

## Chapter 1

### Introduction

#### 1.1 Background and significant of the study

Since the reform and opening of People's Republic of China in 1978, Chinese economy has developed dramatically. According to the report of China statistics Bureau, China's GDP has reached 34,050,678 million Yuan in 2009. In 2010, China's total GDP exceeds that of Japan and becomes the second biggest one in the world. China's rapid economic growth has attracted many scholars' and economists' attentions in the whole world.

Figure 1.1 shows the GDP growth rates of People's Republic of China over the period of 1998 to 2011. It can be seen from figure 1 that since 2003, China's GDP growth rate has exceeded 10% and reaches a peak at 14.2% in 2007. Later the growth rates slow down in 2008, because of the financial crisis. This figure shows that China has achieved a sustainable economic growth from 1998 to 2011.

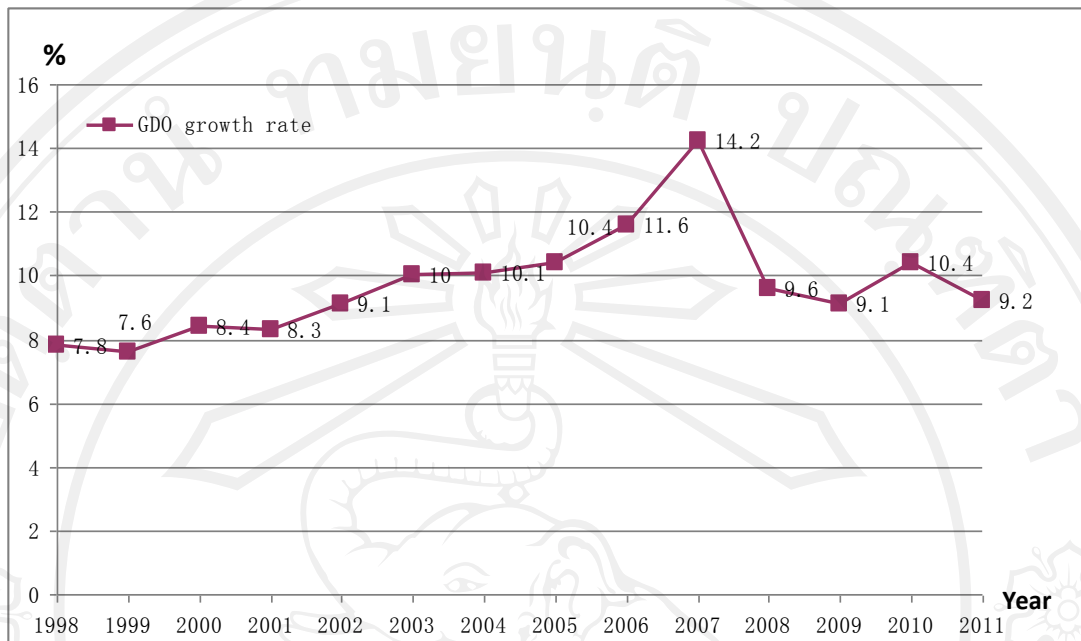


Figure 1 .1 China's economic growth rates, 1988 - 2011.

Source: Statistics Bureau of China

China's stock market start from the beginning of 1990s, this market is the result of Chinese government system innovation and the self-development of Chinese financial market.

Through the past 20 years develop, China's stock market already improved and become the barometer of economic development. China's stock market separated into 3 parts: Shenzhen stock market (Shenzhen Index), Shanghai stock market (Shanghai Index) and Hong Kong stock market (Hengsheng Index). The real estate sector stock is one of the important parts of Shenzhen Index; therefore this study can use Shenzhen Index as the mirror of real estate sector stock.

Figure 1.2 shows the Index trend of Shenzhen Stock Market; from 1998 to 2005 the trend is smooth. From 2005 to 2007, there is a rapid growth, and in 2007 the index gets the peak which pointed at 17701. From 2007 to 2008 the stock market index decreases sharply, because of the global financial crisis. After that the index increase, and get 13700 point at 2009.

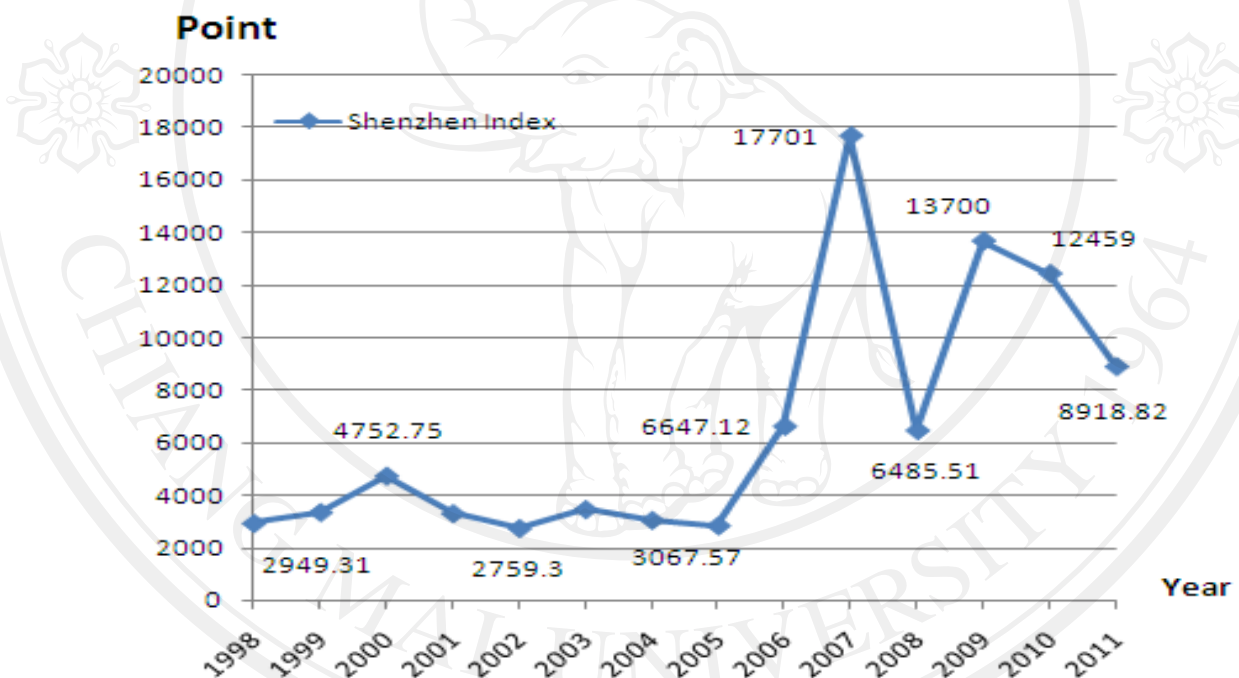


Figure 1. 2 China's Shenzhen Index, 1998-2011

Source: Statistics Bureau of China

Similarly, real estate is one of the pillar industries of national economic, the change of house price pay a lot of attentions from public.

The data from China Statistics Bureau also shows that the average selling price of commercial house has increased over the same period. Figure 3 shows the movements of house price since 1998. Based on data collected by the Statistics Bureau of China, the house price has increased from 2061 Yuan/sq.m<sup>2</sup> in 1998 to 5144 Yuan /sq.m<sup>2</sup> in 2010, or in other words it has increase more than two times.

Figure 1.3 also states that the house price has increased gradually until 2003 and reached the peak of 3,864Yuan/sq.m<sup>2</sup> in 2007. Although the house price has slightly fallen to 3800 Yuan/sq.m<sup>2</sup> in 2008, it then soars to 5144 Yuan/sq.m<sup>2</sup> in 2010.

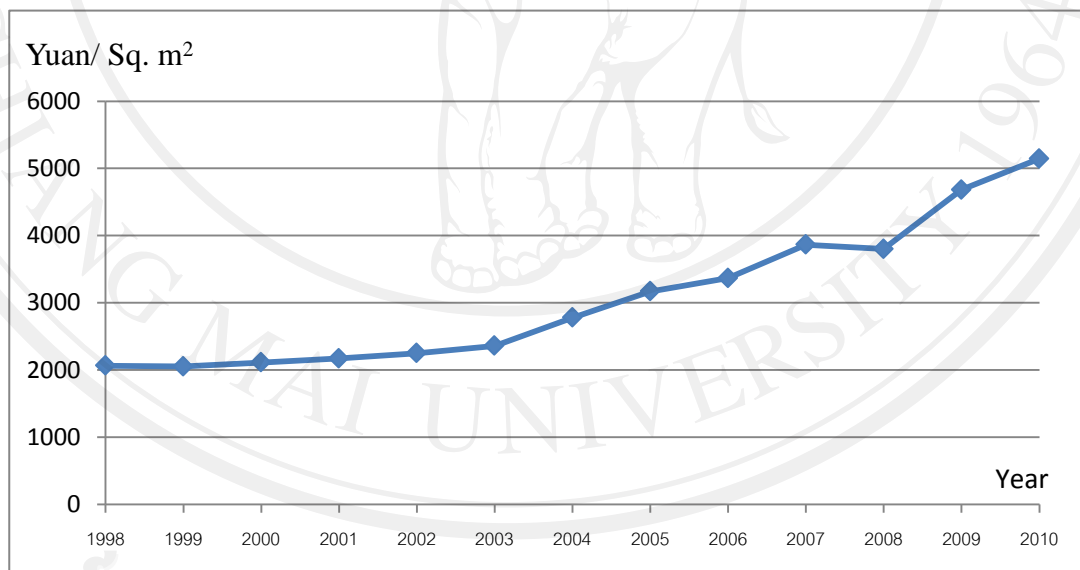


Figure 1.3 Average house price of Commercial Building (HP) 1998-2010

Source: Statistics Bureau of China

Figure 1.4 shows the China's RESS trend. The real estate sector stock index is established in 2006, from about 2000 points increased to around 5500 points. But

the index increase period is very short. From 2007 to 2008 the China's stock index back to the start point. In the next year the index increased to around 4500 points.

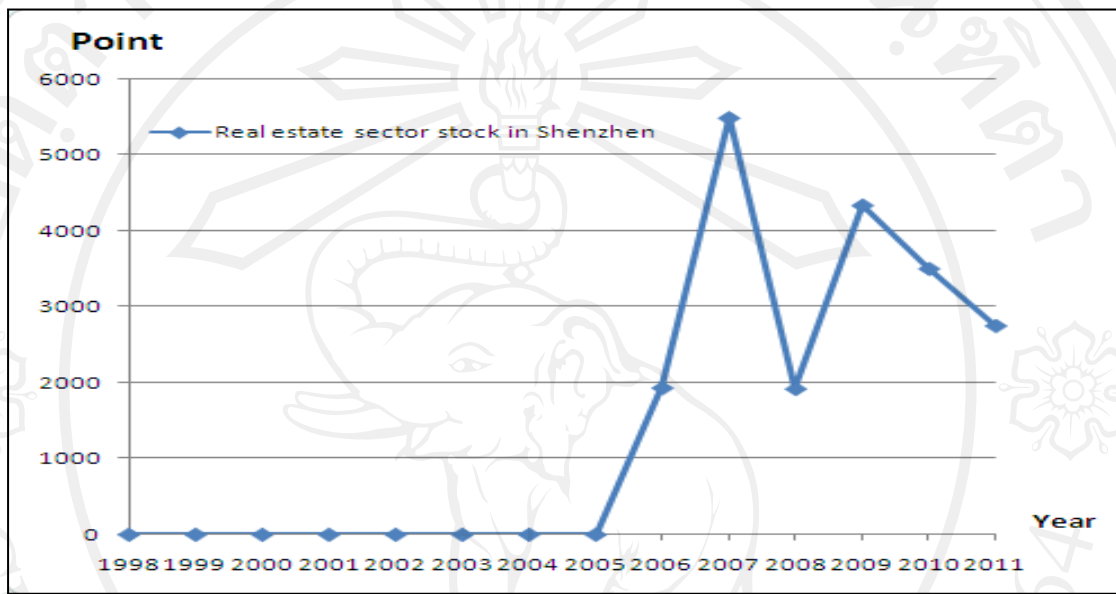


Figure 1.4 China's real estate sector stock (RESS) in Shenzhen, 2006-2011

Source: Statistics Bureau of Chin

As shown in figure 1.1 and 1.4, there is evidence that the economic growth and Real Estate Sector Stock have increased, more or less, from 1998 to 2010. Figure

1.5 shows the Shenzhen Index growth rate and trend of real estate sector stock. This study noticed that the real estate sector stock indexes' increased trend similar with that of the Shenzhen Index over the same period from 2006 to 2011.

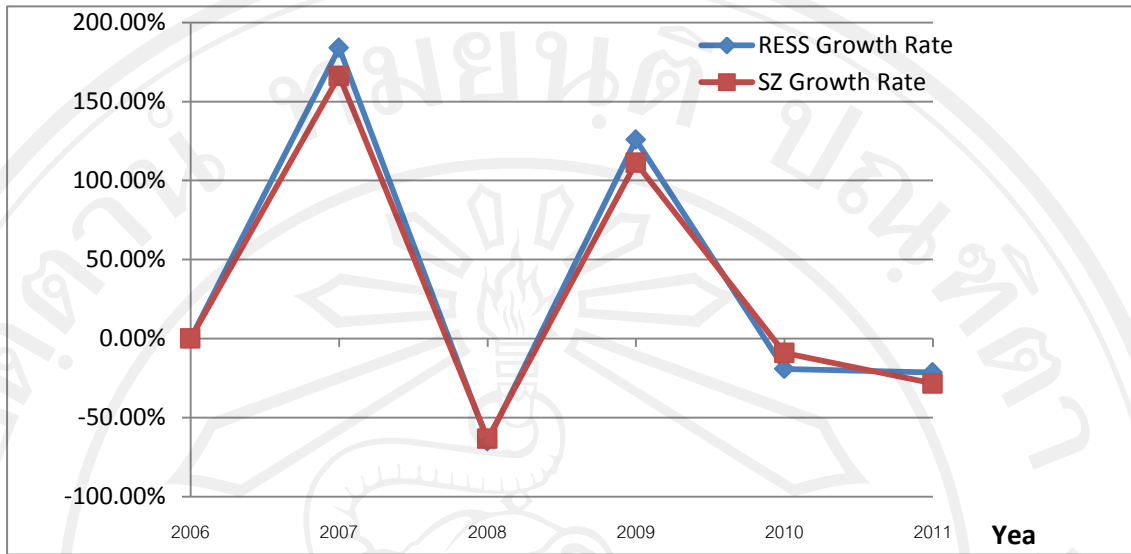


Figure 1.5 Shenzhen Index growth rate and Real estate sector stock rate, 2006-2011

Source: Statistics Bureau of China

However, from Figure 1.5 both the Shenzhen Index and Real Estate Sector Stock have increased. The combined figure shows that from 2006 when the Real Estate Sector Stock index established, the growth trend of RESS has the similar expression with Shenzhen Index. From 2006 to 2007, when the Shenzhen Index growth rate reaches the peak, the RESS get the historical peak which is around 5500 points at the same time. When global financial crisis broke up, Shenzhen Index growth rates are slow down, and the RESS point back to the initial point.

From the point of the stock market, due to price reactions also lag behind the stock index, therefore the real estate sector stock to be the leading role of the market, and the one which will indicate the prosperity and recession of real estate

market accurate is real estate sector stock. Therefore, analysis of the relationship between the Shenzhen Index and Real Estate Sector Stock has the very vital practical meaning.

The increase in house price and the famous of stock market have been associated with the implementation of various policies by Chinese government, while the purpose of those policies is to confine and intensify real estate market and its related stock market developments. Those policies include both the monetary policy and fiscal policy.

**China real estate sector stock policies as follows:**

**In the end of May, 2006**, the Ministry of Construction, Development and Reform Commission and other nine Commissions jointly issue the “suggestions on adjusting the housing supply structure to stabilize the house price” (State Council of China, 2006). It states six issues to promote the healthy development of real estate sector.

**In August 2007**, the State Council issues “a solution to the housing difficulties of urban low-income families” (State Council of China, 2007, No. 24). It clearly defines this study should take the low-rent housing system as the key of real estate development, using multi-channel to solve the housing difficulties of the low-income urban families.

**In 2008**, in order to promote the healthy development of real estate sector, the People's Bank of China adjusts the deposit reserve ratio for several times. On 25<sup>th</sup>, March, 2008, the deposit reserve ratio is increased by 0.5% to 15.5%, which is the highest one in the history. Then, the People's Bank of China increases the deposit reserve ratio twice by 0.5%, which are on 16<sup>th</sup>, April, 2008 and 20<sup>th</sup>, May, 2008, respectively. Later, due to the financial crisis, the People's Bank of China gradually decreases the interest rates and deposit reserve ratio several times to stimulate the whole economy.

**In 2009**, the government has repeatedly issued some related real estate policies to regulate the real estate sector eliminate real estate bubble. In December, 2009, the Central Economic Conference issues the “increasing the supply of commercial house in the next year and continue to encourage the own-residential house consumption”(Central Economic Conference 2009). Then the State Council issues the “four measures on confining house price appreciations in some cities” (State Council of China, 2007).

**In 2010**, the Chinese government adopted a tight monetary policy measures to let the China economy cool; the specific approach is to raise bank reserve ratio and control the size of loans of financial institutions. From January 2010 to February 2011, the People's Bank for 8 times to raise the deposit reserve ratio, from 15.5% to 19.5%. In addition, from October 20, 2010 to February 9, 2011, the government



increase deposit rate three times, after three adjustments, the deposit rate to 3% and interest rate raised to 6.06%.

**On the other hand**, the Chinese government to further strengthen measures to control real estate prices, restrictions on the second house down payment is generally considered a sign of content control policies. From January 2010 to January 2011 the State Council for three consecutive times to raise the mortgage down payment raised from 40% to 60%.

**Then in 2010—2011**, the Chinese government has repeatedly issued some related real estate policies to regulate the real estate sector, which are shown as the bellows table 1. It shows that the management of real estate market, especially the controlling of house prices, has become the key point of macro management.

**Table 1. 1** Macro-control policies for real estate sector in 2010-2011

Department	Time	Main content
State Council	10 <sup>th</sup> , January, 2010	Increasing the effective supply of social housing, regulating housing demand, discouraging speculative demand.
State Council	9 <sup>th</sup> , April, 2010	Announcement of the possibility of introducing a property tax on a pilot basis in Shanghai, Beijing, Shenzhen and Chongqing
State Council	10 <sup>th</sup> , April, 2010	Second home buyers are required to pay 50% down payment instead of 40%.
Ministry of Housing	10 <sup>th</sup> , June, 2010	One family own at least 1 property
State Council	15 <sup>th</sup> , January, 2011	Accelerate the construction of social security residential properties
State Council	26 <sup>th</sup> , January, 2011	Down payment ratio of second mortgage must be no less than 60%
State Council	27 <sup>th</sup> , January, 2011	Shanghai, Chongqing began on the part of individual housing property tax.
State Council	12 <sup>th</sup> , July, 2011	House price rising quickly in two three line city take measures limited purchase order

Source: Official websites of each department

## 1.2 Purposes of the study

From the above mentioned issues, this paper will mainly have two purposes.

First, it will find the appropriate models for forecasting the real estate sector stock and Shenzhen Index. Because this study want to use the appropriate model to study of interaction mechanism between them can help investors to understand how the stock

indexes run in stock market and forecast the stock indexes in the future. Moreover, it can establish an effective portfolio of assets to make a reasonable choice. Second, it will analyze the dependence measures between returns in percentage of these two kinds of stock indexes in China. Because this study will not only use select appropriate model to help investors understand capital market, but also help China's government to put forward effective policy suggestion for real estate market and stock market.

### **1.3 Organization of the study**

This thesis has five chapters. The first chapter provides the introduction and purpose of the study. Chapter 2 presents the related theories and literature reviews. Chapter 3 introduces the econometric methodology. The data and empirical results are presented in Chapter 4. Chapter 5 concludes the paper.