Nanjing could work in the Chinese context.

7.5 The Case Study of Penghua Qianhai Vanke Quasi-REIT

Under the current system, the industry has deemed the Penghua Qianhai Vanke Quasi-REIT, launched in July 2015 with the purpose to raise RMB 3 billion, to be the first REIT in China in its true sense (CSI, 2016). However, this claim cannot be agreed by this research. As mentioned above, to gain a better understanding of how the Nanjing model would work, the researcher also went to Shenzhen to study this renowned quasi-REIT product to see how it works under the current conditions in China. Some interesting information was found.

7.5.1 The Quasi-REIT Does Not Own the Property

The Penghua Qianhai Vanke Quasi-REIT in fact does not own the property in its portfolio, which contains 33 office buildings, one large public building, and 6 small public buildings, accounting in total for 65,200m². However, the quasi-REIT has the rental income right over the property (Zou, 2015). The reason for this is simple: a legal issue. This is in line with the

proposed REIT based on the Nanjing model, as said by Mr. M, a fund manager of Penghua Fund Management Co. Ltd, who was responsible for the design of the quasi-REIT:⁸³

‘It was because of the legal issue. The current *Securities Investment Fund Law of the People’s Republic of China* clearly states that a public mutual fund cannot make direct investments in real estate. In other words, a public mutual fund cannot own real estate directly. So, what we have done is actually the securitisation of the future rental income rights, but not the real estate asset itself. Simply put, we don’t own the property, but we have the right to collect the rents, from 2015 to 2023... based on these facts, we then designed this product then...’ [Mr. M]

It can be stated that Penghua Qianhai Vanke Quasi-REIT does not own the real estate due to prohibitions in the current Chinese legal system, which cannot be quickly changed. Specifically, the current legal system cannot grant a public mutual fund the status of owning real estate directly, and thus certain changes had to be made to the quasi-REIT’s structure and operation.

7.5.2 The Quasi-REIT’s Portfolio Suggests It Is Far from Qualifying as a Real REIT

According to its official requirement, the quasi-REIT should have a portfolio comprising no more than 50% real estate assets, and no less than 50% fixed income and equity assets (Bloomberg, 2017b). From the internal data provided by Mr. M, the investment in stocks and bonds accounted for 65.91% of the REIT’s portfolio in 2016, while the real estate assets accounts for only 30.72%, and the remaining 3.37% represented bank deposits.

Based on its portfolio, this quasi-REIT is far from qualifying as a real REIT. Instead, it is more like a **hybrid fund**, but comprising real estate assets. Mr. M revealed the following details about this portfolio:

‘We promised our investors that the return of the product would be 7-8% annually. For 2016, we made it at 8.49%. But the rental yield was around 5% only. So we have to make more investments in bond and shares to achieve the target return.’ [Mr. M]

⁸³ A supplemental interview was conducted with Mr. M in Shenzhen, 2017 for the case study of the Quasi-REIT. Refer to Appendix F.

By international standards, Penghua Qianhai Vanke Quasi-REIT can be defined as a close-end hybrid fund. However, this thesis argues that if the quasi-REIT could enjoy a tax-free status, there would be no need for fund managers to include bonds and shares in its portfolio to form such a hybrid fund. This would allow the managers to focus on real estate investments and to deliver a tax-free return on the commercial real estate that would be acceptable to investors in China.

7.5.3 Comparing the Proposed REIT in Nanjing and Quasi-REIT in Shenzhen

The following table visually compares the proposed REIT in Nanjing and the Penghua Qianhai Vanke Quasi-REIT in Shenzhen.

Table 7.2: The Proposed REIT in Nanjing and Quasi-REIT in Shenzhen

Product	REIT in Nanjing Based on the Nanjing Model	Penghua Qianhai Vanke Quasi-REIT in Shenzhen
Portfolio	Commercial real estate within affordable housing properties	Commercial real estate, bonds, shares
Ownership	No	No
(Property Owner)	The Nanjing government	The developer – Vanke
Income	Rental income, real estate asset appreciation	Rental income, investment return on bonds and shares
Tax Exemption	Highly possible	Not possible
Fund Type	Unlisted, private close-ended with term ⁸⁴	Listed, close-ended with term (2015-2023)
Investor Type	Institutional	Institutional/Individual
Rate of Return	5.50% ⁸⁵	8.49% ⁸⁶

Source: Mr. C and Mr. M, 2017; summarised by the researcher, 2017.

⁸⁴ At least five year for close-ended fund by Chinese law.

⁸⁵ Not current value; calculation based on the 2016 rental income and 2013 market value of housing assets.

⁸⁶ Not current value; return of 2016.

The table shows several similarities between the two products in terms of portfolio assets, rental income, and the fact that neither owns the real estate assets. The differences are that the REIT in Nanjing will focus on institutional investors while Penghua Qianhai Vanke Quasi-REIT targets both institutional and individual investors; and importantly, the REIT in Nanjing could be granted the tax-free status by the SAT, whereas this is not possible for the quasi-REIT in Shenzhen. In addition, Penghua Qianhai Vanke Quasi-REIT is listed on the Shenzhen Stock Exchange, but the proposed REIT in Nanjing will be a private unlisted company.

However, this thesis argues that the proposed REIT based on the Nanjing model might be the closest scheme to the real REIT vehicle defined by international standards, since the fund's income will significantly come from the rent and the appreciation of the real estate assets in its portfolio, although the real estate assets will be owned by the government of Nanjing by law. However, it seems that this does not significantly concern the investors in China (see: X.C. Li, 2016). According to Mr. M, in 2015 Penghua Qianhai Vanke Quasi-REIT raised RMB 3 billion to finish its fundraising target in just one week's time, which proved that this kind of real estate finance innovation product was in high demand by Chinese investors. Moreover, the Shenzhen municipal government awarded the Penghua Fund with the 'Financial Innovation Award of 2016' for designing this quasi-REIT, suggesting that the local government also recognised this product (STCN, 2017).

In addition, it is worth noting that if the REIT in Nanjing could be a tax-free vehicle, then it is believed that it would be a highly popular product, as its rate of return could be equal to or even greater than that of Penghua Qianhai Vanke Quasi-REIT.⁸⁷ However, the reason for the predictable success of the REIT in Nanjing would be that the funding required to build PRH during the 13th five-year plan period would be solved in the city, and the government debt crisis could simultaneously be mitigated by the rest of the funding.

⁸⁷ Assume 35-40% tax cost, according to Mr. A (see Section 7.2.1.3).

7.6 Other Possible Solutions and Considerations

REITs, including affordable housing and commercial ones, are the major focus of this thesis, and the Nanjing model has been proposed as an operative path for the local government to establish a REIT. However, some other possible solutions to address the affordable housing crisis in China also arose during the research process. Among them, the most relevant ones to this research process include bonds, rental subsidies, and government credits.

7.6.1 Bonds

As mentioned in Section 3.3.2, and based on the interviews conducted in this research, bond financing has been used to fund the affordable housing sectors of cities such as Nanjing. In fact, in June 2011, the NDRC issued the *Notice on the Use of Bond Financing to Support the Construction of Affordable Housing* to address the shortage of funding to build affordable housing units. Based on the interview results, bond financing has played an important role in funding the affordable housing sector of Nanjing: RMB 13 billion was raised during the 12th five-year plan period (see Table 5.2). However, compared to REITs, bond financing is not currently very attractive in China, for several reasons.

● Local debt surged

Based on the regulations proposed by the NDRC, only government platform companies such as Anju and selected private companies⁸⁸ are able to issue bonds to construct affordable housing. However, it should be clear now that private companies are not willing to participate in the construction of affordable housing because it can only yield low or even no profits, especially for PRH. As a result, bond financing has become another form of government borrowings in China, as the overwhelming majority of bond issuers are government platforms or state-owned companies. Given that local governments have already serviced huge debts to build affordable housing units, bond financing has turned into a financing method, but not an attractive one to the government. Zhou and Liu (2011) suggest that bond financing might ostensibly solve the funding problem, but in essence, it would make the financing problems of local governments worse in the long run.

⁸⁸ All three conditions must be met: 1. the total assets of the company are more than RMB 150 billion, 2. company revenue is over 30 billion a year, 3. the asset-liability ratio shall not exceed 85%.

● Lack of private sector involvement

It was supposed that bond financing could become a link between the private sector and the affordable housing sector, since selected private companies were able to issue bonds to build affordable housing. However, as mentioned above, the private sector has no intention of building affordable housing units, and this policy has thus become words on a paper for the private sector. In fact, the present author believes that it would be highly difficult to encourage the private sector to participate in the construction of affordable housing in China if this remains unprofitable, whether it be through bond financing or other methods. Even if some private companies wanted to issue bonds, it would be further questionable whether these bonds would default because of the lack of profit.

Therefore, compared to REITs, bond financing cannot address the underlying funding problem of the affordable housing sector of China; on the contrary, it would increase the government borrowings and financial burden in the long run. Perhaps this is why the policy regarding bond financing released in 2011 has been heavily debated by Chinese scholars, who have questioned its effectiveness and negative effects (see: Li, et al., 2011; Sun, 2011; Zhou, 2011).

7.6.2 Rental Subsidies

During the research process, housing vouchers were found to play a vital role in the affordable housing sector in the US. This could be a good reference for China. However, if a similar policy was employed in China, it would require a deep change in the country's current affordable housing system, from addressing the affordability problem from the supply side to doing so from the demand side.

Wang (2015) compares the current affordable housing policy, namely building affordable housing units, and the proposed rental policy, namely rental subsidy such as housing vouchers, using three indicators: efficiency, cost, and social impact. He summarises the advantages and disadvantages of each policy, as shown in the table below.

Table 7.3: ‘Rental Subsidy’ and ‘Building Affordable Housing’ Advantages and Disadvantages Analysis

Support Methods	Advantages	Disadvantages
<i>Rental Subsidy</i>	<ol style="list-style-type: none"> 1. Reduce fiscal expenditures 2. Reduce direct intervention in the housing market 3. Avoid differences in physical spaces (slums and rich areas) 4. Entry and exit mechanisms are simpler 5. More effective in resource allocation 	<ol style="list-style-type: none"> 1. May lead to higher rents 2. Influenced by the development of city’s rental market
<i>Building Affordable Housing</i>	<ol style="list-style-type: none"> 1. Simpler to manage 2. Simpler to operate 	<ol style="list-style-type: none"> 1. Huge government spending 2. Routine maintenance increases government financial burden 3. Difficult to recover the cost 4. Exit mechanism is difficult to implement 5. Intervening in normal housing market 6. Slums could be formed

Source: Wang, 2015.

From the table above, it can be seen that rental subsidies have more advantages than does directly supplying affordable housing units to low-income households. In fact, as early as in 2009, Shenzhen used to study how to issue ‘housing vouchers’ to people in need, in a similar form to the one in the US (Su, 2009). However, no more details could be found out now. This might be for the following reasons.

● **A stable real estate market is required**

Ye (2009) suggests that a relatively stable real estate market is a pre-requisite for a housing voucher policy to be implemented. For example, in 2018, the rents in first-tier cities including

Beijing, Shanghai, and Shenzhen increased by an average of 50% due to increased house prices and other factors, whereas rental subsidies normally cannot be increased by 50% a year (Zhang, 2019). Hence, it can be stated that in an environment where house prices and rents are soaring, the effect of housing vouchers could be highly limited (Hu, 2011). As a result, to implement a housing voucher policy, the government must interfere in the housing market directly for macro adjustment and control when necessary, to prevent house prices and rents from rising too fast, and to maintain the stable development of the real estate market in China.

- **A sound social credit system is required**

Hu (2011) points out that a sound and effective personal credit system needs to be established before a housing voucher policy can be implemented. This is because the credit system is directly related to how much the government will spend on the proposed housing voucher programme and how many people will be covered, as the credit system will ensure that rental subsidies benefit people who are in real need. However, according to China Youth Daily (2018), during the 2018 National People's Congress and Chinese People's Political Consultative Conference (NPC and CPPCC), the deputy director of the NDRC stated that 'the social credit system is in the initial stage and needs to be improved constantly'. This suggests that rental policy such as housing vouchers cannot be employed as external conditions are not yet ripe.

- **An established rental market is required**

Thus far, it should be clear that China aims to build an 'affordable, fair, and sustainable' rental market by 2020. This also suggests that an established rental market has not yet been built. According to Wang (2015), before the 12th five-year plan, the rental market was marginalised in the political agenda: only homeownership was heavily addressed, while related rental policies could not be introduced as there was no complete rental housing market at all (specific problems were: market was messy and that it lacked supervision, for example). However, the Chinese government has now realised the imbalance between the homeownership market and the rental market, and has put more emphasis on the latter. Although a sound rental housing market is emerging in China, it is believed that related rental policies can only be implemented after a complete and mature rental market is established, and more time is needed for this.

Based on the above analysis, it can be stated that the policy of rental subsidies has more advantages than does the current affordable housing policy of directly building affordable housing units. However, there are several reasons why such a rental policy cannot be implemented at present. Firstly, China's real estate market is unstable, with large fluctuations. Secondly, a sound and comprehensive social credit system has not yet been established. Thirdly, a complete and mature rental housing market has not yet been built in China. Therefore, due to its inoperability for some time to come, the potential solution of rental subsidies is not as popular as the idea of establishing affordable REITs in China.

7.6.3 Government Credits

As mentioned several times already in this thesis, tax credit is a highly significant policy for the affordable housing sector of the US. Compared to REITs, it is the 'real deal' according to the interviewee from the NHT. Hence, the present author suspects that a similar policy could be used in China to address the affordability problem.

In fact, He and Zhang (2013) put forward that tax credit would heavily reduce the financial burden imposed on the government, since it would divide the large lump sum of investment in affordable housing into 10 years. Specifically, they calculated that for every RMB 500 billion needed, RMB 307.1 billion of private capital would be introduced into the construction of PRH projects through the proposed tax credit policy (*ibid.*). However, there is an important and underlying factor hindering the possibility of implementing this policy in China in the foreseeable future, in spite of this good estimate.

In 1994, the most important tax system reform in modern China was introduced: a tax revenue sharing system that was brought in line with the market economic system (Zhao and Liu, 2014). In this system, various taxes and related tax revenues were formed to be central tax, local tax, and shared tax (*ibid.*). According to the model of central and provincial governments for the tax power division between the provincial and municipal levels, provincial tax, local and municipal tax, and shared tax were established too. He and Zhang (2013) argue that if the proposed tax credit policy was introduced in China, tax credit should be shouldered by the shared tax between central and provincial governments, and between provincial and local governments, as building affordable housing is a shared responsibility for the three levels of government.

Currently, the shared tax accounts for nearly 70% of China's national tax revenue (Zhang, 2018). More importantly, the principal part of the shared tax includes value added tax, corporate income tax, and individual income tax, which together form a very large proportion of the government tax revenue at the three levels (He and Zhang, 2013). In China, government revenue mainly comes from taxation income, and this income essentially depends on the level of economic development in a region (ibid.). As a result, it would be difficult to determine what a fair and reasonable proportion of tax credit would be for central, provincial, and local governments to undertake, given that the level of economic development varies from region to region, causing great disparities in terms of government tax revenues. In other words, compared to developed countries such as the US, regional differences in China appear to be greater, and interprovincial or even intercity differences within the same province could be immense. Consequently, a three-party-agreed proportion of tax credit for each party to undertake would be highly difficult to decide in a short time, given that governments at different levels and in different regions all have their own budget revenues and expenditure plans which depend on different levels of economic development.

In addition, this thesis used game theory to describe the central-local governments' relationship in China (see Section 3.3.1). It was suggested that a tax credit consensus could not be reached in a brief period, especially in terms of the distribution of economic interests.

All in all, tax credits are still far from being an actual solution in China. Compared to REITs, using a tax credit policy in China is less discussed in academic circles, and it is barely mentioned by the government due to its infeasibility in the short run. It is believed that an effective, robust, and long-term policy is the key to attract private capital, while the complex relationships among the governments of China would only delay the introduction of the policy and reduce the confidence of the private sector regarding the proposed solution of tax credits.

7.6.4 Summary

In the course of this research project, some other potential solutions to the affordable housing issue in China were identified, including bonds, rental subsidies, and housing tax credits. These were summarised above.

Bond financing in China has become another form of government borrowing, and would be difficult to use to fundamentally address the affordability problem. Furthermore, while rental subsidies and tax credits might be effective solutions, such policies cannot be implemented too soon due to various deep reasons. For example, China lacks a sound social credit system and rental housing market to introduce a policy of rental subsidies such as the housing vouchers in the US. Moreover, the current tax revenue sharing system and complex central-local government relationship limit the possibility of using tax credits in China from the very start.

Therefore, compared to these solutions, REITs are the best possible and most attractive one under the current conditions in China. This vehicle could be used to attract private capital into the field of affordable housing, thus repaying the government debt and also funding new constructions of affordable housing in the present context. Most importantly, establishing REITs in China has been proven to be feasible and could be realised in the near future.

On the other hand, it is argued in this thesis that policies such as rental subsidies and tax credits should be encouraged and introduced when the conditions permit it. These policies would not only reduce government spending on the affordable housing sector, but would also promote the sustainable development of this sector in the long run, based on the experiences from the US. Hence, it can be stated that REITs could be the first feasible attempt to address the affordable housing issue in China, while housing vouchers and tax credits could be the second or third as the affordable housing sector and the overall environment develop. However, more patience is needed.

7.7 Conclusion and Limitations

This chapter presented the Nanjing model to guide how a REIT could be established in Nanjing and other similar cities. This model uses part of the stock held on affordable housing estates based on the experiences and lessons learned from Hong Kong and the US. Based on the Nanjing model, the proposed REIT would include the commercial real estate located within its affordable housing properties as the transferred portfolio, or a mixed portfolio containing a majority of commercial real estate and some PRH units. It is believed that this would help to stabilise and generate positive cash flows, which would earn investors an

acceptable return on capital. The proposed REIT should also be established as a private unlisted real estate company to balance each stakeholder's interest. Moreover, it is suggested that the proposed REIT should target institutional investors, as this would be the most convenient way of raising capital.

However, potential barriers currently exist to the development and establishment of REITs in China, and not just in Nanjing. These barriers relate to the lack of REIT legislation, confusion regarding setting up these vehicles and granting them tax-free status, and a lack of talent to establish these complex vehicles and subsequently manage them. These issues must be addressed before REITs can be established in China.

Even under trying conditions, the Nanjing government is still trying to build a REIT to liquidise the assets of the affordable housing sector based on the Nanjing model. According to the government's plan, the proposed REIT in Nanjing will be a commercial one due to market preference, and the ownership of the commercial real estate will still be held by the government. This is in line with the current legal framework, and will also serve as the government's bargaining chip with the SAT. If the REIT is established based on the Nanjing model, it is believed that more than RMB 6 billion will be released from the current governmental housing stock. Although this amount could not fully address the funding gap experienced by the affordable housing sector of Nanjing, it would more than enough to support the construction of PRH in Nanjing during the 13th five-year plan period. This construction would require about RMB 3 billion to increase the PRH supply in the city, and the remaining money would be used to repay the government debt.

In addition, as illustrated by the Penghua Qianhai Vanke Quasi-REIT, which could not be set up as a true REIT under the current conditions in China, the proposed REIT in Nanjing could be the first real REIT in the country. It would also be highly popular and successful. Moreover, both the affordable housing sector of Nanjing and the government would benefit from the establishment of such a REIT, especially from a financial perspective.

In summary, this thesis argues that a purely affordable housing REIT containing only housing would be impossible to establish in Nanjing and similar major cities under current and foreseeable conditions. However, a REIT holding commercial real estate within affordable

housing properties would be a workable solution to the affordable housing sector, like Link in Hong Kong. In fact, it would still be feasible to build a mixed portfolio of both commercial real estate and PRH while also meeting the average market return. However, ‘feasible’ does not mean ‘acceptable’, and the market now is not willing to participate in any affordable housing business but a commercial one. As a result, this thesis suggests that currently, only a limited state-market mix could be formulated at the consumption stage of China’s housing provision chain, as the actual PRH stock is still difficult to liquidise but the commercial real estate held by the affordable housing sector would be transferred. However, it is also believed that the proposed REIT based on the Nanjing model would be an excellent start. Then, once enough knowledge was gained and the market confidence was built from this REIT, the next step could be to build a mixed portfolio.

Moreover, it is believed that the Nanjing model is portable and could be copied in similar major cities such as Hangzhou and Suzhou. This is based on Mr. B’s suggestion that affordable housing finance patterns are similar throughout the whole country (refer to Section 5.4.1.2). A general unlisted REIT targeting institutional investors offers a practical solution to the affordable housing crisis in China, and also serves as a tool to change and improve the current rental housing system dominated by the government, to help to build an affordable, fair, and sustainable rental housing market in the country by 2020.

Besides, some other possible solutions to the affordable housing issue in China have been summarised, including bonds, rental subsidies and government credits. However, compared with REITs, bonds cannot fundamentally address the current funding problem, while rental subsidies and tax credits would be difficult to be realised in the period ahead due to some underlying reasons.

Finally, it needs to state that because of the lack of confirmatory data such as the current value of the affordable housing assets of Nanjing and specific rental income of PRH and commercial real estate. The calculation results of this chapter might not be very accurate, which cannot be recognised as a precise data analysis. Thus a further quantitative analysis is desired when related data is available.

Chapter 8: Discussion and Conclusion

8.1 Introduction

The idea of this thesis was initially originated from the current event experienced in the affordable housing sector of China. That is, a serious housing affordability issue has occurred because of market failure, and the government is determined to tackle this problem by increasing the affordable housing supply. However, during the process of the government intervention, it is argued that a huge funding gap exists if the Chinese government is to build enough affordable housing to house the expanding urban population. A lack of alternative funding mechanisms and illiquidity in the capital markets are inhibiting the ability of the local government to finance the construction of new lease-based affordable properties on the scale required in most urban housing markets. The Chinese government thus plans to use the investment vehicle of REITs to securitise affordable rental housing owned by local governments and help finance the construction of new affordable housing units. But it is unclear how these exploratory initiatives will work in China to provide affordable housing REITs or the factors that will influence their success, and many details regarding affordable housing finance in China remain indistinct.

In this context, this thesis has examined the situation of affordable housing finance in Jiangsu Province and specifically its capital city of Nanjing, and revealed the underlying reasons for the national initiative to establish affordable housing REITs. This involved investigating and analysing the details to determine the rationale behind the emphasis on REITs as a possible solution to the affordable housing finance problems faced by local governments. In addition, case studies were conducted in Hong Kong and the US to examine how affordable housing and REIT investments can be integrated together to generate stable returns that are attractive to the investment market, while providing a mechanism that preserves and increases affordable housing stocks. There are no ready-made templates in mainland China to guide how REITs and particularly REITs from the affordable housing sector should be established in the country. Therefore, the mature experiences in Hong Kong and the US were crucial to this research project as references. After initial preparation in Glasgow, the fieldwork of this study lasted from March 2015 to September 2017, with breaks, to obtain up-to-date data and

feedback to construct a current and thorough study that could have a powerful impact in a real-world scenario.

Based on the research questions and the findings, this chapter summarises the main points of thesis. It then considers the contributions of this research to the literature, society, industry, and public policies. Finally, it suggests topics for further detailed research.

8.2 Major Research Findings

This study aimed to answer the following key questions.

Q1: How is affordable housing financed in Nanjing, what are the current problems in this financing system, and why might REITs be useful?

Q2: If REITs are useful and need to be established in China, what insights can be learned from overseas affordable housing REITs?

Q3: Based on the Hong Kong and US models and experiences, how can an affordable housing REIT be established in Nanjing, and what barriers currently exist that prevent C-REITs from being created in the affordable housing sector?

These questions are answer below using the major findings of this study.

8.2.1 The Situation and Background of Affordable Housing Finance in Major Chinese Cities

The mainstream English and Chinese literature claims that the major financing sources of affordable housing in China include support from the central government, 10% of the local government's land-transferring net income, and commercial and policy bank loans. However, this study revealed that in Nanjing and Jiangsu, for example, affordable housing finance has heavily relied on government borrowing, with nearly 90% of all affordable housing units financed in this way. The rest typically rely on government funding.

The difference between the reality and literature suggests that most researchers who have examined the topic of affordable housing finance in China have not had access to accurate governmental data. Conspiracy theorists would surmise that this was due to a government

cover-up, as the sheer burden of the government's debt could potentially lead the country into crisis. As the Chinese economy slows, this signals to the markets that the government is less able to repay its debt. This in turn increases the scale of the accumulated government debt, which the government is unwilling to report to the Chinese and international societies. As a result, the affordable housing sector in China is not very transparent and it is difficult to unravel the accounting, financing and performance of investments in affordable housing. The total level of spending and government borrowing is enormous, and could trigger public concerns over the solvency of local governments, especially during the 12th five-year plan period.

8.2.2 The Reason for Establishing Affordable Housing REITs

After the housing reform in 1998, the Chinese housing sector started its journey towards marketisation. However, this study found that during the process of establishing the housing market, the government not only neglected its original intention to build ECH to house 80% of urban households, but in fact significantly ignored the construction of the affordable housing sector. The government enjoyed the benefits of real estate marketisation, such as land finance, for a long time, but finally realised the problems associated with ignoring the affordable housing sector for more than 10 years, as it has caused social and political instability. Furthermore, the government also realised the problem with placing too much focus on the homeownership market. As a result of its neglect of the rental market, this market is now incomplete and unable to deliver the range of housing products associated with mature western housing markets.

To address these problems, the ambitious plan of building 36 million units of affordable housing, including around 20 million units of PRH, was proposed in the 12th five-year plan period. This thesis has argued that this massive affordable housing plan was a mitigation method to correct the market failure that resulted in the unaffordable house prices in major Chinese cities, which were out of reach for many urban households. However, this housing plan contained an error: it overestimated the financial abilities of local governments in China with a poor estimation, forcing them to borrow heavily to achieve their targets. Consequently, huge financial pressures have been placed on local governments, including government debt repayments, and have compromised their potential future spending power, as they have

locked in huge amounts of capital to construct a large number of PRH units and attached facilities.

Therefore, the Chinese government has chosen REITs as an investment vehicle that owns income-producing real estate to liquidise the PRH to release cash for the government, thereby easing the financial crisis and contributing to the delivery of more housing. The underlying driver in the creation of affordable housing REITs in China is to find a solution to the financial problem associated with the debt burdens, and to address the government failure that has occurred in the process of correcting the market failure. However, in the longer run, it is also believed that REITs could help to improve China's current rental housing system towards the goal of building an affordable, fair, and sustainable rental market by 2020. This would be done by creating a state-market mix at the consumption stage of the housing provision chain.

8.2.3 The Experiences and Lessons from Hong Kong and the United States

REITs in Hong Kong and the US are established vehicles that can be useful guides for the structure and operation of future Chinese REITs, as there is no precedent in mainland China that could be adopted as an alternative point of reference.

The Hong Kong model, namely Link REIT, stands out as the most relevant case study because of the similarity between Hong Kong and mainland Chinese cities in terms of the context, institutional framework, political background, even the motivation behind the establishment of REITs. Link REIT has been highly successful from a financial perspective in several ways. Firstly, it only includes commercial real estate within public housing properties into its portfolio, and these assets have generated stable and positive cash flows for investors. Secondly, the Hong Kong government has provided ongoing help to Link REIT to monopolise the commercial markets in which it operates. It has done so through planning schemes that prevent alternative retail and commercial developments from being built, thus forcing local residents to shop in Link properties. However, the social costs attached to the Link REIT have been huge. Link has steadily raised the rent in every shopping mall it owns and thus increased the cost of living for public housing residents. These shoppers account for one-third of the total Hong Kong population. Therefore, an anti-Link campaign has gained increasing strength since the creation of Link in 2005, as the public is growing increasingly

annoyed by the violation of its interests. Learning from this situation, the REIT in Nanjing must avoid potential conflicts between the public and private sectors within the public housing estates and provide a governance structure to ensure the profit goals do not result in the abandonment of social goals, as would typically happen in a public REIT. If this situation is not avoided, then mounting discontent and grievances in the public area will make it more difficult for the government to manage these communities. Hence, the REIT in Nanjing should try to strike a balance between the private and public sectors by providing a return from the REIT that represents an acceptable level of profitability while protecting and refraining from damaging the public interests of affordable housing residents.

To this end, the US model, namely the experiences from the CDT and HPET, is useful, although the context of the US affordable housing market is completely different to that of China, as affordable housing is an established profit-making business in the US. A useful characteristic to adopt from the US is the use of private rather than public governance structures for affordable housing REITs, as private REITs could be the better solution to preserve and expand the supply of affordable housing and to earn attractive returns for investors, whereas public REITs are normally profit-driven and thus disregard social goals. Secondly, the US experiences suggest that institutional investors should be the target investors for affordable housing REITs, as even in the most developed REIT market, namely the US, private investors are not as familiar with affordable housing REITs as institutional investors, who have prior experience with affordable housing and related vehicles providing robust and stable investment returns.

8.2.4 The Solution – the Nanjing Model, Its Potential Barriers and Application

Based on the current situation of the affordable housing sector in Nanjing and the insight from Hong Kong and US, this thesis developed the Nanjing model as an operational model for an affordable housing REIT in the city. The proceeds raised from the transfer of assets held by the local government could be used to solve its financial difficulties and increase the supply of affordable housing units in the city.

The Nanjing model has several features. Firstly, the proposed REIT could include only commercial real estate within affordable housing communities in its portfolio, as PRH can now be recognised as purely social housing that continues to lose money and will not deliver

the returns demanded by the investment market. On the other hand, a mixed portfolio containing both commercial real estate and PRH units could also feasibly meet the market average rate of return if the REIT was granted tax-free status. Secondly, the proposed REIT in Nanjing should be a private fund to make it easier to coordinate it with the public sector, thereby balancing the interests of stakeholders. Thirdly, the proposed REIT should target institutional investors, since this would be the most convenient way to securitise its assets in the current context of China. However, three barriers remain in place and need to be addressed: they concern law, taxation, and talent. True REITs based on the Nanjing model can only be created once these obstacles are removed.

Roundtable discussions took place with the Nanjing municipal government regarding the Nanjing model proposed in this thesis. The model received positive feedback, and its elements were officially accepted. However, the government has made several adjustments. The REIT will be a commercial one because the market finds including PRH units in the portfolio to be less appealing than a REIT portfolio composed entirely of commercial assets. Furthermore, the REIT will have Chinese-specific characteristics, as ownership of the assets in the REIT's portfolio will remain in the hands of the public sector. However, the REIT will have the management rights and the usufruct. This arrangement complies with the current legal framework in China and also satisfies the government's plan to negotiate with the SAT to obtain a tax-free status for the REIT. Also, it is believed that this arrangement could create a vehicle governance structure that grants the government control and allows it to influence the balance between business and social goals. Based on the Nanjing model, the annual return of the proposed REIT is estimated at around 5.5%, and crucially, it would release more than RMB 6 billion in commercial real estate located within the affordable housing communities of Nanjing. Of this freed capital, around 3 billion would be used to construct PRH during the 13th five-year plan period, and the rest would be used to repay the loan. Although the funding gap could not be fully addressed by this released because PRH units are difficult to liquidise, the REIT would be still be of great help to the affordable housing sector of Nanjing, and represent a large improvement to the rental housing system in the country. In addition, the case of Penghua Qianhai Vanke Quasi-REIT was examined in this thesis. The comparison suggested that the REIT in Nanjing would be highly successful and be the closest vehicle to the true REIT structure according to international standards. Finally, some other potential solutions to the affordability issue in China were summarised and analysed, including bonds,

rental subsidies and government credits. However, compared with these options, the investment vehicle of REITs could be the preferred solution for tackling China's housing affordability problems due to its feasibility and operability in reality.

All in all, a general unlisted, or private, REIT targeting institutional investors with a well-designed portfolio, such as commercial real estate within affordable housing communities, would provide a practical solution for the government to address the affordable housing crisis, as well as offer a brand-new investment channel for investors in China.

8.3 Academic Contributions

This thesis makes significant contributions to academia. First, crucially, it has clarified the situation of the affordable housing sector in major Chinese cities such as Nanjing. This will benefit the academic world as the research process uncovered many issues related to the inaccurate or misleading data commonly cited in Chinese housing-related studies. However, this kind of situation is understandable, because the Chinese government has controlled most data regarding the housing sector, granting researchers in research institutions such as universities limited access to official governmental data. Specifically, when the researcher conducted the fieldwork in Hong Kong, a professor from the Department of Real Estate and Construction of the University of Hong Kong, told the researcher that the Hong Kong government has established its own research division called the Central Policy Unit (CPU), meaning that the University of Hong Kong can no longer obtain governmental data for housing research unless publicly released. Since all the internal data is passed to and used by the CPU, external organisations such as the University of Hong Kong are no longer qualified to undertake government-related research. This kind of issue is more serious in the mainland. For example, a professor from the Institute of Construction and Real Estate of Southeast University in Nanjing told the researcher that if a research project contains the words 'real estate' in its title, then it is impossible to secure any funding for it from the government. The reason for this lack of transparency is because the government has deemed real estate to be a politically sensitive issue in China. Thus, housing-related research in China faces many difficulties, and an important constraint is the lack of the data. As a direct result, research is often so unconnected to real-world situations that it can offer little use to real-world scenarios. However, this thesis has updated the knowledge of the current situation in the affordable

housing sector of China and could be used as a reference for further housing studies in related areas.

In addition, this thesis is the first to elaborate on the idea of affordable housing REITs in China. Previous studies have mainly been general ones based on the government's research line and models proposed by researchers. However, many important parts have been missing, including why the government wanted to introduce the investment vehicle of REITs to the affordable housing sector; what the facts are in relation to the scale, nature, and financing of the affordable housing sector in China; and what kind of affordable housing REITs could be acceptable to both the government and investors. The present thesis has answered these questions through a painstaking investigation, which is believed to close the loop on this topic for the first time by sufficiently addressing it.

8.4 Social Impact

This research project has been deemed to be of highly practical significance, since the Nanjing municipal government has been working on its affordable housing scheme based on the Nanjing model proposed by the researcher. Using the Nanjing model, it is expected that more than RMB 6 billion will be released to construct new PRH units and to repay the debt currently held by the Nanjing local government. It could be argued that if the model is finally successful in the city, not only the government but also thousands of low-income households will benefit from this study, implying its great social benefits.

Furthermore, the developed model is portable, meaning that it can be copied by similar cities such as Hangzhou and Suzhou to solve similar financial problems in their affordable housing sectors. This means that the Nanjing model has the potential to be highly replicable, and could turn out to be the Chinese model used to guide how REITs are set up from the affordable housing sector in major cities in China.

According to the newest information, the proposed REIT based on the Nanjing model as a way to finance affordable housing in Nanjing will soon be submitted to the central government for review. It is the hope that REITs will become a reality in China with the help

of this research, if the REIT based on the Nanjing model is considered to be an acceptable and compromised scheme by the central ministries, such as the MOHURD and the SAT.

8.5 Limitations and Suggestions for Further Research

As previously discussed, this research included a small number of interviews; hence, specific results were obtained, rather than generalised solutions for all cities in China. Furthermore, the method of elite interviewing used in this research may sometimes lack validity and reliability, thus producing data that could be subjective and difficult to replicate. In addition, it should be stated that the representativeness of Nanjing as a case study is limited to similar major cities in China, as mentioned above, thus leaving a gap in the study of smaller cities. Finally, because of the lack of confirmatory data such as the current value of the affordable housing assets of Nanjing, this research project could not be a precise quantitative analysis, and the data might contain errors.

However, it is argued that this thesis is primarily a qualitative case study, which has provided a general framework to guide the proposed REITs to be launched in Chinese major cities. But on the other side, legal spadework, taxation issue, serious financial analysis and evaluation to design the actual models remain ahead.

Thus, two avenues of further research have emerged from this thesis which could help accelerate the process of the establishment of REITs in China.

One regards the barriers to the birth of REITs in the country. The three barriers of law, taxation, and talent were identified in this study, but they were not the major focus. However, the removal of these barriers is necessary before REITs can be set up in China. Hence, they are worth further study. The specific and operational schemes required to tackle those barriers are missing in the literature, so further research is necessary to identify the issues impeding the birth and development of REITs in China.

Secondly, the establishment of the affordable housing REIT in Nanjing based on commercial real estate within affordable housing properties is currently the only plan to be accepted by both the government and the market. However, this thesis argues that the portfolio of the

proposed REIT in Nanjing could also include some PRH units in the future to develop a genuine ‘affordable housing’ REIT while also achieving an appropriate return rate for investors. Nevertheless, early work suggests that this step will depend on the success of the proposed commercial real estate REIT. Once it proves successful, including PRH units in the portfolio could be the next step, as enough knowledge will have been gained and the market be confident in investing in REITs based on the properties of affordable housing communities. However, researchers should be prepared for this possibility as another interesting topic, as this would be another milestone that has not been realised in Hong Kong but could be achieved in the mainland in the future to help the country construct an affordable, fair, and sustainable rental housing market in the long run. But, importantly, this thesis suggests that comprehensive financial and sensitivity analyses need to be conducted to carefully test and verify the feasibilities of the proposed models above when related quantitative data is available.

In general, the researcher spent years trying to understand and establish a robust link between the affordable housing sector and REITs in China initially proposed by the government. For the affordable housing sector, a state-market mix could be created by the liquidity that REIT would bring to the sector and thus increase the supply of affordable units to those in need. Regarding the REIT industry emerging in China, a reporter from Hong Kong once said: ‘property assets that can be spun off into real estate investment trusts on the mainland could top US\$6 trillion by 2020 as the authorities speed up regulatory efforts to get them launched’ (Chiang, 2014). When the study idea of affordable housing REITs was initiated in Melbourne in 2012, the researcher did not expect that the course of the development of REITs in China would be so rapid. However, the reality has proved that the vision of this research is correct and long-term. The researcher firmly believes that the affordable housing REITs will only be the introduction of a new trillion-dollar industry in China, and what this research project has offered is a positive and beneficial exploration and discussion. However, like with the nearly 40 years of Chinese-style incremental reform, ‘crossing the river by feeling the stones’ as Deng Xiaoping put it, the future results of the C-REITs remain unclear.

Appendix A: Motion against Link REIT's IPO

投票 VOTE: 3
日期 DATE: 01/06/2005
時間 TIME: 04:37:14 下午

動議 MOTION: 「要求擱置私有化」議案
MOTION "DEMANDING THE SUSPENSION OF PRIVATIZATION"

動議人 MOVED BY: 陳偉業 Albert CHAN

	功能團體 Functional Constituencies	地方選區 Geographical Constituencies	最後結果 Final Result
出席 Present	25	27	
投票 Vote	25	26	
贊成 Yes	6	8	
反對 No	18	15	
棄權 Abstain	1	3	
結果 Result	否決 Negatived	否決 Negatived	否決 Negatived

個別表決如下 THE INDIVIDUAL VOTES WERE AS FOLLOWS:

議員 MEMBER	投票 VOTE	議員 MEMBER	投票 VOTE
功能團體 Functional Constituencies		地方選區 Geographical Constituencies	
何鍾泰 Dr Raymond HO	贊成 YES	范徐麗泰 Mrs Rita FAN	出席 PRESENT
李國寶 Dr David LI		田北俊 James TIEN	反對 NO
呂明華 Dr LUI Ming-wah	反對 NO	何俊仁 Albert HO	反對 NO
吳靄儀 Margaret NG	棄權 ABSTAIN	李卓人 LEE Cheuk-yan	贊成 YES
張文光 CHEUNG Man-kwong	反對 NO	李柱銘 Martin LEE	反對 NO
陳智思 Bernard CHAN	反對 NO	李華明 Fred LI	反對 NO
梁劉柔芬 Mrs Sophie LEUNG		周梁淑怡 Mrs Selina CHOW	反對 NO
單仲偕 SIN Chung-kai	反對 NO	涂謹申 James TO	反對 NO
黃宜弘 Dr Philip WONG	反對 NO	陳婉嫻 CHAN Yuen-han	贊成 YES
黃容根 WONG Yung-kan	反對 NO	陳鑑林 CHAN Kam-lam	反對 NO
楊孝華 Howard YOUNG	反對 NO	梁耀忠 LEUNG Yiu-chung	贊成 YES
劉皇發 LAU Wong-fat	反對 NO	曾鈺成 TSANG Yok-sing	
劉健儀 Miriam LAU	反對 NO	楊森 Dr YEUNG Sum	反對 NO
霍震霆 Timothy FOK		劉千石 LAU Chin-shek	贊成 YES
石禮謙 Abraham SHEK	反對 NO	劉江華 LAU Kong-wah	反對 NO
李鳳英 LI Fung-ying	贊成 YES	劉慧卿 Emily LAU	贊成 YES
張宇人 Tommy CHEUNG	反對 NO	蔡素玉 CHOY So-yuk	反對 NO
方剛 Vincent FANG		鄭家富 Andrew CHENG	反對 NO
王國興 WONG Kwok-hing	贊成 YES	譚耀宗 TAM Yiu-chung	
李國麟 Dr Joseph LEE	反對 NO	陳偉業 Albert CHAN	贊成 YES
林偉強 Daniel LAM	反對 NO	馮檢基 Frederick FUNG	贊成 YES
林健鋒 Jeffrey LAM	反對 NO	余若薇 Audrey EU	棄權 ABSTAIN
梁君彥 Andrew LEUNG	反對 NO	李永達 LEE Wing-tat	反對 NO
郭家麒 Dr KWOK Ka-ki	贊成 YES	李國英 LI Kwok-ying	反對 NO
張超雄 Dr Fernando CHEUNG	贊成 YES	馬力 MA Lik	反對 NO
黃定光 WONG Ting-kwong	反對 NO	梁家傑 Alan LEONG	棄權 ABSTAIN
詹培忠 CHIM Pui-chung		梁國雄 LEUNG Kwok-hung	
劉秀成 Patrick LAU	反對 NO	張學明 CHEUNG Hok-ming	反對 NO
鄭志堅 KWONG Chi-kin	贊成 YES	湯家驊 Ronny TONG	棄權 ABSTAIN
譚香文 TAM Heung-man	反對 NO	鄭經翰 Albert CHENG	贊成 YES

秘書 CLERK

Appendix B: Interview Topics

Interviewees	Topics	Location
Mr. A	<ul style="list-style-type: none"> The current situation of the Chinese real estate market The situation and practice of the affordable housing sector of China The affordable housing policy set for the 12th five-year plan The possible use of REITs in the affordable housing sector 	Beijing
Mr. B	<ul style="list-style-type: none"> The situation and practice of the affordable housing sector of Jiangsu The affordable housing finance details in Jiangsu Problems and risks in the sector The possible use of REITs 	Nanjing
Mr. C	<ul style="list-style-type: none"> The situation and practice of the affordable housing sector of Nanjing (with focus on PRH) The affordable housing finance details in Nanjing Problems and risks in the sector The possible use of REITs 	Nanjing
Mr. D	<ul style="list-style-type: none"> The situation and practice of the affordable housing sector of Nanjing The situation and practice of Anju The possible use of REITs 	Nanjing
Mr. E	<ul style="list-style-type: none"> The financing details of Anju (income and expenditure) The details of Anju's housing stock 	Nanjing
Miss. F	<ul style="list-style-type: none"> The details of Anju's housing stock (with focus on its commercial real estate) 	Nanjing
Mr. G	<ul style="list-style-type: none"> The situation and practice of the affordable housing sector of Hong Kong Affordable housing finance in Hong Kong 	Hong Kong

	<ul style="list-style-type: none"> • The Link REIT (background, history, good, bad, problems, risks) • The relationships among Link, government and society • Suggestions on proposed REITs in the mainland 	
Mr. H	<ul style="list-style-type: none"> • The situation and practice of the affordable housing sector of Hong Kong • Affordable housing finance in Hong Kong • The Link REIT (background, history, good, bad, problems, risks) • Comments on Link • Suggestions on proposed REITs in the mainland 	Hong Kong
Mr. I	<ul style="list-style-type: none"> • Civil opposition against Link and why 	Hong Kong
Mr. J	<ul style="list-style-type: none"> • Affordable housing REITs in the US REIT industry 	Washington DC
Mr. K	<ul style="list-style-type: none"> • The situation and practice of the affordable housing sector of the US • The operation and practice of NHT • Financing details of NHT • Why do affordable housing REITs 	Washington DC
Mr. L	<ul style="list-style-type: none"> • The situation and practice of the affordable housing sector of the US • The operation and practice of CDT • Financing details of CDT • Why do affordable housing REITs 	New York City

Appendix C: Ethical Approval



University of Glasgow | College of Social Sciences

CSS July 2014

Ethics Committee for Non-Clinical Research Involving Human Subjects

Staff Research Ethics Application ☐

Postgraduate Student Research Ethics Application ☒

Application Details

Application Number:

Applicant's Name

Project Title

Application Status

Approved

Start Date of Approval (d.m.yr)

(blank if Changes Required/ Rejected)

End Date of Approval of Research Project (d.m.yr)

Only if the applicant has been given **approval** can they proceed with their data collection with effect from the date of approval.



University of Glasgow

College of Social Sciences

Request for Amendments - Reviewer Feedback

Ethics Committee for Non-Clinical Research Involving Human Subjects

Staff Research Ethics Application ☐

Postgraduate Student Research Ethics Application ☒

Application Details

Application Number:

Applicant's Name:

Project Title:

Original Date of Application Approval:

Date of Amendments Approved:

Outcome:

Reviewer Comments

Amendments approved.

NB: Please check that your research does not fall within any of the insurance exceptions as it is taking place overseas.

Appendix D: Sensitivity Analysis of the Rate of Return (Commercial Real Estate Only)

		Rental Income													
Asset Value	In: Billions RMB	0.29	0.31	0.33	0.35	0.37	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.55
	5.5	5.27%	5.64%	6.00%	6.36%	6.73%	7.09%	7.45%	7.82%	8.18%	8.55%	8.91%	9.27%	9.64%	10.00%
	5.6	5.18%	5.54%	5.89%	6.25%	6.61%	6.96%	7.32%	7.68%	8.04%	8.39%	8.75%	9.11%	9.46%	9.82%
	5.7	5.09%	5.44%	5.79%	6.14%	6.49%	6.84%	7.19%	7.54%	7.89%	8.25%	8.60%	8.95%	9.30%	9.65%
	5.8	5.00%	5.34%	5.69%	6.03%	6.38%	6.72%	7.07%	7.41%	7.76%	8.10%	8.45%	8.79%	9.14%	9.48%
	5.9	4.92%	5.25%	5.59%	5.93%	6.27%	6.61%	6.95%	7.29%	7.63%	7.97%	8.31%	8.64%	8.98%	9.32%
	6.0	4.83%	5.17%	5.50%	5.83%	6.17%	6.50%	6.83%	7.17%	7.50%	7.83%	8.17%	8.50%	8.83%	9.17%
	6.1	4.75%	5.08%	5.41%	5.74%	6.07%	6.39%	6.72%	7.05%	7.38%	7.70%	8.03%	8.36%	8.69%	9.02%
	6.2	4.68%	5.00%	5.32%	5.65%	5.97%	6.29%	6.61%	6.94%	7.26%	7.58%	7.90%	8.23%	8.55%	8.87%
	6.3	4.60%	4.92%	5.24%	5.56%	5.87%	6.19%	6.51%	6.83%	7.14%	7.46%	7.78%	8.10%	8.41%	8.73%
	6.4	4.53%	4.84%	5.16%	5.47%	5.78%	6.09%	6.41%	6.72%	7.03%	7.34%	7.66%	7.97%	8.28%	8.59%
	6.5	4.46%	4.77%	5.08%	5.38%	5.69%	6.00%	6.31%	6.62%	6.92%	7.23%	7.54%	7.85%	8.15%	8.46%
	6.6	4.39%	4.70%	5.00%	5.30%	5.61%	5.91%	6.21%	6.52%	6.82%	7.12%	7.42%	7.73%	8.03%	8.33%
	6.7	4.33%	4.63%	4.93%	5.22%	5.52%	5.82%	6.12%	6.42%	6.72%	7.01%	7.31%	7.61%	7.91%	8.21%
	6.8	4.26%	4.56%	4.85%	5.15%	5.44%	5.74%	6.03%	6.32%	6.62%	6.91%	7.21%	7.50%	7.79%	8.09%
	6.9	4.20%	4.49%	4.78%	5.07%	5.36%	5.65%	5.94%	6.23%	6.52%	6.81%	7.10%	7.39%	7.68%	7.97%
	7.0	4.14%	4.43%	4.71%	5.00%	5.29%	5.57%	5.86%	6.14%	6.43%	6.71%	7.00%	7.29%	7.57%	7.86%

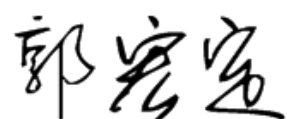
南京市住房保障和房产局

情况说明

英国格拉斯哥大学：

按照党中央、国务院加快发展住房租赁市场的要求，南京市正在积极开展房地产信托投资基金（REITs）的推进工作。为此，黄劼同志（生日：1987 年 3 月 15 日）参与撰写了我局为南京市人民政府提供的关于如何在本市建立保障性住房 REITs 的内部研究资料。其项目工作时限为 2017 年 3 月至 2017 年 7 月。期间，黄劼同志对此项目贡献巨大，其提出的“南京模式”已被市政府采纳。如有问题或意见，请及时反馈我局。

南京市住房保障和房产局
局长



2017 年 11 月 6 日

Translation from Chinese

Nanjing Housing Security and Real Estate Management Bureau

Information Note

The University of Glasgow:

According to the general guidance of the CPC central committee and the State Council to accelerate the development of the rental housing market, Nanjing government is actively promoting the development of REITs. For this purpose, Mr. Jie Huang (DOB: 15/03/1987) has participated into the writing of internal research materials organised by our Bureau, which prepared for the Nanjing Municipal Government for how to set up affordable housing REITs in the city. The duration of this project lasted from March 2017 to July 2017. Mr. Jie Huang has made a significant contribution to this project, which the ‘Nanjing model’ proposed by him has been adopted by the municipal government. If you have any questions, please do not hesitate to contact our Bureau.

Nanjing Housing Security and Real Estate Management Bureau

Director General

Guo, Hongding (Signature)

06/11/2017

Appendix F: Supplemental Interview



PENGHUA FUND MANAGEMENT CO., LTD

Penghua Fund Management is an asset manager founded in 1998 and based in Shenzhen, China. With assets under management of RMB 530.817 billion as of June 30th 2016, Penghua represents one of the major Chinese asset managers⁸⁹.

The company is active in the management of third party assets, through funds for retail clients, social security funds characterized by Qualified Domestic Institutional Investor (QDII) and separately managed accounts. Penghua is one of the main managers in China of social security funds in terms of assets under management .

Interviewee	Role	Location
Mr. M	Fund Manager of Penghua Fund Management Co. Ltd	Shenzhen

⁸⁹ See: <https://www.eurizoncapital.com/scriptWeb40/eurizonweb/eurizon/en/about-us/penghua-fund-management.jsp>

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