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Thesis Summary

In recent times there has been a significant escalation of rapid growth in the housing sector which has led to increases in vacant housing stock in China. At the same time there is a large segment of the population which is forced to live in overcrowded or substandard housing due to their inability to enter the housing market. However, developers continue to construct new housing at a rapid rate, many times disregarding the actual needs of the marketplace. Due to the important role in traditional Chinese society that housing plays, property ownership is a driving force in the Chinese social order. Vacant housing has become a serious concern for many Chinese Government groups, social observers, and economists. The inability of so many Chinese people to participate in the housing market, can lead to profound negative impacts in the future of Chinese society if these problems are not solved.

Vacant housing has significant social and environmental impacts which need to be understood. Objectives in this thesis were established to show the causes of the phenomenon of vacant housing in China. Nine hypotheses were developed with the intention of facilitating a better understanding of the problem behind vacant housing. These nine hypotheses were formulated based on a literature review of the causes and effects of vacant housing in various international settings. These international settings were used to formulate the appropriate approach to the Xiamen China case study.

The research type is explanatory. A case study research was conducted in Xiamen, being a real estate pioneer development city in China. Primary data was collected by means of in-depth interviews and focus groups. The interview targets and focus groups involved were several relevant key actors, including three groups which are as follows; three categories of developers, Xiamen Government agencies and individual property homeowners. Secondary data was collected by means of desk research through reports, policy documents, journal and online statistic reviews.

In my thesis, nine hypotheses were tested and identified for the cause of vacant housing.

Several main findings arose from a careful analysis of the data collected from the periods between 2007 and 2011. Key points to support the original idea behind the concept of vacant housing include that there was a critical phase during 2008 where many factors came into play that had a direct effect on the creation of vacant housing. These included but were not limited

to the availability of low interest rates, easy credit, massive liquidity, government stimulus policies and a general exuberance in the real estate market among Chinese in general. However, since 2010 new government policies have been enacted that have contributed to the creation of more vacant housing. These policies are often an attempt by the government to slow down price increases in housing, yet they have created a domino effect due to an increase in new housing construction and an overstock of properties.

Key Words: China, Vacant housing, Chinese macro economic policies, interest rate, production target

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Abbreviations

PBC	People's Bank of China
CREIS	China Real Estate Index System.
M2	Money Circulation
CRIC	Chinese Real Estate Information Corporation

Annex

1. Literature Review Macro Matrix
2. Questionnaires

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Chapter One Introduction

1.1 Background

Prior to the 1980s within the Chinese housing market sector: all housing was established by Communist work units or by residents themselves. The transformation of the housing industry from a planned system to a market system has played a key role in current housing studies. With the increasing role of market mechanisms, the Chinese government took initiative to decentralize power among local governments in the early 1980s. Local governments were given the power to deal with land and housing market. Since then, housing provisions began to be commercialized in China. In recent years; local governments have highly relied on retaining more financial resources by land-leasing. It facilitated the development of the real estate market in China. By 1993, the number of real estate companies grew from 13,566 in 1992 to an incredible 26,027. Annual commercial housing investment increased by 164.9 percent from 1992 to 1993.(China Statistic Bureau 2002)

As a developing country in transition, China has been the scene of an economic boom. People in China are rapidly increasing their consumption level in housing. In respond to this market demand, the volume of housing has climbed rapidly within dozens of years. Investors are motivated by high expectations on the return benefits from the real estate market. There is interdependency between land transactions and housing. Due to the increased effect each has had on the other, land transactions have led to over activity in this sector. Local governments are relying heavily on revenues from land leasing. In China, this has resulted in a serious strain on land resources in many places within the country.

However, in recent years, vacant housing in China has expanded. Until the end of 2008, the area of total vacant housing in China was 164million square meters, which increased 21.8% compared with the previous year.(Su Chen 2010)

Land resources have been highly developed but a lot of the housing is vacant which has heavily impacted the sustainable economic development of the Chinese economy.

In this thesis, the main research area is about the causes of vacant housing in China. The research objective is to identify the different causes of vacant housing in China from the

supply perspective. Xiamen, a southern coastal city in China was adopted as a case study to analyze this research.

1.2 Problem Statement: Vacant Housing

Due to the rapid escalation of the real estate industry within recent decades in China, land transaction business has become very active. According to China Economic International Network, land leasing income for local governments in China has increased by 70% from 2010 compared with the previous year.(China Economic Information Network 2011) Relatively, there are significant increasing amounts of housing.

However, there is a conflicting phenomena happening in the Chinese housing sector. From one side, large proportions of residents are renting a house or live in overcrowded apartments, for instance four square meters of floor space per person. On the other hand, the vacancy rate from newly developed properties has seen rapid growth.

At the end of December 2008, vacancy in Chinese commercial residential buildings reached at total of 164 million square meters. This was an increase of 21.8% from 2007. (China Research and Intelligence 2009)

In the first two photos below we see some examples of overcrowded housing and in the last two photos, the direct opposite of this, vacant housing.

Photograph 1: Overcrowded Housing vs Views of vacant housing at night show numerous empty units





Source: Xinhua News/Google Images

In a commercial society, there is a demand and supply for a commodity. Housing is a unique commodity, which occupies unrenovable land resources. Therefore, there is a social responsibility that is attached to vacant housing that is different from other commodities.

‘2009 Real Estate Blue Paper’, published by the China Social Science Institution, has caused public concern that the area of vacant housing will rapidly increase and the total area will increase by two or three times compared with last few years(Chinese Academy of Social Science 2009). According to the American investment company-GMO report, one fifth of Chinese real estate on average is vacant.(Chancellor Edward 2010) Housing vacancy accounts for the biggest share among the categories of real estate vacancies including commercial/office space.(Ding Chengri & Song Yan 2005)

In the article, *Managing the Turbulence within Chinese Real Estate Market*, when it comes to vacancy rates, it is said that most buyers buy houses for the purpose of speculation rather than occupancy. It is estimated that the vacancy rate in housing among first line cities in China reaches 50 percent. Most senior civil servants and high income buyers have more than two sets of homes, some of whom even have several.(Cai Jiming & Han Jianfang 2011 September)

According to international standards, the reasonable rate of vacancy in housing is between 5% and 10%; 10%-20% is of concern; more than 20% is over-saturation of housing stock.(China Economic Information Network 2011)

Vacancy rates in housing in China are far beyond the warning line by international standards.

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In the book of *Recycling the City: The Use and Reuse of Urban Land*, Jakle and Wilson state that “*Abandoned building in our inner-city neighborhoods continue to erode the local social fabric. They signify the ills of neglect, communicating to people the futility of inner-city living...To invest here is to risk losing money... abandoned buildings are a sign of irreversible deterioration-a process that has attained a critical internal momentum.*”(Greenstein Rosalind & Sungu-Eryilmaz Yesim 2004)

Some sources from the demand perspective state that people do not have enough money to buy houses or that they invest in real estate properties for speculation, which leads to issues with vacancy.

1. Ability from demand perspective

Since the market reform, the living standards in China have improved significantly. However, at the same time, it is an unavoidable fact that within the market reform there is growing inequality in many dimensions of urban life. Income inequality is perhaps the most evident, because income levels played a relatively key role in the quality of life in the developing and transitional economy of China. Today, people have more money and more commodities are allocated to people at market prices. However, as the most populous country in the world, China has greater disparities between rich and poor.

In the Global Urban Observatory Databases of UN-HABITAT, price-to-income ratio is one of the urban indicators that measure the basic affordability of housing. UN-HABITANT regards ratios of 3 to 5 as normal or satisfactory. This indicates an unaffordability among housing units which can lead to higher rates of vacancies among property markets.(Joyce Man Yanyun 2011)

During 2009, the Journal Demographia conducted their annual housing survey which takes a look at affordability among more than 200 markets in Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States.

Table 1: Number of cities per Price to Income Ratio (PIR)

Nation	Affordable (<3.0)	Moderately Unaffordable (3.1-4.0)	Seriously Unaffordable (4.1-5.0)	Severely Unaffordable (>5.1)	Total Cities	Media n PIR
Australia	0	0	3	24	27	6.0
Canada	10	15	5	4	34	3.5
New Zealand	0	0	1	7	8	5.7
U.K	0	0	6	10	16	5.2
U.S	77	59	23	16	175	3.2
China	3	31	47	184	265	6.25
(2010)	(1.1%)	(11.7%)	(17.7%)	(69.4%)	(100%)	

Sources: Demographia, 2009, for all countries except China; the data for China were calculated based on National Bureau of Statistics of China Data sets. (Joyce Man Yanyun 2011)

As table 1 shows, the number of Chinese cities that have the Severely Unaffordable problem increased to 184, 69.4 % among all the 265 cities. Compare to American cities, only 9 % of 175 cities had the rating of Severely Unaffordable, and about 44 % were Affordable. China is an extreme example of housing unaffordability. It has to be kept in mind that this problem is not unique to China, but is also shared by countries such as Australia, New Zealand, and the UK.

Another source from Land Lines of the Lincoln Institute of Land Policy, states that one-third of the cities had less than 5 percent affordable housing, indicating a seriously inadequate supply of affordable housing for low- and middle-income urban households. (Joyce Man Yanyun 2011) The buyers' ability to afford housing has been taken into account as one of the problems of vacant housing issues.

Furthermore, the book-*Emerging Land & Housing Markets in China* was looking at Chinese cases of “social housing projects”, which were subsidized, low cost commercial housing. Surprisingly, the vacancy rate also remains high. In the article, it indicated that the vacancy rate for social housing was 46 percent in Dalian and 60 percent in Guanlin. Of the 600,000 square meters of social housing in Beijing, only 50,000 square meters were sold in 1997(Ding Chengri & Song Yan 2005).Social housing was specifically designed for house ownership for low-and medium-income households. However, the extremely high vacancy rates indicate even medium-income households cannot afford ”low-cost” housing. Therefore, it is almost impossible for most of the potential households to afford housing at a market price. This has led to an increasing mismatch of demand and supply between submarkets: the housing market for high-income households is heavily oversupplied whereas the housing market for low-income households is seriously undersupplied.

In conclusion, if the majority of people in China cannot afford housing, why do developers continue to build new residential housing and why do individual property homeowners keep holding their housings stock, which leads to high vacancy rates? The following analysis focuses on the supply perspective and will provide clear insight.

1.3 Research Objectives

The main objective of the research is to establish the reasons and causes behind the increase of vacant housing in current day China. This case study focuses on Xiamen, a special economic zone city in southern China. From this research, it was possible to analyze and determine the causes of vacant housing in China.

Therefore, the specific objectives are:

- Examine the incentives that motivate developers to create an oversupply of housing units which leads to vacant housing and motivates individual property homeowners to hold properties for reasons other than immediate occupancy.
- Identify the reasons that cause vacant housing.

1.4 Research Questions

Main Question

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- Why is there vacant housing in China?

Specific Question

- What is the definition of vacant housing?
- Do these nine variables motivate developers to create an oversupply of housing units which leads to vacant housing and motivates individual property homeowners to hold properties for reasons other than immediate occupancy?

1.5 Significance of Study

It is significant to notice that there is a lack of research regarding the causes of vacant housing; therefore this study sheds light on this phenomenon. The problem of vacant housing is important when we try to understand the dynamics of the modern Chinese economy and how Chinese society is affected by this market inefficiency in the housing stock, which prevents many lower income people from being home owners.

1.6 Scope and limitations

This research focused on the causes and conditions which have led to a tremendous amount of vacant housing within China in the last few years. This study can provide a significant foundation knowledge base for further investigation regarding ways to solve the problem of vacant housing in China.

This research was conducted in an extensive manner within a limited time period. The field work was carried out in Xiamen, People Republic of China during the month of July, 2011. The research involved in-depth interviews, focus groups with key housing players, government housing officials and an analysis of relevant housing documents was conducted.

The analysis of vacant housing was not fully conducted on a national scale due to time limitations and practical considerations regarding the geographic scale of China. Therefore, the focus was limited to Xiamen. The reason in choosing Xiamen as the research site was because of easy access to data collection and its pioneer position in the real estate industry in China. As an economically developed city, experienced in the evolutionary process of real estate development, Xiamen has more objective and rich resources to conduct this thesis research.

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Chapter 2: Literature Review

2.1 State of the art of the theories/Concepts of study

In the literature review, the concept of vacant housing was defined. The causes of vacant housing were explained from the supply perspective based on the market efficiency definition. In the end, different statements from supply perspectives were presented to explain reasons for vacant housing. This led to a better understanding of why vacant housing exists in China.

2.1.1 Definition of Vacant Housing

The American Census Bureau defines the homeowner vacancy rate as the “proportion of the homeowner inventory that is vacant for sale”.(Magnus Gideon 2011)

Based on this definition, “vacant for sale” can be explained as a housing market that is waiting for sales, which is not necessarily a negative issue. However, according to the problem statement above, this concept from the American Census Bureau does not include the possible external impacts that affect selling.

There is another definition for vacant housing. According to the Chinese National Construction Department, National Development and Reform Committee and National Statistic Bureau, vacant housing would be categorized based on a timeline since 2003. (Zhu Jingjing 2010)

Category one: If a housing unit is vacant within one year, it would be defined as housing waiting for sale.

Category two: If the housing unit is vacant for more than one year and less than three years, it would be defined as unmarketable housing.

Category three: If the housing unit is vacant for more than three years, it would be defined as overstocked housing.

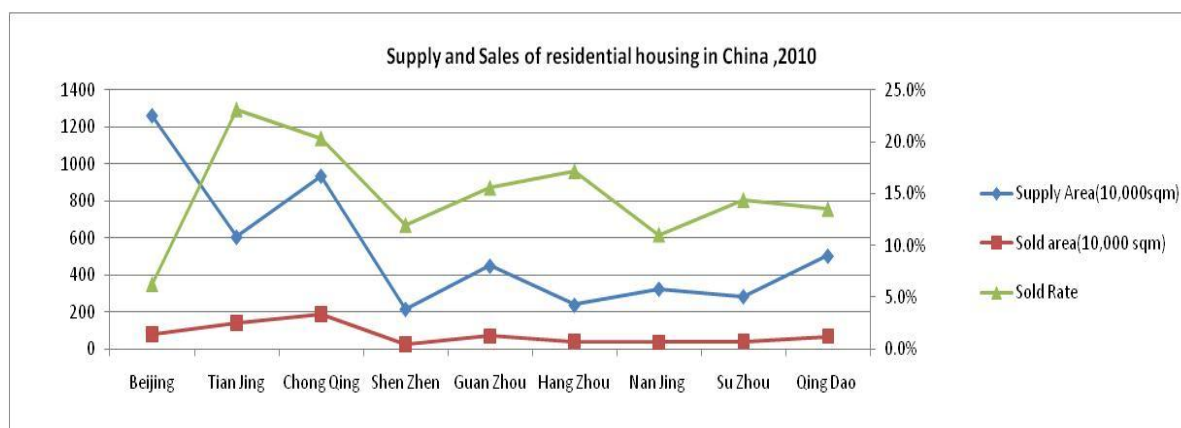
The concept of vacant housing is defined based on the time period above. Category one is simply the same as the definition of the American Census Bureau, which is not matching with the problem statement in my thesis. In addition, there is an unclear distinction between category two and three. Unmarketable housing in category two could be part of overstocked

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housing, because unmarketable housing and overstocked housing both mean that the houses cannot be sold in the market. Furthermore, the related bureaus mentioned above did not state what their criteria were in choosing the three time period. These three timelines were regarded as reference when the data collection was conducted in the research field.

The chart below reflects the activity in housing sales among the eight most active housing markets in China during 2010. The supply areas are much higher than the sold areas and the sold rate was below 25% among eight cities. (Xiamen Land Development Company 2010)

Figure 1: Supply and sales of residential housing in China, 2010



Note: 10,000 sqm units are multiplied by the numbers on the left

Source: (Xiamen Land Development Company 2010)

In summary, in my thesis, based on the data reflected by this chart above, vacant housing was defined as houses that are vacant due to supply areas that are higher than sales areas for a continuous period from developers' perspective which causes market problems. In addition, from an individual property homeowners' perspective; Properties are sold but not occupied.

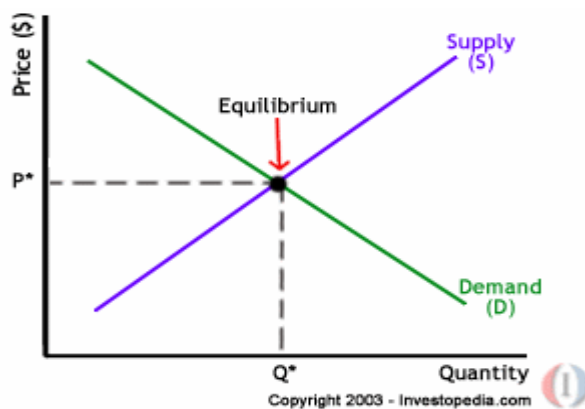
2.1.2 Definition of Market Efficiency

In order to analyze the causes of vacant housing, mismatching of supply and demand are taken into consideration based on the definition of market efficiency.

How do efficient markets work? The most primitive model is the basic model of supply and demand applied in introductory economics. In this model, when supply and demand are equal, the economy is said to be at equilibrium. At this point, the allocation of goods is at its most efficient because the amount of goods being supplied is exactly the same as the amount of

goods being demanded. This is a good economic condition which will satisfy everyone in the market.(Evans Alan W. 2004)

Figure 2: Market Efficiency



Source: Evans A.W., 2004, *Economics, Real Estate & the supply of land*, Blackwell, England

However, based on our problem statement, there is a mismatch between housing supplies and demand issues regarding housing in China. As mentioned in the problem statement, vacancy rates in housing in China are far beyond the warning line by international standards. This would indicate that there is a possibility of a market correction in the near future.

2.1.4 Literature Review from Supply Perspective

The related argument from the supply perspective, states that developers and individual households have several incentives which contribute to the causes of vacant housing. There are nine incentives for vacant housing highlighted based on reviewing different housing bubbles throughout the world.

1. Low Interest Rates

Low interest rates are an important factor in stimulating the purchase of properties for investment purposes.

(Deokho Cho & Seungryul Ma 2006) Housing values in the Korean housing market have had significant growth from the beginning of 2000. Many experts have stated that the major cause for this rapid increase was low interest rates during that period.

A further example can be observed. Stone and Ziemba argued that the unstable interest rates in Japan were the primary reason of the change in property values. This included land values

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between 1985 and 1989, and the remarkable decrease of this sector between 1990 and 1992.(Stone and Ziemba 1993)

(DiPasquale Denise and Wheaton William C. 1992)The authors stated that in purchasing a home, the household's level of income determines its affordability. However, in the capital market, if the interest rates are low and inflation is high, families are willing to pay these prices even though their annual ability to pay is fixed.

The interest rate dropped to the lowest level in February 2002. Concurrently, with the stable and strong GDP growth, the Chinese Government established a positive lending market to support the development of the residential property industry. Since 1999, Chinese interest rates have bottomed out at historically low levels. At the same time, numerous investors switched their investments to the real estate market due to the sluggishness of the stock market since June 2002, which drove up prices of residential housing in China.(Joyce Yanyun Man 2011)

Alan W. Evans asks” what happens if interest rates fall?”. Buyers now feel able to buy more houses since they can afford to service a larger debt;(Evans Alan W. 2004)

It can be assumed that one of the factors causing housing suppliers in China to hold housing is the expectation that interest rates will fall, this will cause growth in profits from the demand market.

2. Massive Liquidity

Some resources (Xie Andy 2010) describe that local governments and developers are maintaining massive liquidity that they earned through land and property sales in the past few years with the support of the central government political strategy of “anything goes” during the economic stimulus period. They believe that the central government will protect the most productive revenue generators from the real estate sectors before they run out of liquidity. So developers are waiting and not cutting prices easily. This has had the effect of keeping high prices stable and protecting the developer's future returns on their investments even at the cost of keeping the housing vacant rather than selling-out at a low price.

3. Artificially low land prices

Looking back to the Japanese real estate crisis in the 1980's, individual investors were given incentives by Japanese tax law to hold real estate assets since inherited land is valued at far below market price, while other assets are valued at full market price. In addition, compared to the U.S., average property tax was very low at .39% and interest expenses deductible, making investment in land with borrowed money attractive to investors. (Stone and Ziemba 1993)

China has a very specific tenure system, which land ownership is retained by the state, local governments are financing the provision of public goods and urban infrastructure by leasing land. However, China has not yet come to the process of fully capture land value with additional instrument of adopting real property taxation under a leasing system. In the article, the author stated that Chinese municipalities lease land at below market rates or are willing to grant leases at below market rates in order to stimulate economic development, which contributes VAT and other tax revenue in turn. (Anderson John E. 2011)

The article stated that there was a striking phenomenon that developers abandoned partially completed complexes. It gave an example of Beijing, China that even more and more rich expatriates and Chinese new business elite existed, many villas are empty and unattended. Some analysts are concern about a supply "bubble" in the high-end housing market. The article concludes that the result of abandoned housing is driven by an abundance of cheap land. Developers working in an environment where capital is easy to obtain makes the issue of vacancy of low concern. (The Economist 2004)

It further points out that the Chinese government often plays the role of real estate developers and economic development agencies. The combination of these roles gives the local government many opportunities to implicitly set their land leasing prices.

However, in the book of China's housing reform and outcomes edited by Joyce Yanyun Man, the author stated opposite facts that the urban units are sold on expensive land. Land acquisition costs are high (Joyce Man Yanyun 2011).

- *At current land prices, if land accounted for 30percent of the selling price of apartments and if developers built units in high-rise apartments with a floor-area ratio of 2.0, a 90-square-meter apartment would cost 960,000yuan (US\$ 133,000), or 77annual median household incomes.*

This indicates that developers or individual investors have to ask high prices which cause unaffordability issues in order to cover their land acquisition costs. However, in my opinion, Joyce Man Yanyun has perhaps exaggerated the final calculations involving household income and its relationship to FAR. In reality, FAR and household incomes are not that low.

4. Easy Credit

Referring to the Spanish real estate crisis of 2008, it had the same issues in regards to easy credit.

Spanish banks were willing to give credit to project developers, and mortgages to individuals with easy access. This led to people investing in real estate. As a consequence, its prices started increasing, which led to more investors, and finally resulting in even higher prices. As a result, it pushed developers to build even more real estate. These series of events resulted in more than 700.000 new houses being built per year from 2004 until 2006(Krijger Rutger 2011). However, demand gradually began to slow down, developers still kept on building new real estate. Because banks were willing to give loans, borrowing in the construction sector reached eight times of the sector's value added output. It came to a situation where 20% of the Spanish GDP went into construction, of which Spain using 66% more cement than Germany, considering that this is a country that has an economy three times larger than Spain. The notable issue come out that a quarter of all the housing being built in the EU was in Spain. Eventually, easy credit led to an oversupply of housing.

In reviewing the Irish economic crisis, which was mainly caused by its domestic real estate crisis, issues of easy credit availability were also involved. During the eight spans between 2000 and 2008, Irish banks increased their loans to developers by 40%; for individual mortgage loans, it was at a rate of 75% growth.(Liu Xiaozhong 2010) Adequate liquidity stimulated the rise of housing prices. This encouraged more banks to give more loans to developers and individuals. In Ireland, due to the significant increase of housing prices plus the lax fiscal policies, developers and individuals had easy access to credit. This created a situation that a great number of people in Ireland invested their money in real estate.

In the Japanese case, the economic environment in the 1980s was arguably derived from the rise of moral hazard problems among bank and firm managers. Evidence showed that few

guidelines were provided to bank managers by the shareholding and regulatory institutions during this period.

Japanese banks directly increased their exposure to land through increased lending to the real estate sector and indirectly through loans for other industry but collateralized by land. Banks' and other financial institutions' exposure to land assets increased. Direct lending to the real estate sector increased. From 1982 to 1989, real estate loans (as a share of total loans) increased from nearly 5.5% to more than 12% for city banks, and from 6% to 11% for regional banks. With regards to Japanese trust banks, which had always lent more heavily, these cut back on real estate lending beginning in 1987 after warnings from the Ministry of Finance. (Dinc Serdar & McGuire Patrick M 2004)

The American housing crisis of 2008 had the same issues of easy credit as the Irish example. Many problems were caused by corporations such as Fannie Mae and Freddie Mac which are Government-sponsored and can acquire capital at a subsidized rate backed by the Federal government. (Holcombe Randall G. & Powell Benjamin 2009) This caused a situation where lenders could quickly and easily sell the loans they made. These government backed agencies were key in helping to stimulate the flow of credit to high risk borrowers. This had the effect of lowering the credit standards of many lending institutions.

In regards to China, as mentioned in the *The Economists*, the number of partially completed complexes that developers have left simply vacant is enormous. It is what results when an industry is driven by an abundance of easy credit. The People's Bank of China (PBC) issued "2009 Financial Institution Loans Allocation Statistic Report". The report shows that loans for the development of real estate reached 576.4 billion Yuan, this increased by 30.7% compared with the beginning of the year and 20.4% higher than the previous year. (People's Bank of China 2009) The most important set of housing reform policies was introduced by the Central Government in July 1998. One of the main objectives was to set up a new housing finance system to help developers and individuals with loans and mortgages.

5. Book Value

Cheng Ding explains that even when the vacancy rate was high, developers still kept on producing. The reason is that developers wanted to keep the book value of their assets in the hope of the growth of property sales in the future. Therefore, they declined price-cutting to facilitate selling. (Ding Chengri & Song Yan 2005)

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Nowadays, shares of leading real estate companies in Spain sell at an average of 14.57% above the value of the assets they control. (Wharton Universia 2011)

These are examples of two cases that show the possibilities behind high book value that results in vacant housing.

6. Production Target

Another explanation for the potential cause of vacant housing is that sometimes the primary criterion for staff performance appraisals more focus on the fulfillment of production targets rather than profit levels.(Ding Chengri & Song Yan 2005)

A Similar example would be the Irish case. Between 1999 to 2007, Irish GDP increased by 60%, per capita by 37%, which ranked No.2 among OECD, before America and only behind Japan. Ireland became one of the richest countries in Europe. Its rapid economic growth was due to its significant development in real estate. In 1996, the real estate industry accounted for 5% of its GDP; 2006, 10%. From 1995 to 2000, the investment in housing was 3.3 billion euro, however, between 2000 to 2006, it reached 10.5 billion, which increased by 218%.By means of VAT and stamp tax, the Irish government gained huge profits from the booming of the real estate industries.(Li Dongxu 2010)

The housing market boom in China in the past 20 years has been driven by land supply from local government. The Chinese Government heavily focuses on developing the real estate market and construction sectors for its economic growth. In the late 1990s, local governments began to accumulate revenues raised from land leasing, in other words, known as land transfer fees, to finance public goods and services as mandated by the central government in order to achieve their production target.(Joyce Man Yanyun 2011)

It has been reported in recent press stories that the implementation of the Chinese Government's economic stimulus package indicates that many local governments are reluctant to move into low-income housing projects. This is because it would have to be funded at the expense of higher-income projects, which would negatively affect their production targets.

In the documentary film "China Ghost City", there is a statement that local governments' performance is partially linked to GDP figures. The higher GDP number, the more recognition will be rewarded. (Katie 2011)

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7. Psychological factors: Expectation/Uncertainty/Low risk

Real estate is purchased as an investment with the expectations of traditionally healthy appreciation of property, which leads to profits when sold.

One view from Keynesian economists and proponents of Behavioral Finance states that the housing bubbles and bubbles in general are caused by psychological factors. (Holcombe Randall G. & Powell Benjamin 2009) Due to spikes in development, people became confident and tolerant of risk taking. Economic decisions are no more based on historical records and rules but on bravery. Rapid rising profits and asset prices lead to “speculative” behavior by developers and individual investors.

Representing the Behavioral Finance camp is Professor Robert Shiller of Yale University, who is the author of *Irrational Exuberance*, in his second edition touches upon the issue of housing. He states that “ultimate causes of housing bubbles are mostly psychological” Shiller does not deny the existence of real factors; he simply lessens the impact of real factors in order to emphasize psychological factors. With the case of the housing bubble, one of the factors he found is that peoples’ feelings can be affected by external risk and unstable economic chaos in the world and they transfer their expectation and confidence into quality and safe tangible products -your own house. (Holcombe Randall G. & Powell Benjamin 2009)

In addition to the psychological factor of expectation, uncertainty comes into play as well. Holcombe & Powell stated that development of site is similar to investing in stock options. The cost of building housing is so high and irreversible, if developers act too fast, this may result in a development that is less profitable than it might have been. Therefore, even though there is a cost of delaying the sale of housing, they may still hold the properties until the uncertainty has been resolved. (Greenstein Rosalind & Sungu-Eryilmaz Yesim 2004) The uncertainty can include the global, national or regional economies, but when it has been resolved, the developers will feel sure of the most profitable use, then the housing market will be revived and the option will operate.

People will prefer to invest in cheaper and less risky alternatives whereas when stocks tend to be unattractive, investors invest more in real estate (Fernández-Kranz Daniel & Hon Mark T. 2006). A very good example in China is the collapse of the Chinese stock market on May 30th,

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2007. Most of the stakeholders transferred their capital into the real estate market due to less risk in real estate than the Chinese stock market. It is the same case as the American collapse of the stock market in 2000, after which real estate in America exaggeratedly sky-rocked.(Wang Niumo 2008)

8. Transaction cost

According to the International Real Estate Review (Cruz Prince Christian R. 2008): the sale and purchase of property involves several costs: registration costs, real estate agent fees, legal fees, and sales and transfer taxes. High transaction costs are correlated with lower transaction volumes and less transparent deals.

In most countries, when transaction costs are high, most individuals delay their decision to purchase properties. Co-habitation and extended families are common phenomenon, resulting in congestion and overcrowding. In Europe, countries with higher transaction costs have lower market turnover and bigger household sizes (Cruz Prince Christian R. 2008)

Table 2: Roundtrip Transaction Costs - Working example

(All values are presented as percent of property value) Country	Registration Costs	Legal Fees	Estate Agent's Fees	Sales & Transfer Taxes	Total Costs
Hong Kong	1.42	0.50	2.00	0.00	3.92
Malaysia	1.56	0.94	2.75	0.00	5.25
Singapore	1.82	0.45	3.00	0.00	5.27
Japan	0.04	0.10	3.30	2.16	5.59
Taiwan	0.30	0.10	4.00	6.00	10.41
China	0.31	0.30	2.00	8.16	10.77
Thailand	2.50	1.77	3.00	4.30	11.57
Indonesia	0.03	0.50	5.00	7.59	13.11
South Korea	1.29	0.31	1.00	12.02	14.62
Philippines	2.14	2.80	5.00	6.50	16.44
Source: INTERNATINAL REAL ESTATE REVIEW, 2008 Vol. 11 No. 1: pp. 128 - 150					

Table 2 confirms the general observations. Using the assumptions above, roundtrip transaction costs in property exchanges are below six percent in Hong Kong, Japan, Malaysia and Singapore. On the other hand, total costs in Taiwan, Thailand, China, Indonesia, Philippines, and South Korea are above 10%. For these countries, certain part of the costs goes to sales and transfer taxes and real estate agents fees.

Countries with higher transaction costs generally have less housing affordability conditions such as higher house-price-to-income ratios. Governments of high transaction cost countries such as South Korea, Indonesia and the Philippines can reduce the adverse impact of unaffordable housing by cutting taxes imposed on property transactions.

In the paper *The Real Estate User Charge and Its Impact on Housing Development in China* (Hui Deng 2006) it indicates that in real estate, lower transaction costs can drive market turnover and increase the responsiveness of housing markets to macroeconomic stimulation. Housing prices are highly impacted with the growing demand in countries with lower transaction costs.

In conclusion, higher transaction costs could prevent transactions within the housing market. Would this be one of the reasons causing vacant housing in China?

9. Disregard market of demand

The last but not the least from a supply perspective, some developers disregarded the lack of market demand for properties.

In Spain's real estate crisis, the same issues can be observed. More than a million new homes crowded Spain's real estate market, as builders disregarded declining demand. This oversupply will require years to be assimilated by the market. (Krijger Rutger 2011)

As discussed above, political and economic changes in the real estate industry now drive private investors and plenty of Chinese institutions to speculate in city-center projects, including high-priced apartment buildings. However, most residents already have moved to new developments on the fringes of cities due to the low price of housing in these areas. This results in the non-occupancy of many new buildings in the city center. It suggests that demand may have been overestimated. If wealthy buyers slow their purchases in areas that are affected by such factors as pollution and traffic jams in near city center areas, eventually these high-end housing will become vacant due to disregarded market demand. (Joyce ManYanyun 2011)

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Developers disregarded actual market demands in many cases due to an eagerness to complete high prestige projects.

If interest rates rise, buyers will recognize that they cannot afford the prices that are higher than the ones planned before. They will reduce their reservation prices and search longer to find an affordable property. Sellers on the other hand, do not proactively respond by reducing their original high prices. As a result, the number of houses 'on the market' will be increased (Evans Alan W. 2004). Real estate agents will find that they have a lot more properties for sale. Market demand has been disregarded. Eventually, vacant housing will come into existence.

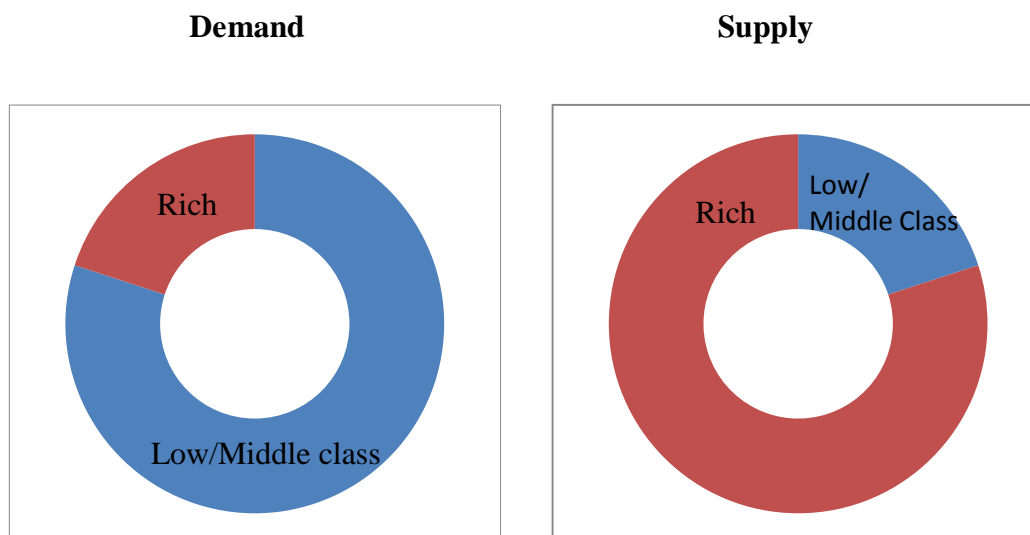
Conclusion

In conclusion, there are various explanations for causes leading to housing vacancies.

If the majority of people in China cannot afford housing, why do developers continue to build new residential housing and individual property homeowners keep holding their housings, which lead high vacancy rates?

The following table indicates the mismatching of supply and demand among different groups of people in China.

Figure 3: Mismatch of stock of supply and demand affordability



Source: Created by Author

Vacant housing from demand perspective is due to factors such as unaffordability. In this thesis, the cause of vacant housing from a supply perspective was focused on due to its

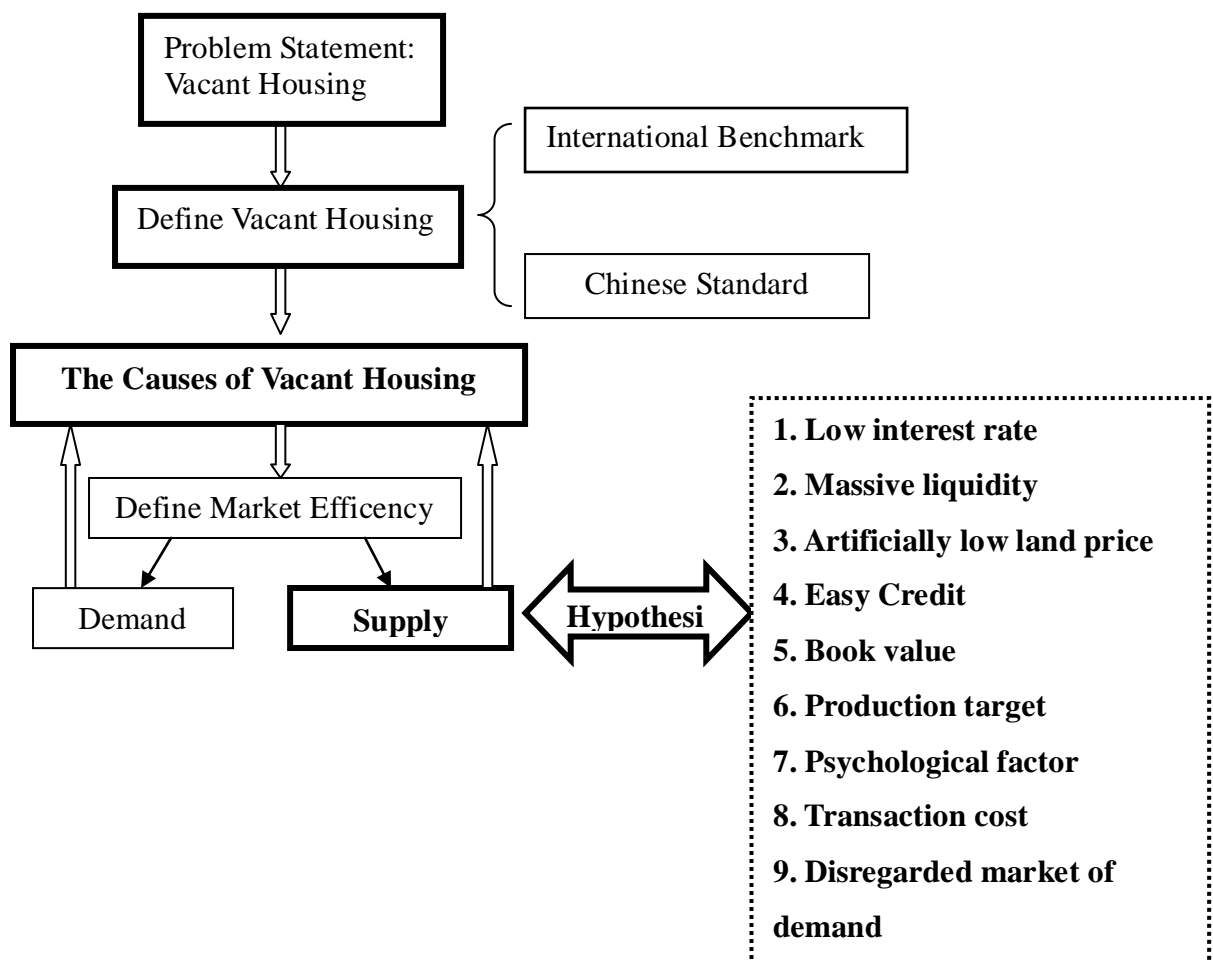
complex variables. Nine hypothesis came into play. I mainly investigated these nine viewpoints from the supply perspectives to confirm and identified the causes behind housing vacancies.

Based on the literature review, several landmark case studies of the causes of vacant housing throughout the world have been cited, such as examples of vacant housing in Spain, Ireland, South Korea, American and also China in general.

My research is combining all possible hypothesis exploring the causes for vacant housing in Xiamen, China from the supply perspective. Currently, there are no comprehensive studies in this field in China. In order to understand the supply dynamics of housing stock in China, it is necessary to integrate all variables in one case study that cause vacant housing, and indentify them in an academic research way.

2.2 Conceptual framework

Figure 4: Conceptual Framework



2.2.1 Nine Hypothesis

The matrix was developed to reflect a single variable for each case involving issues for each of the nine hypothesis. This allows a clearer understanding of the structure behind the literature review.

Refer to Annex.

Chapter 3 Research Methodology

After conducting the literature review into the causes of vacant housing in various international settings, it was decided to adopt the format of nine hypothesis to help explain all the possible reasons for vacant housing to exist in Xiamen. These nine hypothesis were used as a guide to help direct the search for the reasons behind vacant housing.

The research type was explanatory. A case study research strategy with Xiamen Municipality was used for analysis. The data I used in my study can be divided into primary and secondary data.

Primary data includes mainly qualitative data; it was mostly collected through in-depth, semi structure interviews and focus group interviews. The Likert Scale is used to assess the interviewees' answers for open questions which are related to each variable. Secondary data, which is mainly about quantitative data, was obtained via newspapers, journals, research organizations and the database from the National Library System.

3.1 Research Questions

Main Question

Why is there vacant housing in China?

Specific Question

- What is the definition of vacant housing?
- Do these nine variables motivate developers to create an oversupply of housing units which leads to vacant housing and motivates individual property homeowners to hold properties for reasons other than immediate occupancy?

3.2 Operationalization: Variables, Indicators

In order to test the nine hypothesis, nine variables were created with nine indicators to serve as an assessment tool. The methods used by the assessment tool are reflected in the following table.

Table 3: Operationalization : Variables and Indicators

Hypotheses Questions	Variables	Indicators	Methods	Sources of Data
1.Low interest rate causing vacant housing.	1. Interest rate	Growth rate of housing investment VS interest rate trends	1. Desk research 2.Semi-depth Interview	People Bank of China(PBC) and CREIS
2. Massive liquidity caused vacant housing.	2.Liquidity	Primary Interest Rate trend from People's Bank of China for all banks in China/M2 increase Rate/ New Add Loan	1. Desk research 2.Semi-depth Interview	2010 Chinese Real Estate Market Reveiw and 2011 Forecast
3. Artificially low land price caused vacant housing.	3. Land price	% of cost land compared with price of housing	1. Desk research 2.In-depth Interview	Xiamen Xiang Yu Group(State-Owned Corpoartion.)
4.Easy credit caused vacant housing.	4. Credit	Credit trends	1.Desk Research 2.Semi-depth Interview	2010 Chinese Real Estate Market Reveiw and 2011 Forecast/PBC
5.High book value caused vacant housing	5. Book Value	Book value trend(Lower or higher against market value)	1.Semi-depth Interview	N/A
6. Production target caused vacant housing.	6.Production Target	Local Government revenue from land leasing	1.DeskReserch 2.Semi-depth Interview	Xiamen Reform and development Bureau
7. Psychological factors caused vacant housing.	7.Psychological Factor	Expectation for future property investment	1.Desk Reserch 2.Semi-depth Interview 3.Focus Group	2010 Real Estate Strategic Report
		Uncertainty invovled in stock market/other investment alternatives		
8.Transaction cost caused vacant housing.	8.Transaction Cost	% of transaction cost of total cost of housing	1.Desk Research 2.Semi-depth Interview	N/A
9. Disregard of market demand caused vacant housing.	9.Disregard of Market Demand	Urbanization Rate	1. Desk research 2.Semi-depth Interview 3.Focus Group	CRIC/ National Statistic Bureau
		National Marriage Number VS Number of Apartment		

3.2 Sample Size and Selection

The research sample was a purposive sample which was taken from three major groups in Xiamen; they include large developers, individual property homeowners and government officers.

There were around 200 large developers in Xiamen. They were typified into three groups based on their registered capital. (Ministry of Housing and Urban-Rural Development of the People Republic of China 2006)

Category one: No less than RMB50 million

Category two: No less than RMB 20 million

Category three: No less than RMB8 million

Originally, it was planned to take at least three representative samples out of each group, which would yield a nine sample pool of developers.

The original plan called for a random sample of individual property homeowners to be selected in random from the central urban district of Xiamen. Buildings containing more than 100 units that were at least 3 years old would be selected as a sample for the study of housing vacancy. A 10% representative sample would be taken from the overall available samples of study.

Four officers from the government institutions which were related to the housing sectors were interviewed. They were from the Xiamen Development and Reform Department, Xiamen Municipal Land Resources & Housing Administrative Bureau, Xiamen Land Development Corporation (state-owned), Xiamen Planning and Design Institution.

The original plan was to use the samples as stated above, however due to practical considerations I was unable to apply this method to the individual homeowners groups. Individual property homeowners were unwilling to share information related to their private financial details. A strategy to find the appropriate interviewees was changed to accommodate a more willing sample of individual property homeowners. The following table shows the interview target groups.

Table 4: Samples Selected during fieldwork

	Type of Developers	Sample
Large Developers	Category One: (No less than RMB 50 million)	10 out of 25
	Category Two: (No less than RMB 20 million)	7 out of 23
	Category Three: (No less than RMB 8 million)	10 out 150
Governmental Officials	Xiamen Planning Institution	1
	Xiamen Land Development Company	1
	Xiamen Fiscal Bureau	1
	Xiamen Development and Reform Department	1
Individual Property home owners	Have at least more than one vacant house	20

3.3 Validity and Reliability

Validity: It was critical to validate information collected through desk research, in-depth interviews, semi-structured interviews and focus group. The data was collected in Xiamen during the month of July 2011. Various groups were interviewed; these included large developers, government officials, and individual property homeowners. The first two of these groups were interviewed using an in depth process. The third group was interviewed using a focus groups process. Desk research was conducted in order to validity of all of the groups answers. However the group with the individual homeowners is not represented well enough

due to issues with the small size of the sample. This was caused by the unwillingness of most of the individual property homeowners to participate in the study.

Reliability: To ensure the research was reliable, the data collected was reviewed repeatedly through notes. All the interview questions were pre-tested before the fieldwork began on site , this was done in order to ensure that only relevant questions were asked. The survey was translated to Chinese (a major language spoken in the community) and finally collected. During the interview process, some sources were not totally forthcoming in their data sharing. This was due to the unique nature of the Chinese Government organizations and their perceived need for confidentiality of information. This need also applied to large groups interviewed. However, all efforts were made to maintain a high level of reliability.

3.4 Data Collection Method

The research type was explanatory. A case study research strategy with Xiamen Municipality was used for analysis.

Photograph 2: Location of Xiamen



Source: Chinahighlights.com

This research sought to establish causal relationships to explore the causes of vacant housing in China. Xiamen is a southern coastal city in China. It has a total population of 2.5 million and covers an area of 1,565 square kilometers. The reason Xiamen was chosen as the research site was because of the easy access to data collection and its pioneer position in the real estate industry in China. As an economically developed city, experienced in the evolutionary process of real estate development, Xiamen has more objective and rich resources to conduct this thesis research. During the research period which took one month , I had accessibility to

members of various Xiamen Municipal departments. In addition, I was able to use the resources of Xiamen University and local archives both public and private.

3.5 Data Analysis Methods

The data I used in my study can be divided into primary and secondary data.

Primary data includes mainly qualitative data; it was mostly collected through in-depth, semi structure interviews and focus group interviews.

The interviews focused on the following issues:

1. Incentives motivate developers to create an oversupply of housing units which leads to vacant housing and motivates individual property homeowners to hold properties for reasons other than immediate occupancy.

Secondary data, which is mainly about quantitative data, was obtained via newspapers, journals, research organizations and the database from national library system.

My interview targets from the supply perspectives were as follows:

- Supply: Formal developers, individual property homeowners
- Public Sector: Xiamen Development and Reform Department, Xiamen Land Resources and Housing Bureau, Xiamen Land Development Corporation (state-owned), Xiamen Planning and Design Institution.

Chapter 4 Research Results and Data Analysis

Limitation and challenges in the fieldwork

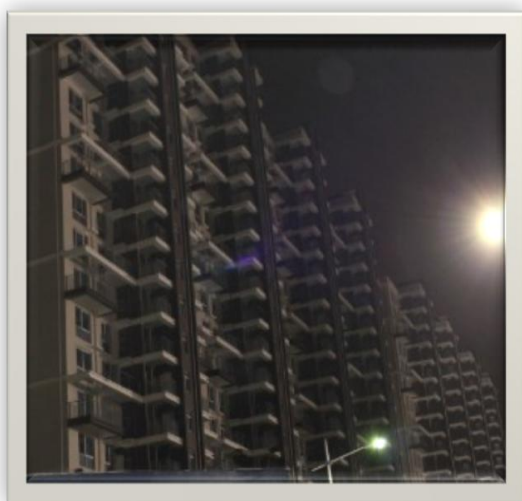
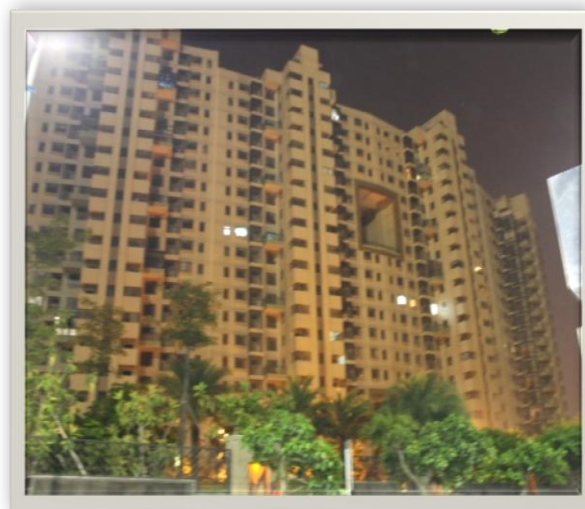
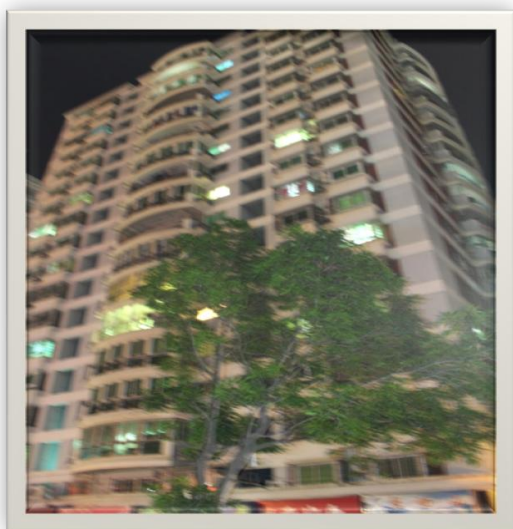
During the process of the field work, many challenges and limitations were encountered and dealt with in ways which yielded useful data. Previously it was planned to select individual property homeowners who have at least one vacant house, from a random sample among 100 units that were at least 3 years old. This proved to be unfeasible due to the fact that these individual homeowners were unwilling to share information related to their private financial details. The strategy to find the appropriate interviewees was changed to accommodate a more willing sample of individual property owners. These were found from among a selection of private contacts and references given to me by people that were known to me. The individual property homeowners sample was not representative enough due to the fact that the sample size was not large enough. This was a result of time and feasibility limitations.

Another limitation that was encountered was when requesting financial data from developers, they were not willing or were hesitant to share what they considered proprietary financial information. Many times their answers were either superficial or incomplete especially when dealing with hypothesis five which deals with the issue of high book value.

Photos from the fieldwork

Visual references were developed which clearly show the physical manifestation of vacant housing in many of Xiamen's larger developments. These photos below, of housing in Xiamen taken early in the evening, are vivid examples of what vacant housing looks like at ground level. As indicated by the large number of dark windows, much vacant housing exists in Xiamen. These buildings are located in both older and newly developed areas.

Photograph 3: Photos from field work



Sources: Taken in the early evening between 7:00-10:00 pm , Fieldwork in Xiamen, China

Table 5: Five levels of perception regarding vacant housing from different categories of interviewees

In my thesis, the Likert Scale is used to assess the interviewees' answers for open questions which are related to each variable. The following table shows five levels of perception regarding vacant housing from different categories of interviewees.

Five levels of perception on Vacant Housing from different categories of interviewees				
Totally disagree	Partially Disagree	Neutral	Partially agree	Totally Agree
1	2	3	4	5

The following is an analysis of the nine hypothesis with the result by means of the Likert Scale.

4.1 Hypothesis One: Low interest rates

Table 6: Low interest rates cause vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million) Valid	Totally Disagree	7	70.0	70.0
	Partially Disagree	2	20.0	90.0
	Neutral	1	10.0	100.0
	Total	10	100.0	100.0
Middle-Size developers(20million-50 million) Valid	Totally Disagree	5	71.4	71.4
	Partially Disagree	1	14.3	85.7
	Neutral	1	14.3	100.0
	Total	7	100.0	100.0
Small developers(<20million) Valid	Totally Disagree	9	90.0	90.0
	Partially Disagree	1	10.0	100.0
	Total	10	100.0	100.0
Government Officers Valid	Totally Disagree	3	75.0	75.0
	Neutral	1	25.0	100.0
	Total	4	100.0	100.0
Individual Investors Valid	Totally Disagree	5	25.0	25.0
	Partially Disagree	8	40.0	65.0
	Neutral	7	35.0	100.0
	Total	20	100.0	100.0

During the interview process, it was indicated that the majority of investors at all levels were in agreement that there are no low interest rates in housing lending as compared to 2008 when rates were at a historical low. The reason for this attitude among large developers interviewed was that during 2008, the government was much more willing to allow cash to enter into the economy. Due to the availability of easy loans from government banks, developers felt confident in starting new housing projects and they pointed out that many of their projects were started at that time. Since that time, however, many large developers mentioned the fact that there has been a slow steady increase in the interest rate. Take for example the current year, there has been three rate increases in less than one year in 2011. (People's Bank of China 2009)

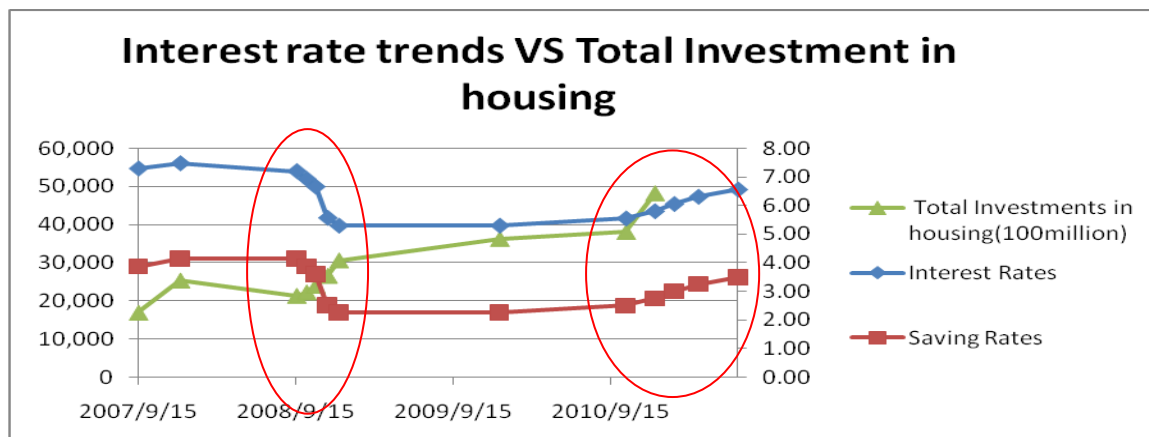
Based on the feedback from developers at all levels, it was discovered that it takes 1.5-2 years to develop new construction projects from the initial land purchase to the final sale of completed housing inventory for developers of category one, 2-3 years for developers of category two and three.

All this had led to the current situation of 2011, where there is a large amount of vacant housing stock.

Since 1998, a significant drop in housing loan interest rates has stimulated housing throughout China. (People's Bank of China 2009) This was done by the central government in an effort to change the housing market from a centralized plan to a more market-oriented mechanism. In recent years, vacant housing has come into focus among government groups responsible for economic development.

The following figures indicate that the total investments in housing were increasing along with the drop in the interest rates during the second half of 2008. Economic stimulus measures were enacted by the Chinese Government as a result of the world financial crisis. However, in order to deal with the macroeconomic environment, the Chinese Government increased interest rates three times during the first half of 2011.

Figure 5 Interest rates trends vs total investment in housing



Source: (The People's Bank of China 2011) & (Liu Baoquan 2011) - National level

Among government officers interviewed, the majority of them totally disagreed that interest rates are low. When it comes to governments' perception of interest rates, an increase of three times of the rate within a six-month period during 2011 has had a strong impact on government officers. They consider interest rates are high; however, during the period of 2008, there were low interest rates that led to current problems of vacant housing.

When dealing with individual homeowners, their feedback indicates somewhat of a concern among this sector regarding the affects of interest rates and vacant housing.

25% of those interviewed in the individual property owner group totally disagreed that low interest rates are responsible for vacant housing. The reasons are many, but include such things as paying a high proportion of their salary for their housing loans and a feeling of being at the mercy of frequent increases in mortgage interest rate such as the 2011 triple rate increase. This group has faced economic hardships in order to afford housing.

There is partial disagreement among individual property homeowners because a rise in home loan interest rates does not play such a critical factor in their decision to maintain vacant housing. This is due to the fact that this housing is kept for future use of family members and also used as a hedge against inflation.

The neutral opinions among individual property homeowners is not affected by fluctuations in home loan interest rates. This is due to a variety of reasons including housing allocation from government compensation due to land expropriation, use of cash reserves to pay for initial

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purchase of housing, loans from family members and sufficient lump sum payments from extended family members.

In conclusion, for large developers, interest rates are highly correlated to vacant housing. The lower the interest rate, the more housing investments they will put into the market, which creates vacant housing. For the government sectors, low interest rates are part of the reason leading to vacant housing. For individual homeowners, their perception regarding the interest rates is based on their method of payment for housing, even though interest rates are high or low, this group will still maintain their housing holdings. When all this is observed through the lens of vacant housing, we can see the impact that these loans have had on creating this phenomenon.

4.2 Hypothesis Two: Massive Liquidity

Table 7: Massive Liquidity causes vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million) Valid	Neutral	1	10.0	10.0
	Partially Agree	8	80.0	90.0
	Totally Agree	1	10.0	100.0
	Total	10	100.0	100.0
Middle-Size developers(20million-50 million) Valid	Partially Disagree	1	14.3	14.3
	Neutral	2	28.6	42.9
	Partially Agree	4	57.1	100.0
	Total	7	100.0	100.0
Small developers(<20million) Valid	Totally Disagree	9	90.0	90.0
	Partially Disagree	1	10.0	100.0
	Total	10	100.0	100.0
Government Officers Valid	Partially Agree	2	50.0	50.0
	Totally Agree	2	50.0	100.0
	Total	4	100.0	100.0
Individual Investors Valid	Partially Disagree	6	30.0	30.0
	Neutral	7	35.0	65.0
	Partially Agree	7	35.0	100.0
	Total	20	100.0	100.0

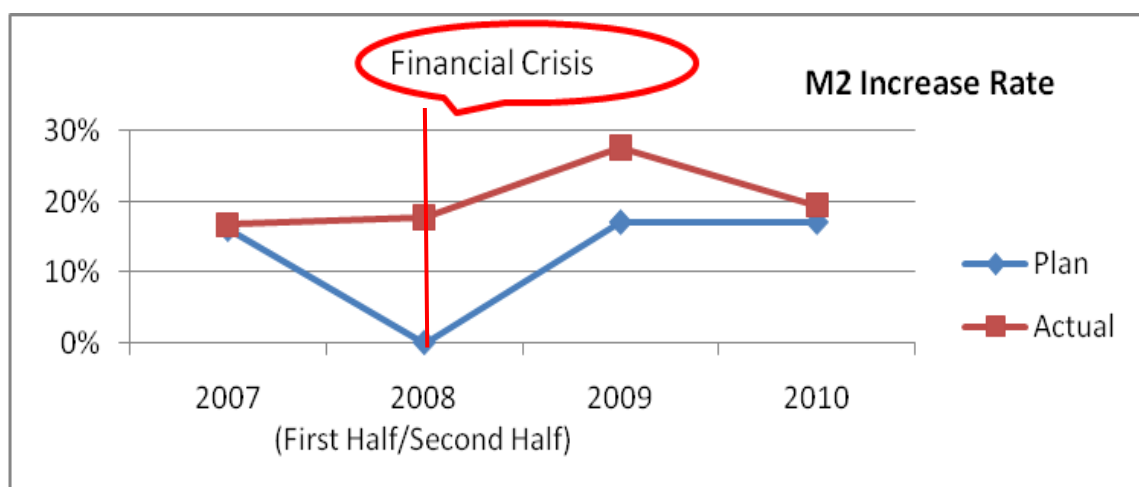
Most of the feedback from large developers partially agreed that there are large amounts of liquidity in the market, which creates vacant housing. They pointed out that in 2008 the Chinese Government issued large quantities of Chinese currency in order to stimulate the economic markets damaged by the global financial crisis. Most of this massive liquidity is flowing into the real estate industry due to investors' limitations of investment channels. Most new housing built prior to 2010 is affected by the new policies of "Limitation Housing Purchasing" (People's Bank of China & China's Bank Regulatory Commission, 2010), which states that one buyer from the city of residency, cannot buy more than two houses. In addition, people from other cities should submit one year's worth of social welfare fees before they buy a house in the city. This has had a severe impact on recent housing sales, which has resulted in a large number of vacant housing.

57.1% of Category two agrees with the category one explanation. The reminder stated that even though there are massive liquidity currency issues in the market, most of them are controlled by stated-owned or category one developers. They don't have massive liquidity to impact the oversupply of houses.

For category three developers, they don't have massive liquidity compared with larger or medium sized developers. Their liquidity is limited to funds from pre-sale or private finance sources. Therefore, they should sell out the houses as soon as possible in order to return their investment. Vacant housing is not an issue with this group in relationship to massive liquidity.

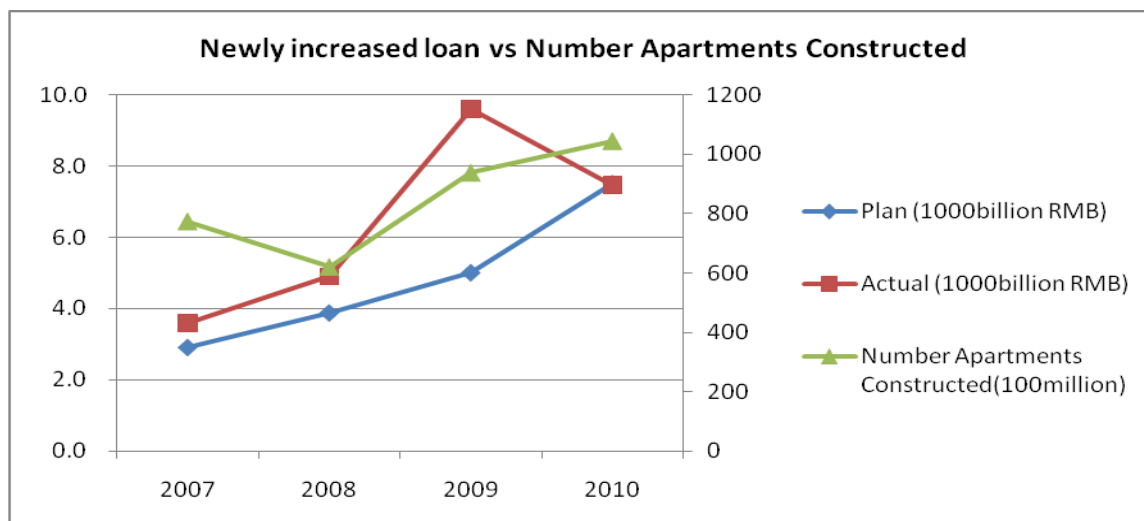
The following charts reflect that currency issues had a close relationship to vacant housing.

Figure 6: M2 (Money circulation) Increase Rate



Source: (China Index Academy 2010)

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Figure 7: Newly increased Loan

Note: Left axis is the measurement for "Plan" and "Actual" lines

Right axis is the measure for "Number of Apartments Constructed"

Source: (China Index Academy 2010)

“M2 is a measure of the money supply./Economics the amount of money in circulation in notes and coin plus non-interest-bearing bank deposits, building-society deposits, and National Savings accounts “(The free dictionary 2011). During the period of 2008, the Chinese Government actually planned to control the flow of currency into the economy. However, due to the impact of the world financial crises that occurred in the second half of that year, the M2 money supply was increased by 17.8% by the Chinese Government in order to stimulate the Chinese economy. In 2009, the actual M2 increase rate had surpassed by 10% compared with its plan. (China Index Academy, 2010) In 2010, the Chinese Government still adopted a relaxed monetary policy, however, they gradually slowed down M2 increase rates. The number of housing units sold is in relative correlation to the M2 increase trends. Newly increased loans reflect the same situation as the M2 rate. They both indicate that massive liquidity has a direct correlation with new housing construction. All this leads to a situation that is fertile ground for the creation of vacant housing. This is due to the situation where new construction actually creates an oversupply of new units which will remain vacant either through being unsold or bought by individual property homeowners which keep them unused.

From the government perspective, massive liquidity is one of the key reasons for the oversupply of housing. One of the reasons is due to the massive amounts of currency issued

during 2008 to stimulate the economy; the other is that there are other channels for developers to finance their liquidity to develop their projects.

25% of individual property owners partially agreed that properties are vacant due to massive liquidity and limited investment channels. Many Chinese families have massive liquidity through a high rate of personal savings. In Chinese traditional family perception, housing is a necessity and basic foundation for a secure life. Therefore, their massive liquidity is invested in housing due to high inflation rates and limited investment channels, even at the cost of vacant housing. The perception among Chinese families is that this unoccupied housing, which is often times been paid for in full, can be used later by members of the family or rented out at a later time.

35% of individual property owners are neutral about massive liquidity being the cause of vacant housing. This is due to the fact that many of these people had their current housing given to them by the government in exchange for land expropriation or received their housing through family bequest.

25% of individual property owners partially disagree massive liquidity caused vacant housing. They stated that massive liquidity may occur in some families which accumulated money for a couple of generations for future use. However, in the case of some families massive liquidity is not a factor; their houses were bought through a mortgage process. Vacant housing is not necessarily related to them.

4.3 Hypothesis Three: Artificial low land price

Table 8: Artificially low land prices cause vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million) Valid	Totally Disagree	7	70.0	70.0
	Partially Disagree	2	20.0	90.0
	Neutral	1	10.0	100.0
	Total	10	100.0	100.0
Middle-Size developers(20million-50 million) Valid	Totally Disagree	5	71.4	71.4
	Partially Disagree	1	14.3	85.7
	Neutral	1	14.3	100.0
	Total	7	100.0	100.0
Small developers(<20million) Valid	Totally Disagree	9	90.0	90.0
	Partially Disagree	1	10.0	100.0
	Total	10	100.0	100.0
Government Officers Valid	Partially Disagree	1	25.0	25.0
	Neutral	1	25.0	50.0
	Partially Agree	2	50.0	100.0
	Total	4	100.0	100.0
Individual Investors Valid	Neutral	20	100.0	100.0

From a large developers' perspective, 70% of category one is in total disagreement that land prices are artificially low. Based on interviews, most large developers totally disagreed that artificially low land price is one of the factors causing vacant housing. They state that local Chinese Governments are relying on land leasing fees as a major source of income. There is no sustainable land tax system, which makes the Chinese Government vulnerable when it comes to the amount of revenue that can be generated on this limited resource. 20% of category one is in partially disagreement because they state that even though land prices are high, this cost can be transferred to the housing purchase price.

The majority of category two and three are in total disagreement that land prices are artificially low. This is due to the fact that land cost price is a large part of their initial capital outlay. In addition, they cannot depend on favorable conditions from the government that large developers have access to.

From the Xiamen Planning Institution's perspective, the interviewee has the same opinion that the land price is basically high; however, when large developers set up their profit goals, they have already added the land cost into their total cost, which should be paid by property buyers.

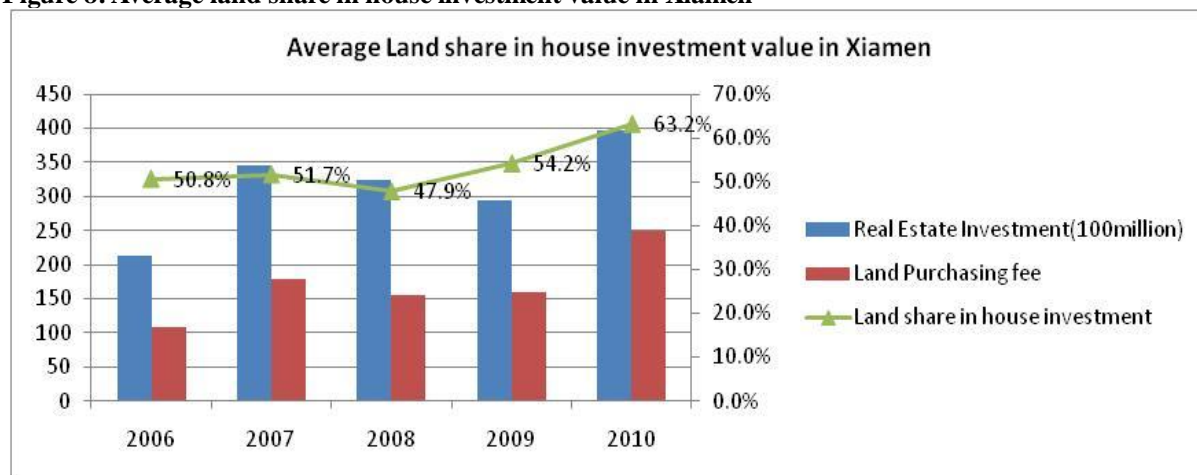
The Xiamen Land Development Company stated that in order to speed up the development period, they set up the land price at a reasonable level, but it is unnecessary that the artificial low land price is the cause of vacant housing.

The Xiamen Fiscal Bureau partially agreed that the land price is relatively high because their perception is that land resources are limited.

The Xiamen Development and Reform Bureau are neutral due to the fact that they don't wish to comment on whether land values are undervalued or overvalued.

Individual property homeowners think more about the final cost of property, such as the price of housing rather than the price of undeveloped land.

Figure 8: Average land share in house investment value in Xiamen



Source:(Liu Baoquan 2011)

This graph represents the average land share in house investment value in Xiamen. As we can see, the land value has become a highly significant part of the total house investment price, since 2006 this accounts for over 50% of the total price.

4.4 Hypothesis Four: Easy Credit

Table 9: Easy credit causes vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent	
Large developers(>50 million) Valid	Partially Agree	2	20.0	20.0	20.0
	Totally Agree	8	80.0	80.0	100.0
	Total	10	100.0	100.0	
Middle-Size developers(20million-50 million) Valid	Partially Disagree	3	42.9	42.9	42.9
	Partially Agree	3	42.9	42.9	85.7
	Totally Agree	1	14.3	14.3	100.0
	Total	7	100.0	100.0	
Small developers(<20million) Valid	Totally Disagree	6	60.0	60.0	60.0
	Partially Disagree	4	40.0	40.0	100.0
	Total	10	100.0	100.0	
Government Officers Valid	Partially Disagree	4	100.0	100.0	100.0
Individual Investors Valid	Totally Disagree	7	35.0	35.0	35.0
	Partially Disagree	8	40.0	40.0	75.0
	Neutral	5	25.0	25.0	100.0
	Total	20	100.0	100.0	

During the later part of 2008 with the onset of the world financial crisis, the Chinese Government had favorable policies for all industries by issuing easy credit and favorable terms. The group that most benefit from these stimulus polices was the real estate industry. Category one developers, most of whom are state owned companies mentioned that it was easy to get credit from banks starting from the second half of 2008, however, since early in 2010, the policy has been changed .The Chinese Government slowed down credit availability across the board by means of increasing the prime lending rate three times so far in 2011. Most category one developers mentioned that this increase would not have a severe impact on their credit accessibility due to their close ties to government banks. Many residential housing projects have been built since 2008, however, due to their stable financial situation, large developers continued working on projects, which create more vacant housing.

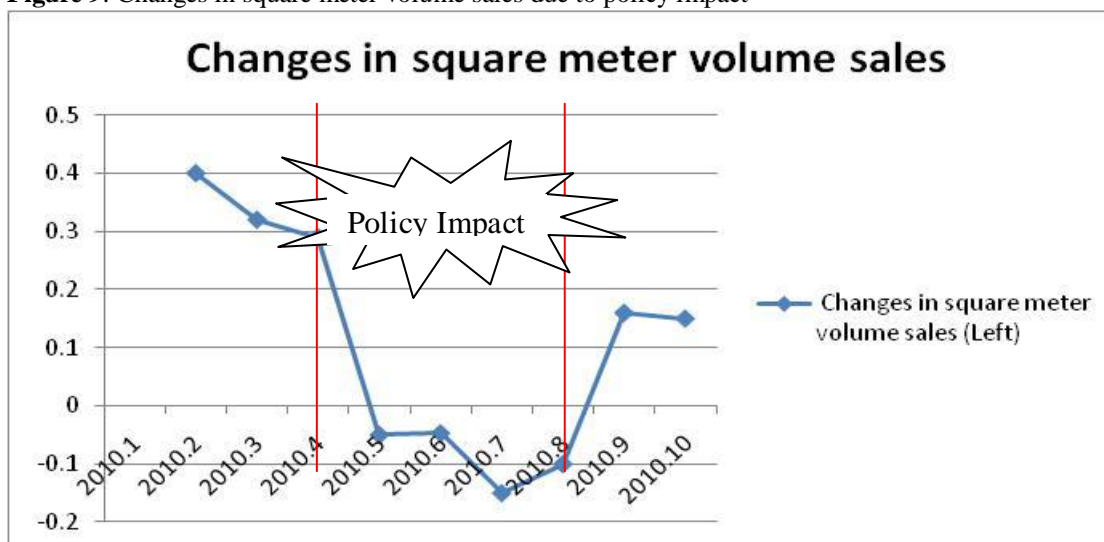
When dealing with category two developers, the results of the survey showed that approximately 43% of developers partially agreed due to the fact of the previously mention

2008 credit favorable policy. They stated that vacant housing was partially caused by the overbuilding of residential housing in 2008, which led to an overstock in housing at this point.

The other 43% partially disagreed because even though there was easy credit, the state owned developers had priority to get access to credit. They regard vacant housing as more related to category one developers, who overdeveloped the housing stock.

Category three small developers is the most affected by the recent increases in the prime interest rates. This is due to the lack of lending options available to them. There are very few other finance channels like REITS in China. Most of the funding is from private sources if their credit access to banks is limited. At this level, vacant housing is not their major concern due to the limited amount of development that can occur from their limited capital outlet.

Figure 9: Changes in square meter volume sales due to policy impact



2010 was a significant year for housing policy changes. Based on the above chart, we can see that the April, 2010 policies, which are related to increased credit accessibility and Limitation of purchasing housing have had a severe impact on changes in square meter volume sales. The Chinese Government still has to continuously deal with a "hot" housing market by increasing housing interest rates three times during 2011.

2010 January Policy (State Council): Deposit should not be lower than 40% if applied towards the second house, which has been paid with bank credit.

2010 April Policy:

1. April 17th (State Council): Deposits should not be lower than 30% for the first house above 90 sqm; Deposits should not be lower than 50% for the second house, loan rates should not be lower than 1.1 times of primary interest rate.

2. 2010 April 30th (National Housing and Construction Department): ***Limitation of Purchasing Housing.***

Table 10: Limitation of Purchasing Housing policies in different cities

<i>Limitation of Purchasing Housing policies in different cities in China</i>		
	Location	Content
Extremely serious	Shen Zhen, Nanjing	Shen Zhen: Residents with local Hu Kou that own two properties cannot purchase additional properties; Permanent residents without local Hu Kou cannot purchase more than one property. <i>Note: Hu kou means household registration.” A household registration record officially identifies a person as a resident of an area and includes identifying information such as name, parents, spouse, and date of birth.” (Wikipedia 2011)</i>
		Nan Jing: cannot purchase more than one property.
Relatively serious	Beijing,Shang Hai, Ning Bo, Hang Zhou, San Ya, Wen Zhou, Hai Kou, Da Lian, Guang Zhou	Members of one family under a single Hu Kou can only purchase one property. Residents of Shang Hai, Hang Zhou, Wen Zhou and Da Lian can only purchase one property whether it is a new property or second-hand property. There are no clear policies for the rest of the cities on the list.
Not that Serious	Fu Zhou, Xiamen	Can only purchase an additional property (Limitation policy only valid in Fu Zhou in five city districts excluding some small towns and counties)

	Tian Jing, Su Zhou	Tian Jing: Can only purchase one additional property within six city districts; no limitation in other districts.
		Su Zhou: Families can only purchase one additional property in the city center.
	Nan Zhou	Lan Zhou: Residents with local Hu Kou can purchase two properties; residents without local Hu Kou can purchase only one property.

2010 Sep. 26th Policy (The People's Bank of China/China's Bank Regulatory Commission):

- Loans are no longer available for third house purchases
- Non-local residents can not apply for loans if they cannot prove that they can submit their social welfare, such as insurance and taxation fees;
- Loan rates should be higher than 1.1 times than the primary interest rate.

2011 Feb-July Policy: Raised interest rates three times within half a year

The government officers interviewed agreed that it is easier for developers to get access to credit; however, there is a trend that the Chinese Government has the intention to reduce the credit availability in order to cool down the real estate market. From the government's perspective, state owned or well known developers still have favorable access to credit. Most vacant housing is held by large developers.

From the individual property homeowner's perspective, they regard the issue of the raising of interest rates as an unimportant factor, which is not related to vacant housing. Because they mentioned that in Chinese perception, housing is the basic necessity for a family. Therefore, even though it is vacant, it still can be passed on to their children. From the other perspective, the house can be used as a hedge to avoid high inflation rates in China.

Individual property owners partially disagreed that vacant housing is caused by easy credit due to the onset of credit limitation policies in 2010 compared with three years ago when credit was much easier to get.

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For the neutral group among individual property homeowners, as mentioned before, their houses came from the land compensation or savings from their parents which they used to make a lump sum payment for their houses. Credit has nothing to do with their vacant housing.

4.5 Hypothesis Five: High Book Value

Table 11: High Book Value causes vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million) Valid	Totally Disagree	9	90.0	90.0
	Partially Disagree	1	10.0	100.0
	Total	10	100.0	100.0
Middle-Size developers(20million-50 million) Valid	Totally Disagree	5	71.4	71.4
	Partially Disagree	1	14.3	85.7
	Neutral	1	14.3	100.0
	Total	7	100.0	100.0
Small developers(<20million) Valid	Totally Disagree	7	70.0	70.0
	Partially Disagree	3	30.0	100.0
	Total	10	100.0	100.0
Government Officers Valid	Partially Disagree	3	75.0	75.0
	Neutral	1	25.0	100.0
	Total	4	100.0	100.0
Individual Investors Valid	Neutral	20	100.0	100.0

Most large developers in category one and two totally disagreed that high book value is the cause of vacant housing. They stated that most large developers have development periods from one and half year to three years. From investor interview feedback, it was pointed out that it is very important for the developer to quickly regain the initial capital investment. It is not practical for them to hold property to maintain high book value. They stated that property has to be moved to maintain cash flow.

70% of large developers in category three totally disagreed that high book value is the cause of vacant housing. However, 30% of large developers partially disagreed that some developers may keep the property until the housing prices are high in order to launch in the stock market to expand their business.

The three Government officials interviewed partially disagreed that large developers keep vacant housing in order to keep the high book value. In the opinion of two of the three officials interviewed, it is not good business practice for a developer to hold properties for high book value due to the fact that this could lead to a severe lack of cash flow. The other official partially disagreed because he thought high book value is a minor or insignificant reason causing vacant housing. The other government official from Xiamen Planning Institution had a neutral view on high book value. He admitted that he was not familiar with this subject.

Individual property homeowners are not involved with the variable of High Book Value due to the fact that they are not corporations.

4.6 Hypothesis Six: Production Targets

Table 12: Production Targets cause vacant housing

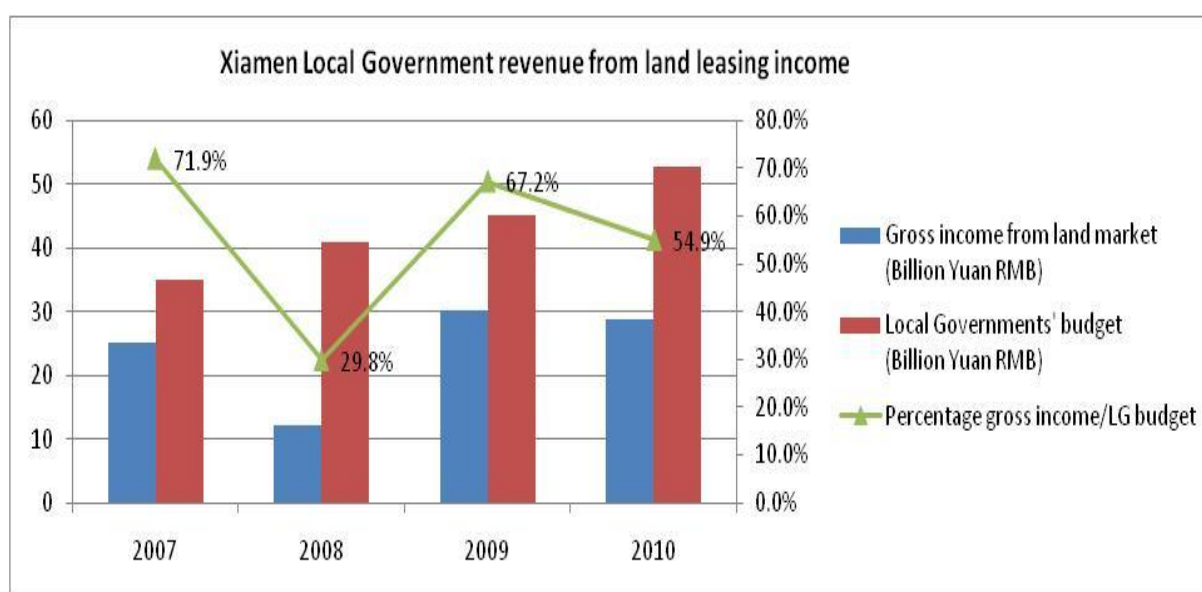
Type of developers based on registered capital/Government Officers/Individual Investors			Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million)	Valid	Partially Agree	2	20.0	20.0	20.0
		Totally Agree	8	80.0	80.0	100.0
		Total	10	100.0	100.0	
Middle-Size developers(20million-50 million)	Valid	Totally Agree	7	100.0	100.0	100.0
Small developers(<20million)	Valid	Totally Agree	10	100.0	100.0	100.0
Government Officers	Valid	Partially Agree	2	50.0	50.0	50.0
		Totally Agree	2	50.0	50.0	100.0
		Total	4	100.0	100.0	
Individual Investors	Valid	Neutral	20	100.0	100.0	100.0

The majority of large developers from all categories totally agree that the GDP production target is one key reason for the cause of vacant housing. All of them regard GDP as a close link with government performance. The higher the GDP is, the better local Chinese Governments performance will be judged. The Chinese Government leases the land out to increase their revenue meanwhile promoting relative industries such as construction and energy sectors. However, this situation causes unsustainable conditions related to resource management, and as a result of this inefficiency, vacant housing is created.

Government officers from the Xiamen Planning Institution and the Xiamen Land Development Company totally agree that production targets are related to the creation of vacant housing.

Government officers from Fiscal Bureau and Development and Reform Bureau partially agree that production targets are the cause of vacant housing because this is not directly related to the concept because it is no longer a key indicator for government officials. Production targets are set at the beginning of the year as a reference to guide them along in their attempts to meet their goals.

Figure 10: Xiamen local government revenue from land leasing income



Source: (Xiamen Development and Reform Bureau 2011) & (Xiamen Fiscal Bureau 2011)

The chart above reflects the data about Xiamen land leasing income accounting for the total local government budget. It reflects four distinct periods of revenue collection for the city. 2007 reflects a high degree of market exuberance due to a great deal of interest among buyers and speculators in the real estate markets. 2008 reflects the results of the world financial crises; however, in 2009 we see a strong recovery due to an infusion of credit and currency by the People's Bank of China. Data from 2010 reflects a market correction driven in part by the Chinese Government's effort to slow the real estate market with the introduction of new regulations and an increase in lending interest rates.

This indication reflects the fluctuation of the Xiamen Local Government revenues from land leasing since 2007. In general, this indicates that revenue from land leasing accounts for more

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than 50% on average, which is a remarkably high percentage of total budgetary income. The local Chinese Governments are highly reliant on land leasing for their revenues. When we relate this to the concept of vacant housing, we see that they are focused more on the revenue from land leasing than on the long term results of this oversupply of properties.

4.7 Hypothesis Seven: Psychological factors

Table 13: Psychological factors cause vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors			Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million)	Valid	Partially Agree	1	10.0	10.0	10.0
		Totally Agree	9	90.0	90.0	100.0
		Total	10	100.0	100.0	
Middle-Size developers(20million-50 million)	Valid	Partially Agree	1	14.3	14.3	14.3
		Totally Agree	6	85.7	85.7	100.0
		Total	7	100.0	100.0	
Small developers(<20million)	Valid	Partially Agree	1	10.0	10.0	10.0
		Totally Agree	9	90.0	90.0	100.0
		Total	10	100.0	100.0	
Government Officers	Valid	Neutral	1	25.0	25.0	25.0
		Partially Agree	3	75.0	75.0	100.0
		Total	4	100.0	100.0	
Individual Investors	Valid	Partially Agree	2	10.0	10.0	10.0
		Totally Agree	18	90.0	90.0	100.0
		Total	20	100.0	100.0	

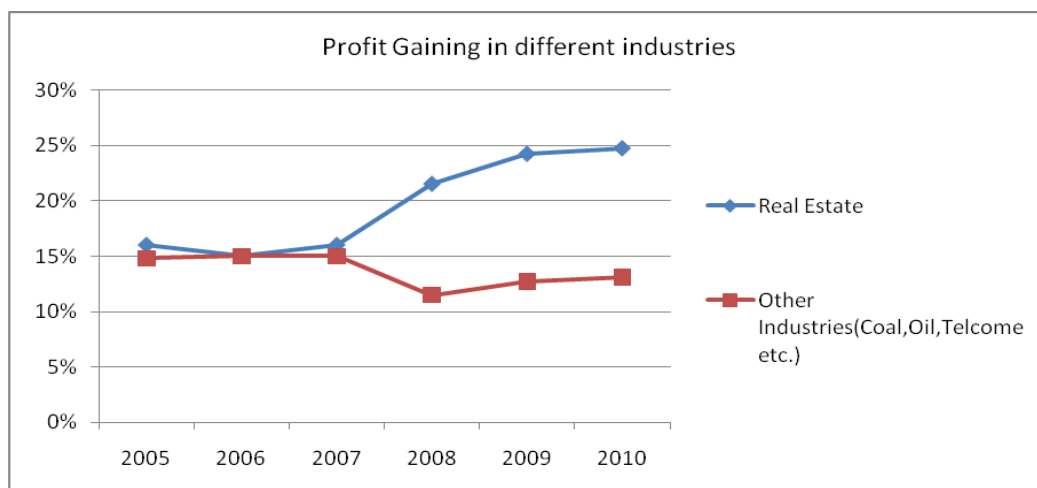
All large developers had a positive view about residential real estate in China, even though under conditions of macroeconomic adjustment from the Chinese Government including the raising of lending rates and the tightening of credit, business conditions will not be as positive as before 2011. Housing sales may slow down for a couple of years, which may cause the vacant housing phenomenon for a short period, however they are confident that there is enough demand for unsold housing. They stated that four groups are the main consumers for housing. Group one 25-35 years old males, who have to purchase housing for marriage reasons; group two 35-50 years old, who need to update housing due to family demands; group three, for future retirement use; group four, for speculative reasons. Real estate is

considered a valuable investment channel for most Chinese people at this time. The uncertainty of the stock market, limitation of investment channels, and high inflation rates has driven most Chinese people to the real estate sector. Therefore, large developers have high expectation on the real estate market, which create vacant housing, but they think this is a very normal market phenomenon.

Government officers partially agree that psychological factors can be one of the reasons that cause vacant housing. Based on statistical resources, the real estate sector has kept increasing since 2001 even through the global financial crisis of 2008. Compared with other industries like Tel com, Petrol and Coal, the real estate sector is the one with the highest profit margins. In addition, due to limited investment channels and high inflation rates, Chinese regard real estate as one of the prosperous fields in China and a product useful in avoiding the depreciation of their assets.

For the individual property owners group, most of them have been negatively affected by the drop of the Chinese stock market in 2008. They have lost much of their confidence in dealing with the stock market, which has led to massive uncertainty. Most of them state that housing prices have increased significantly within these last two years, which makes them shift their high expectation to the real estate market. In addition, due to high inflation rates and limited investment channels, they rely more on the real estate sector for personal investment wealth. These individual investors treat housing as their hedge against depreciation of their assets. Many also feel that these real estate holdings can be used as personal living space for their or their children's future use. In Chinese perception, housing is a necessity for people's lives; they can dedicate their entire working careers to raise money for their housing needs.

Figure 11: Profit gaining in different industries in China



Source: (Sun Jianping & Zhang Weiping 2010)

Figure 12: 2007-2010 Chinese A Stock market trend



Source: (Wang Niumo 2008)

The chart above reflects the drop in stock values caused by a severe market correction in the last quarter of 2008. This had the effect of causing a loss of confidence among Chinese investors which were then forced to seek other investment channels such as the housing sector.

4.8 Hypothesis eight: High transaction cost

Table 14: High transaction costs cause vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million) Valid	Totally Disagree	7	70.0	70.0
	Partially Disagree	2	20.0	90.0
	Neutral	1	10.0	100.0
	Total	10	100.0	100.0
Middle-Size developers(20million-50 million) Valid	Totally Disagree	5	71.4	71.4
	Partially Disagree	1	14.3	85.7
	Neutral	1	14.3	100.0
	Total	7	100.0	100.0
Small developers(<20million) Valid	Totally Disagree	7	70.0	70.0
	Partially Disagree	1	10.0	80.0
	Neutral	2	20.0	100.0
	Total	10	100.0	100.0
Government Officers Valid	Partially Disagree	3	75.0	75.0

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		Neutral	1	25.0	25.0	100.0
		Total	4	100.0	100.0	
Individual Investors	Valid	Totally Disagree	9	45.0	45.0	45.0
		Partially Disagree	8	40.0	40.0	85.0
		Neutral	3	15.0	15.0	100.0
		Total	20	100.0	100.0	

Most large developers in all categories agreed that high transaction costs are not the cause of vacant housing. They stated that compared with the housing price, transaction cost accounts for a very small part of the total. This will not have any effect on the housing market supply.

Government officials from the Xiamen Planning Institution, Xiamen Land Development Company and Development and Reform Bureau stated that the transaction cost of selling housing will not influence the supply of the market even though the transaction cost is high. Large developers can transfer the cost into the final housing price.

A Government official from the Fiscal Bureau expressed a neutral opinion due to the fact that she felt that developers had a civic duty to pay their fair share of taxes on profits and gains.

.45% of individual property owners totally disagreed that high transaction cost is the cause of vacant housing. They stated that compared with the housing price, transaction cost accounts for a very small amount of the final housing price. In addition, their houses are for their children's future use, which makes transaction cost irrelevant to vacant housing.

40% of individual property owners partially disagreed that high transaction costs are the cause of vacant housing. Some of them also felt that transaction cost did not have a severe impact on their overall decision to purchase property. Their houses are their life necessity. Many of them choose to buy more than one property, many times for their own use or children's future use, or as a hedge against inflation. Therefore, transaction costs are not their concern.

4.9 Hypothesis Ten: Disregard of market demand

Table 15: Disregard of market demand causes vacant housing

Type of developers based on registered capital/Government Officers/Individual Investors	Frequency	Percent	Valid Percent	Cumulative Percent
Large developers(>50 million) Valid	Totally Disagree	3	30.0	30.0
	Partially Disagree	6	60.0	90.0
	Neutral	1	10.0	100.0
	Total	10	100.0	100.0
Middle-Size developers(20million-50 million) Valid	Totally Disagree	1	14.3	14.3
	Partially Disagree	5	71.4	85.7
	Neutral	1	14.3	100.0
	Total	7	100.0	100.0
Small developers(<20million) Valid	Totally Disagree	1	10.0	10.0
	Partially Disagree	9	90.0	100.0
	Total	10	100.0	100.0
Government Officers Valid	Partially Disagree	2	50.0	50.0
	Neutral	1	25.0	75.0
	Partially Agree	1	25.0	100.0
	Total	4	100.0	100.0
Individual Investors Valid	Totally Disagree	14	70.0	70.0
	Partially Disagree	3	15.0	85.0
	Neutral	3	15.0	100.0
	Total	20	100.0	100.0

30% of large developers in category one totally disagree that vacant housing is due to disregard of market demand. They state that there are always demands for housing from different groups of people.

Most large developers in category two and category three partially disagree that vacant housing is caused by disregarding of market demand. They stated that there are always demands on housing from different groups of people, however, new government policies may change the market plan, for example, “Limitation Housing Purchasing in 2010” and increase of down payment for second houses.

Some large developers mentioned that vacant housing is caused by the government's miscalculation of market demand. The local Chinese Governments create housing with disregard to actual demand. Government creates large amount of social housings for low income groups of people, however, the location of houses are far away from city or located next to railway tracks, which are areas of high pollution.

The feedback from the official of Xiamen Planning Institution had a neutral opinion on the subject.

The Official from the Xiamen Land Development Company partially agreed due to the fact that the Chinese Government requires a timeline for starting to develop a vacant land, which drove developers to construct numerous housing units.

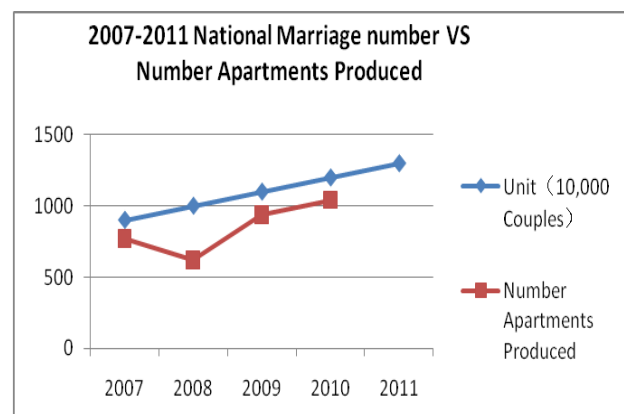
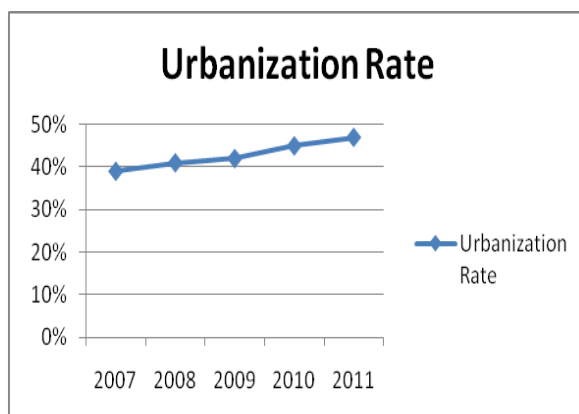
The officials from the Xiamen Fiscal Bureau and Development and Reform Bureau basically had the same idea that there is a huge demand for housing due to the significant growing of urbanization and marriage rates in China.

70% of individual property owners totally disagreed that vacant housing is caused by disregarding market demand. They stated that their vacant housing has a future purpose and investment function as mentioned above, which is nothing to do with disregarding market demand.

The rest of them partially disagreed or hold the neutral view that vacant housing is caused by disregarding market demand, because they don't have an in-depth view of this concept.

Figure 13: Urbanization Rate

Figure 14: 2007-2011 National Marriage Numbers vs Number of apartments produced



Source: (Chen Xiaotian 2011)

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There is a tremendous growth in the urbanization rate in China since 2007 especially in the eastern coastal industrial areas. In 2011, this reached a historic high of 47% which does not exhibit any signs of slowing down anytime soon.

Due to the Chinese social tradition of the need for bridegrooms to prepare a home before marriage, an increase in the marriage rate in China has led to an increase in new housing purchases. Some of these remain vacant until the groom has sufficient funds to complete the interior of the home with the appropriate decor and furniture.

Chapter Five: Conclusion and Recommendations

Large developers from category one and government officials have general similarities on these nine hypothesis when I conducted the in-depth interviews. Both of these groups gave much more macro and professional opinions when addressing the issues. Their comments were much more valid compared with other categories of large developers. For individual property homeowners, due to the limited number of representation from this group, it was not possible to form a valid conclusion to the hypothesis. When we analyzed the answers to the research questions, comments from large groups and government officials exhibit reliable and valid results. The answers from individual property homeowners can only be used as reference and are not valid as hypothesis results.

In order to answer the main question of *Why is there vacant housing in China?* The following specific questions need to be answered.

Specific Questions

1. What is the definition of vacant housing?

Prior to my fieldwork, my understanding of vacant housing was that it involved houses that were vacant for a certain period which led to market problems. However, after in-depth interviews and desk research during and after fieldwork, vacant housing is defined as houses that are vacant due to construction area (supply areas) that are higher than sales areas for a continuous period from developers' perspective which causes market problems. In addition, from an individual property homeowners' perspective, properties that are sold but not occupied can also be considered vacant housing. Actual field observations in Xiamen point to the fact there is a large number of unsold/unoccupied units. This indicates that the supply is larger than the sales. Even worse, sales area does not indicate that buyers will occupy units that are sold. The gap between construction area and sales volume leading to vacant housing is very significant as indicated by figure one above. Worse than that, among this sales volume, properties not occupied by individual property homeowners need to be added to the total number of vacant housing.

2. Do these nine variables motivate developers to create an oversupply of housing units which leads to vacant housing and motivates individual property homeowners to hold properties for reasons other than immediate occupancy?

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Hypothesis One Low Interest Rate: Strong

As a result of the world economic crisis of 2008, the Chinese Government attempted to stimulate the Chinese economy by lowering interest rates for housing loans. This had an unexpected side effect of creating a great deal of vacant housing due to over building by developers when they reacted to low interest rates and had a general optimistic feeling regarding the Chinese economy. However, a steep escalation of housing prices and inflation issues in the Chinese macro economy has forced the Chinese government to increase interest rates for three times in 2011. When interest rates increased, investments in housing dropped which led to vacant houses due to the oversupply from 2008.

Low interest rates have a high impact on the creation of vacant housing in China. Both large developers and government officials have a general agreement on this variable. Similarities exist between the Chinese example and other countries such as Japan and Korea when it comes to the effects of low interest rates on housing markets. This is reflected in the literature review.

For individual property homeowners, there are different methods for gaining property, this included inheritance, housing allocation compensation from government, and payment from parents' savings. In addition, individual property homeowners keep property vacant for their children's future use and as a hedge against inflation, so as a result, interest rates will not have a severe impact on them.

Hypothesis Two Massive Liquidity: Strong

Massive liquidity is responsible among the large developer sector for vacant housing due to the large amounts that are present which allow unlimited development in the housing sector. In addition we have the presence of M2(Money Circulation) and newly increased loans after 2008. All this formed a volatile mix that furthered the problem of vacant housing.

Among individual homeowners vacant housing is directly affected by massive liquidity to a limited extent because they have the option to use these funds to purchase additional properties as a hedge against inflation and as an option to the stock market.

Hypothesis Three Artificial Low Land Price: Weak

There is a large degree of agreement from all groups of interviewees that artificial low land price is not the cause of vacant housing due to the fact that land price shares are above 50% of the total housing price. Within the literature review, there exist two schools of thought in regards to the concept of land price and its affect on vacant housing. Those that pointed to high land prices as the cause of vacant housing are supported by the figure above.

For individual property homeowners, artificial low land prices are not their concern due to lack of their involvement.

Hypothesis Four Easy Credit: Strong

Numerous European and American examples of easy credit can be found throughout the literature. When dealing with the Chinese case of easy credit and after dealing with the results from the field work, easy credit has been proven to have a direct impact on vacant housing. 2008 saw the Chinese Government stimulating the Chinese economy during the world financial crises by allowing easy credit to exist in the banking sector. This however, had the unfortunate result of allowing the housing market to "overheat". In addition, the Chinese Government implemented several new housing policies, especially the *Limitation of Housing Purchasing* regulation in 2010 that attempted to reduce speculative behavior in the housing sector which leads to the creation of more vacant housing.

For individual property homeowners, the ease of credit availability is an unimportant factor in the cause of vacant housing. Regardless of whether credit is easy or not, housing is a necessity in Chinese perception. In addition, it can be used as a hedge against inflation; therefore, easy credit does not impact their decision to purchase property.

Hypothesis Five High book value: Weak

There is a large degree of disagreement from all groups of interviewees that high book value is the cause of vacant housing. In addition, there was no data available during the fieldwork due to the privacy issues of companies involved.

For individual property homeowners, high book value is not related to their cases.

Hypothesis Six Production target: Strong

The majority of large developers from all categories totally agree that the GDP production target is one key reason for the cause of vacant housing. In general, based on the secondary data collected from fieldwork, revenue from land leasing accounts for more than 50% on average, which is a remarkably high percentage of total budgetary income. The local Chinese Governments are highly reliant on land leasing for their revenues. Therefore, production target has a strong relationship to the causes of vacant housing. Similarities exist between the Irish and Chinese situations regarding the causes of vacant housing. This is reflected in the literature which points to the economic conditions which existed in both countries between 2008 and 2011.

Hypothesis Seven Psychological Factors: Strong

In general, it can be determined that due to the unique nature of the Chinese economy, psychological factors have a severe impact on vacant housing across many groups. Based on field research interviews, all groups were reacting to limited investment opportunities available in China. All groups involved also saw housing as a safe bet when it came to future investments, not only in a monetary way, but also as a social investment in the future. Real estate market exuberance can be seen in the periods prior to 2010 when all sectors of the Chinese economic spectrum were reacting to a loss of confidence in the Chinese stock market.

Hypothesis Eight High transaction cost: Weak

During field research, it was determined that high transaction cost had no direct bearings on vacant housing. Compared with the cost of housing, transaction cost are a very small part of the total. In addition, housing in China is seen as a social necessity, something that is essential in many situations such as marriages and in the continuation of family traditions.

Hypothesis Nine Disregard Market Demand: Weak

Most groups of interviewees partially disagreed that market demand was disregarded due to the high growth of urbanization rate and less number of apartments produced compared with number of couples married. There is always market demand, however, it

may be impacted by some external unexpected issues like policies and macro economic crisis.

In conclusion, low interest rates, massive liquidity, easy credit, production targets and psychological factors are strong variables that cause vacant housing in China.

Recommendation

Vacant housing in China is a problem that needs more attention than it is currently getting. This is due to the fact that it has great potential to cause a great deal of damage if it is not dealt with. Damage to the environment, negative affects on the housing market, negative social impacts, issues with sustainability, are only a few of the problems that stem from vacant housing. International comparisons can be used as a cautionary guide for any future trends in the Chinese housing sectors. It is obvious that many real estate markets in China are already experiencing a housing bubble similar to ones seen in Europe and the USA. When vacant housing is present, the Chinese Government must find ways to counter this problem. The problem of vacant housing could lead to an erosion of the value of property already held by home owners and investors. When the Chinese Government initiates some actions to prevent speculation and attempts to lower housing prices, it should recognize that it may caused some side effects as in the case of vacant housing. This could have a very serious effect on social stability if a market correction takes place which would casue a large loss of equity among current owners and investors. Unchecked vacant housing can also have a negative effect on the environment and social landscape by creating large areas of partially filled housing units that are surrounded by empty units that are unkept and run down causing a situation of blight and uneven maintence within the housing complex. In addition, there is no systemetic method to estimate the precise number of vacant housing right now, these are some of the barriers that need to be overcome.

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Annex

Name	General Explanation	Literature	Example: Outside of China	Example: China
Interest rate	an important factor in stimulating the purchase of properties for investment purposes.	DiPasquale Denise and Wheaton William C. ,1992	in the capital market, if the interest rates are low and inflation are high , families are will be willing to pay more prices even though the their annual ability to pay is fixed.	What happens if interest rates fall? Buyers now feel able to buy more houses since they can afford to service a larger debt; they therefore raise their reservation prices. (Evans Alan W. (ed) 2004, P163,P2)
Massive Liquidity	How easily an asset can be spend if desired.Cash is wholly liquid.The liquidity of other assets is usally less;how much less may be measured by the ease with which they can be exchanged for cash(that is,liquidated)	Bishop Matthew , 2009, Economics An A-Z Guide		LG and developers raised last year through land and property sales and borrowings.They seem to believe tat the central government will change its mind before they run out of liquidity(China International Business,2010)
Artificially inexpensive land	Below market price mandated by government	(Stone and Ziemba, 1993)	Investors were given incentives by Japanese tax law to hold real estate assets since inherited land is valued at far below market price	The number of partially completed complexes that developers have simply abandoned.It is what results when an industry is driven by an abundance of cheap land.(The Economists,2004)
Credit	A loan extended or (sometimes) taken by, for example, delayed payment of an invoice.	Bishop Matthew, 2009, Economics An A-Z Guide	From 1982 to 1989,Japanese banks for real estate loans (as a share of total loans) increased from nearly 5.5% to more than 12% for city banks, and from 6% to 11% for regional banks.(Serdar Dinc and Patrick M McGuire, 2004)	The number of partially completed complexes that developers have simply abandoned.It is what results when an industry is driven by an abundance of cheap land,cheap labour and easy credit(The Economists,2004)
Production Target	the number of units a business is expected to produce	Li Dongxu 2010	Ireland rapid economic growth was due to its significant development in real estate. In 1996, the real estate industry accounted for 5% of its GDP; 2006, 10%. From1995 to 2000, the investment in housing was 3.3 billion euro, however, between 2000 to 2006, it reached 10.5 billion, which increased by 218%.	Fulfillment of production targets was sometimes the primary criterion for staff performance.(Ding Chengri & Song Yan 2005)
Psychological factors	Ultimate causes of housing bubbles are mostly psychological, like the Keynesians to follow	Holcombe Randall G. & Powell Benjamin (ed) 2009	A view from Keynesian economists and proponents of Behavioral Finance, such as Robert Shiller, the housing bubbles and bubbles in general are caused by psychological factors. Due to spikes in development, people became confident and tolerant of risk taking.	The Asian financial crisis and the poor performance of China's state-owned enterprises have increased people's sense of uncertainty and hava a negative psychological environment for the future development of the Chinese housing market.(Ding Chengri & Song Yan (ed) 2005)
Book value	The net valuation of an asset in a company's accounting records. The book value of an asset is its cost minus the related accumulated depreciation.	Williams J.R ,Haka S.F,Betner M.S and Carcello J.V,2009, Financial & Managerial accounting: the basis for business decisions.	Nowadays, shares of leading real estate companies in Spain sell at an average of 14.57% above the value of the assets they control.(Wharton Unversia 2011)	To maintain the book value of their assets, companies declined to cut prices and thereby boost the property sales.(Ding Chengri & Song Yan 2005)
Disregard of market demand	Market demand refers to the amount of a good or service that people are both willing and able to buy. However, somtimes suppliers pay no attention or heed to or ignore market demand	Bishop Matthew , 2009, Economics An A-Z Guide,Profile Books Ltd, London	By some estimates more than a million new homes crowd Spain's real estate market, as builders have disregarded declining demand. This oversupply will require years to be assimilated by the market	Some developers focused on high-profit,high risk and up-market properties such as offices,commercial centers and luxury housing.
Transaction cost	The sale and purchase of Property invovle several costs: registration costs,real estate agent fees,legal fees and sales and transfer taxes.In countries where costs are high, most individuals postpone their decision to purchase properties.	Cruz Prince Christian R. 2008 /Bishop Matthew , 2009, Economics An A-Z Guide,Profile Books Ltd, London	In Europe, countries with higher transaction costs are observed to have lower market turnover and bigger household sizes .	Total costs in Taiwan, Thailand, China, Indonesia, Philippines, and South Korea are above 10%. For these countries, bulk of the costs goes to sales and transfer taxes and real estate agent's fees.(Cruz Prince Christian R. 2008)

Questionnaire

Large Developers

Name of Organization: _____

Department: _____

Date of Completion: _____

Section A Company Background:

1. Nature of the company: State-Owned Private Join Venture

2. Size of the Company

- Registration Capital: _____

- Number of Employees: _____

3. Date of Completion: _____

Section B Personal Data

1. Name of Employer: _____

- Contact Number/Email address: _____

- Position in the company: _____

- Power decision in the company: _____

Section C

1. How many real estate projects/buildings have you developed?

2. What is the vacant rate in your current developed buildings?

- Fully occupied
- Less than 5% vacant
- Between 5-10% vacant
- Between 10-20% vacant
- Between 20-30% vacant
- More than 30% vacant

3. What do you think about the housing price in the general market?

- Very low (-20% of expected)
- Low (-5-20% of expected)
- Ok
- High (+5% of expected)
- Very High (+20% expected)

4. Do you think buyers can afford this property in this current market?

5. What are the factors that keep housing prices high even with the presences of vacant housing?

Large Developers						
Variables	Disagree \Rightarrow Agree					Comments
	Total Disagree	Partially Disagree	Neutral	Partially Disagree	Totally Agree	
	1	2	3	4	5	
Low interest rate						
Massive Liquidity						
Artificially low land price						
Easy Credit						
High Book Value						
Production Target						
Psychological factors: Expectation/Uncertainty						
Transaction Cost						
Disregard of Market demand						
Others						

6. How long are you willing to keep vacant housing from the marketplace?

- Less than one year
- 1-2 years
- 2-3 years
- More than 3 years

7. What happen if you do not sale?

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8. What if you lower your price and will it sell faster?

Government Officers

Name of Institution: _____

Department: _____

Date of Completion: _____

Section A Personal Data

1. Name of Employer: _____

- Contact Number/Email address: _____

- Position in the department: _____

Section B

1. How many real estate projects/buildings have you developed/administered in your jurisdiction?

2. What is the vacancy rate in your current developed/administered buildings?

- Fully occupied
- Less than 5% vacant
- Between 5-10% vacant
- Between 10-20% vacant
- Between 20-30% vacant
- More than 30% vacant

3. What do you think about the housing price in the general market?

- Very low (-20% of expected)
- Low (-5-20% of expected)
- Ok
- High (+5% of expected)
- Very High (+20% expected)

4. Do you think demand side can afford for it?

5. Which of the following are the reasons for vacant housing existing in your administrative area?

Government Officers						
Variables	Disagree \Longrightarrow Agree					Comments
	Total Disagree	Partially Disagree	Neutra 1	Partially Agree	Totally Agree	
	1	2	3	4	5	
Low interest rate						
Massive liquidity						
Artificially low land price						
Easy Credit						
High book value						
Production Target						
Psychological factor: Expectation/Uncertainty						
Transaction Cost						
Disregard of Market demand						
Others						

6. Do citizens wait for sale or some other reasons ?

7. How long are you willing to keep vacant housing from the marketplace?

- Less than one year
- 1-2 years
- 2-3 years
- More than 3 years

8.If it is for investment, what happens if there is a market correction or delay in the sell?

9.What if you lower your price, will it sell faster?

Individual Property Homeowners (Have more than one house/ some of them are vacant)

Second A Personal Data

1.Name of Interviewee: _____

- Contact Number/Email address: _____

-Occupation: _____

- Main Source of income:_____

Section B

1. What is your yearly income level?

60,000RMB-500,000RMB 501,000RMB-1,000,000RMB 1,000,000 and above

2.How many housing units do you have?

3.How many of your housing units are vacant?

4.What were the main factors that led you to buy the property?

Good location Access to public transportation Plenty of Amenities Low Price

Others: _____

5.What do you think about the housing price in the general market?

Very low (-20% of expected)

Low (-5-20% of expected)

Ok

High (+5% of expected)

Very High (+20% expected)

6.What are the reasons that keep the housing price high even with the presence of vacant housing?

Individual Property Homeowners						
Variables	Disagree \Longrightarrow Agree					Comments
	Total Disagree 1	Partially Disagree 2	Neutral 3	Partially Agree 4	Totally Agree 5	
Low interest rate						
Massive Liquidity						
Easy Credit						
Psychological factors: Expectation/Uncertainty						
Transaction Cost						
Disregard of Market demand						
Others						

7. Do you wait for sale or some other reasons (Home Holiday/retirement/Pass on to family members)?

8. How long are you willing to keep vacant housing from the marketplace?

- Less than one year
- 1-2 years
- 2-3 years
- More than 3 years

9. If it is for investment, what happen if you cannot sale?

10. What if you lower your price, will sell faster?(If you cannot sell, what if you lower the price?)