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The Determinants of Chinese Household Saving During 1978-2012

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During 1978-2012

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1. Introduction

Over the past three decades, one defining feature of the Chinese economy has been its extraordinarily high and rising saving rate. The household saving rate in China was around 40 percent in 2012. The savings rate in China is much higher than most countries of the world. It is not only higher than western countries like the United States, United Kingdom and Europe Union, but also higher than Taiwan and Hong Kong, which are areas with a similar cultural background to China's. However, the level of China's per-capita income is very low, ranking below 100th in the world according to the World Bank. It might be expected that a high per-capita income country would have a higher saving rate while a lower per-capita income country would have a lower saving rate. Why does a lower per-capita income country, China, have the highest saving rate in the world? This research project focuses on how China's household saving ratio changed during the 1978-2012 period and what factors caused the changes.

Figure 1   Household Saving Ratio

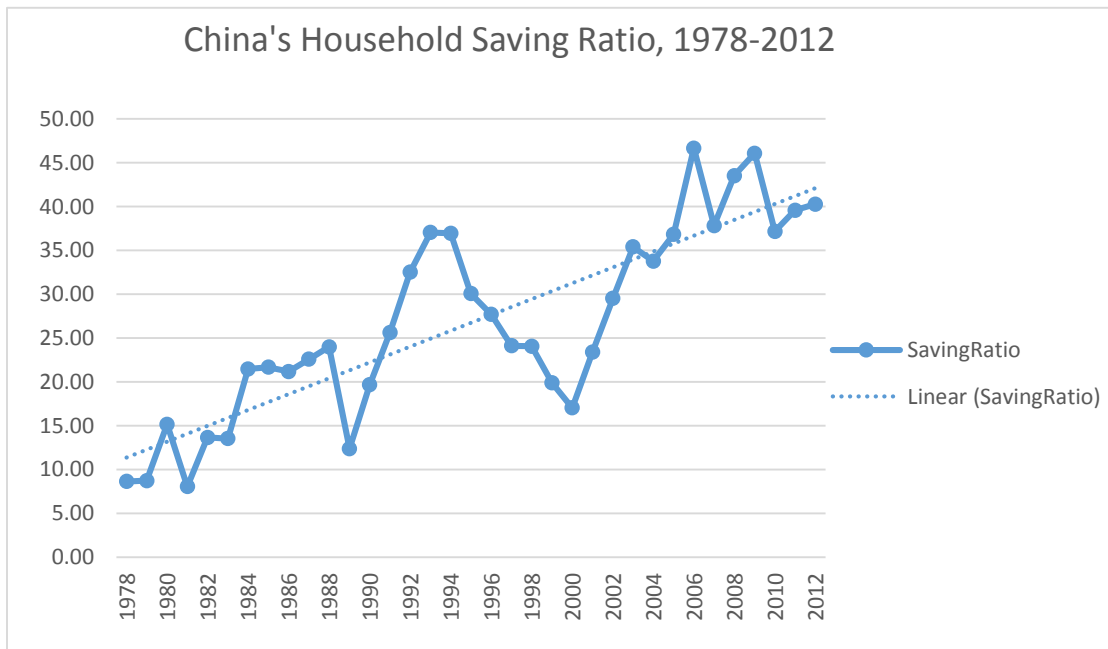China's Household Saving Ratio, 1978-2012

Figure 1 shows the Chinese household saving rate during this time period. There is a clear increasing trend during this time period and the rate fluctuates in different time period.

The Chinese economy could be divided into three time periods: before 1949, during 1949-1978 and after 1978. Before 1949, China never launched into rapid, modern economic growth. During 1127-1911, Chinese traditional society was overwhelmingly rural, with over 90% of the population living in the countryside. Families relied on traditional agriculture. But the average product per capita was very low, many farmers barely produced enough to feed their families. Households did not have enough money to save. After the collapse of the Qing dynasty and the 1911 Revolution, China entered a new political and economic stage. The Nationalist government was able to begin building the institutional framework for development. However, the beginning of industrialization only lasted for about 20 years until the Japanese invasion in 1937. Few of these activities to develop industry came to fruition during this period, but groundwork was laid for the future. During 1937-1949, World War I and Chinese Civil War destroyed the Chinese Economy again. After the People's Republic of China was established in 1949, the Chinese economy was wrenched out of its traditional framework and completely reoriented. During 1949-1978, under Maoist socialism, the economic system in China was "command economy". Market forces were severely curtailed and government planners allocated resources directly through their own commands. Individuals' incomes in the whole society were very low and equally. And the government had more power to decide where the wealth should go. During this time period, the saving ratio in China kept below 5 percent sometimes negative according to Modigliani's research result. China launched economic reforms at the end of 1978. China moved away from the command economy and adopted a functioning market economy by the mid-1990s. The Chinese Economy grown rapidly and individuals have varies of ways to

increases their wealth. Individuals' income increased dramatically and therefore they have more money to save. This is also the reason why 1978 is chosen to be the starting year to study.

The main theory which guides this project is the Life-Cycle Hypothesis. The Life-Cycle Hypothesis states that consumption depends on individuals' permanent income and their age stage in the life cycle. Saving is a portion of income, so the Life-Cycle Hypothesis is also an implicit theory of saving. Modigliani used this theory to analyze the household saving in China with the data during 1954-2000 period. He concluded that the rate of growth of income and the demographic structure are the major determinants of the rate of private saving. After 2000, China experienced important developments and events. The price of housing increased rapidly from 2000 and the global financial crises happened from 2007 to 2009. This project extends Modigliani's research using the data after 2000 to examine whether his conclusions extend to the more recent period. Also, this project addresses how the One-child Policy and pension system changes affected Chinese saving behavior.

High savings in China is an important economic issue not only for the economy of China but also for the world. A high savings rate in China could bring their current account into surplus, which could help reduce foreign debt, stabilize currencies, and reduce the risk of financial crisis. On the international capital market, high savings transform countries from net borrowers to net lenders. On the other hand, for the developing world to be lending large sums on net to the mature industrial economies is quite undesirable as a long-run proposition. In the major industrial countries, capital-labor ratios are already high. In contrast, most developing countries have younger and more-rapidly growing workforces. Industrial countries as a group should be running current account surpluses and lending on net to the developing world to increase their stock of capital. Savers in the industrial countries would potentially earn higher

returns and enjoy increased diversification, and borrowers in the developing world would have

the funds to make the capital investments needed to promote growth and higher living standards.

This project starts in section 2 with explanation of the main model and an alternative

model of saving. Section 3 is literature review of previous research addressing the Chinese

saving rate. Section 4 has detailed explanations of each variable used in this analyses. Section 5

is a data summary. Section 6 presents results of the econometric analysis of the data. Conclusion

and discussion are in Section 7.

2. Theoretical Framework

2.1 The Life-cycle Hypothesis Model

The life-circle model states that consumption is based on permanent income rather than

current income. Consumption depends on individuals' permanent income and their stage in the

life cycle. The life-circle model assumes that consumption remains relatively stable and the goal

of individuals' consumption and saving behavior is to maximize lifetime utility, subject to a

lifetime budget constraint. Basically, in people's young age at school, their consumption is

higher than their income. They may receive money from their parents to afford their

consumption which is higher than income they could earn. At the middle-age stage when people

have jobs, their income rises. With increases in their consumption slower than increases in their

saving. When people retire, they live off the savings they accumulated in middle-age.

In Modigliani's Nobel lecture (Modigliani 1989), he demonstrated that the fundamental

and novel implication of the Life-Cycle Hypothesis Model is that the national saving rate is

unrelated to per-capita income but depends instead on the long-term rate of income growth.

Individuals choose to maximize utility derived from their life resources by allocating them

optimally between current and future consumption. Two key assumptions are 1) stable preferences for the allocation of resources over a finite life are independent of the size of life income and 2) a stable path of resources by age will give rise to a stable age pattern of the saving-to-income and wealth-to-income ratio.

Suppose aggregate income grows in time at a constant percentage g. Consider the case when the growth is due to population growing at that rate, while per-capita income remains constant. Then as time goes by, each age group, aggregate consumption and income all rise at the rate g, but consumption-to-income, saving-income and wealth-income ratios are constant. For any given g, the national wealth is proportional to income: $W = wY$, where w is a constant that is dependent of income. Since saving is the growth of wealth, Modigliani infers:

$$\frac{S}{Y} = \frac{\Delta W}{Y} = w * \frac{\Delta Y}{Y} = w * g$$

Where S is saving, Y is income and W is wealth. $g = \frac{\Delta Y}{Y}$ is the income growth rate. Therefore, the saving ratio is independent of income. Instead, it is related to the income growth rate. As long as income is growing fairly steadily, the saving function implied by the Life-Cycle Hypothesis can be written as

$$\frac{S}{Y} = s_0' + S' * g + e$$

where s_0' should be close to zero, S' should be significantly positive and e is a random error.

In Modigliani's Nobel lecture (Modigliani 1989), according to Life-Cycle Hypothesis model, he pointed out that the saving rate increases with a steady population growth.

2.2 An Alternative Model-The Keynesian Consumption model

The Keynesian Consumption model states that current consumption is portion of current income. The function could be expressed as following,

$$C_t = c_a + c_{mpc}(1 - \partial)Y_t$$

C_t is the current consumption, c_a is the consumption that is independent from the income, which is greater than 0. c_{mpc} is the marginal propensity to consume which is at the range of 0 and 1. ∂ is the tax rate. Y_t is current income. This model implies that consumption and saving related to current income.

In Modigliani and Cao's (2004) article, they state that it is generally believed that this model can be used to explain the saving behavior of the relatively poor countries. People with low incomes are not able to afford the sufficient level of saving when they are young and productive to support their consumption in old age. But China is not a poor country, so this model is unlikely to explain Chinese saving behavior.

3. Literature Review

Modigliani and Cao's (2004) literature is the main guide of this research project. In Modigliani and Cao's article, the factors they tested include the long-term rate of income growth (15 years), dependency ratio (E/M), growth form previous year minus long-term growth, inflation and reciprocal of per-capita real income. According to the Life Cycle Hypothesis, the national saving rate is unrelated to per-capita income but depends instead in the long-term rate of income growth. Life Cycle Hypothesis assumes that the saving rate increases with a steady population growth so the demographic structure affects the saving rate. The demographic variable measures as the ratio of employed population and the number of minors (retired and too young to employ).

Life Cycle Hypothesis assumes a lasting and stable income growth trend, measuring the growth trend for every year and using the average annual rate of growth over the previous 14 years. Inflation also have impact on saving behavior. Modigliani and Cao conclude that the major determinant of the saving rate is the growth rate of income and the demographic structure of economy.

Liu & Hu's (2013) literature is based on the Keynesian hypothesis and Life-cycle hypothesis, variable includes per capita income and income growth, dependency ratio. They also test real interest rate, inflation rate, population average life expectancy, proportion of food consumption expenditure to total consumption expenditure. The empirical result shows that income has a positive impact on household saving rate to test the Keynesian hypothesis. However, the result fail to pass the significant of income growth and dependency ratio. The article states that the life-cycle theory explanation of the steady increase in China's household saving rate needs further study and test. This article also test the inflation rate and real interest rate. This article examined in detail the impact of expected future income growth, future income uncertainty and average life expectancy on China's saving behavior. The results show that increase in expected income growth would lower the saving rate while increase in future income uncertainty and longer life expectancy would increase saving rate.

The life-cycle model indicate that population aging will cause people spend more money on taking care of olds therefore saving rate will decrease. However, in China, one-child policy lower the birth rate, at the same time, population aging appears in China. The saving rate in China is high. Through the model built in this article, it conclude that birth rate have negative effect on saving rate while population aging have positive effect on saving rate. People have less pressure

on taking care of the old people and investment more on their children, the saving rate increases. (Wang, 2010)

Chen&Qiu's (2011) research paper builds a life-cycle Bewley model which incorporates the rising housing price and endogenous housing demand, in order to investigate on the effects that housing price may have on household saving rate and wealth inequality in urban China. Through the model built in this article, they conclude that housing price is one of the main reason that life-cycle model couldn't explain Chinese saving rate. The rising housing price will cause individuals saving more in their young age.

Horioka&Wan (2007) find the conflict result from Modigliani and Can's research with Kraay's (2000) research. In their paper, they conduct a dynamic panel analysis of the determinants of the household saving rate in China using a life cycle model and panel data on Chinese provinces for the 1995-2004 period from China's household survey. Based on the life-cycle theory, the explanatory variables include the income growth rate, the young dependency rate, the old dependency rate and total dependency rate. The added factors are the one-year lag of the saving rate, the real interest rate, the rate of change of CPI and a dummy variable. Through testing, they found that China's household saving rate has been high and rising and that the main determinants of variations over time and over space therein are the lagged saving rate, the income growth rate, the real interest rate, and the inflation rate. However, they found that the variables relating to the age structure of the population have the expected impact on the household saving rate in only one of the four samples. These results provide mixed support for the life cycle hypothesis (with the positive and significant coefficient of income growth supporting the life cycle hypothesis and the mixed performance of the demographic variables being unfavorable to the life cycle hypothesis), provide some support for the permanent income

hypothesis (with the positive and significant coefficient of the interest rate supporting this hypothesis).

4. Variables

4.1 Household Saving ratio

Using the method Modigliani used in his research, household saving measures the annual increase in personal wealth that results from personal saving. Estimated calculations is to show the increase in personal wealth, which contains two components: the increase in the holdings of a list of intangible assets and the increase in the stock of some major tangibles. Household saving is calculated by change in (currency + deposit) + bonds (new issues) + individual investment in fixed assets.

The other theoretical method is that personal saving is measured as income minus consumption. The urban household saving ratio is calculated by the ratio between per capita disposable income minus per capita consumption spending, and per capita disposable income. The rural household saving ratio is calculated by the ratio between rural per capita net income minus per capita consumption spending, and per capital net income. The saving ratio of all households is calculated by the weighted average mean value of the urban and rural saving ratios with the ratio of their respective population. Since the population in urban area record on the yearbook may less than the population in the real word. In my opinion, this might by the reason that there exists negative number and the overall saving rate is lower than the saving rate calculated by this method.

4.2 Long-term per-capita Income Growth Rate

Based on the Life-cycle Hypothesis theory, long-term per-capita income growth rate rather than per-capita income is the main determinant of saving rate. I first calculated the 5-year long term income growth rate, 10-year long term income growth rate and 15-year long term income growth rate to see whether there exits different effect on saving behavior. After running regression equations, the result shows that 15-year long term income growth rate has largest impact on saving behavior. Therefore, I choose a 15-year per-capita income growth rate to measure the long-term income growth rate. 15-year long-term per-capita income growth rate is measured by the average rate of income growth over the fifteen preceding years.

This variable is expected to have a positive relationship with household saving. Since people have more money to save when their income have steady growth in the long run.

4.3 Demographic structure

In Modigliani's Nobel lecture (Modigliani 1989), he pointed out that the saving rate increases with a steady population growth. However, population growth in China is not increasing steadily. What truly affects the saving rate is demographic structure.

China is the world's most populous nation with 20% of the world population. In order to control China's population problem, Chinese government formally adopted the "One Child Policy" in 1980. The policy states that a family is only allowed to have one child. One Child Policy changes the demographic structure in China. China has the advantage of a young population with low dependency rates. The dependency rate is an age-population ratio of those typically not in the labor force and those typically in the labor force. It is used to measure the

pressure on productive population. Both young and old dependents represent a relatively small share of the population. However, the One-Child Policy will cause the number of retirees and the future elderly dependent ratio to increase particularly quickly in 2020s and 2030s. The One-Child Policy has shaped China in many important ways such as possibly in saving behavior and has had subsequently important impacts on its economic development.

Demographic structure is another main determinant of household saving. The ratio of number of employed people and number of people under 14 years old are used to measure the demographic structure. It could explain how One Child Policy affected household savings in China. This variable is expected to have a positive relationship. One reason is that the consumption of families with one child will decrease so that the family could save more for retirement because of fewer children. The other reason is that parents with fewer children would choose to save more in their middle age to support themselves in older age.

4.4 Inflation

In the presence of significant inflation, one must distinguish between current and real values. The later are conceptually measured in constant prices. In this project, all variables are on real values. Inflation is measured at Preceding Year=100. Inflation can affect saving behavior through a variety of channels, including deviations from rational behavior which result from difficulties of understanding its real implications.

4.5 Difference

Difference measures deviation of each year's income growth rate minus long-term income growth rate. This is a rough and simple way of measuring the transient component.

4.6 Housing price

At the end of 2000s, housing price began to rise and has been rising dramatically in recent years. During 2003-2009, the average housing price in urban area is increased more than one time. Housing price in several big cities such as Beijing, Shanghai is even higher than the price family could afford. Young families have to decrease their consumption and increase their household saving in order to buy house. On the other hand, wealthier families already have houses would choose to buy more house as one way of investment. Housing price should be taken into consideration as a main factor which may affect household saving.

4.7 Pension

The pension system in China has been largely a fragmented "pay-as-you-go" system operated by individual companies, through the government. In the mid-1980s, the pension system initiated experiments to pool pension assets and put them under control of local and provincial governments. Pension distribution rapidly grew in the 1990s. With more confidence in their future pensions, individuals would choose to consume more in the present and save less for the future. Therefore, there is expected to be a negative relationship between the pension variable and saving rate.

5. Data Description

The data from 1978-2000 are collected from *50 years of new China* and data after 2000 until 2012 are collected from *the Yearbook for the PRC for 2013*.

Table 1 Data Summary

	Saving Ratio	CPI	Long-term growth rate (15 years)	Long-term growth rate (10 years)	Long-term growth rate (5 years)	Dependency Ratio (E/M)	Difference	Pension	Housing Price
1978	8.62	100.7	2.89	4.13	8.36	1.13	12	18.91	
1979	8.72	101.9	3.37	4.12	10.52	1.18	8.26	22.11	
1980	15.15	107.5	4.27	5.23	13.46	1.23	12.52	20.31	
1981	8.05	102.5	4.57	6.12	12.42	1.29	3.03	21.72	
1982	13.65	102	6.19	7.83	15.09	1.33	10.18	21.43	
1983	13.52	102	6.89	8.08	15	1.42	2.78	24.04	
1984	21.47	102.7	7.78	10.63	16.2	1.46	17.25	25.16	
1985	21.68	109.3	8.49	11.68	16.03	1.53	7.86	31.15	
1986	21.18	106.5	9.48	13.36	17.22	1.6	4.11	35.58	
1987	22.58	107.3	10.56	14.74	11.49	1.68	4.95	37.4	
1988	23.99	118.8	11.13	14.82	14.49	1.64	4.51	41.77	
1989	12.38	118	10.92	13.29	16.02	1.71	-14.56	49.4	
1990	19.66	103.1	12.62	14.75	18.58	2.02	18.72	55.04	
1991	25.61	103.4	14.25	16.11	20.27	2.02	7.01	67.32	
1992	32.51	106.4	16.02	17.3	25.29	2.03	12.26	66.45	
1993	37.05	114.7	16.64	18.75	23.59	2.06	7.49	75.27	
1994	36.94	124.1	17.29	18.39	24.11	2.08	4.15	95.14	
1995	30.07	117.1	17.69	19.04	20.06	2.11	5.12	115.46	
1996	27.7	108.3	18.78	20.06	17.04	2.13	5.09	182.68	
1997	24.12	102.8	18.22	19.32	12.97	2.17	-10.16	328.42	
1998	24.06	99.2	18.18	18.66	8.99	2.18	-9.16	595.63	1837
1999	19.88	98.6	16.58	19.13	7.34	2.23	-15.51	1197.44	1804
2000	17.03	100.4	15.69	16.29	9.26	2.48	-12.73	1517.57	1864
2001	23.38	100.7	15.82	15.72	10.56	2.54	-0.23	1987.4	2033
2002	29.52	99.2	15.97	14.66	11.72	2.55	1.7	2636.22	1919
2003	35.4	101.2	15.96	13.8	14.93	2.58	-0.44	2655.91	2241
2004	33.78	103.9	16.66	12.34	18.56	2.66	-9.79	3116.08	2235
2005	36.83	101.8	15.84	11.96	14.31	2.82	3.15	3698.86	2829
2006	46.67	101.5	16.67	12.95	16.33	2.89	17.07	4361.78	3131
2007	37.83	104.8	14.54	11.78	19.56	2.94	-18.12	5447.16	3351
2008	43.53	105.9	14.64	13.45	14.47	3	11	6804.29	3219
2009	46.08	99.3	14.75	15.64	12.07	3.08	8.27	7606.68	3671
2010	37.16	103.3	12.8	14.7	16.09	3.42	-19.3	9130.62	4099
2011	39.58	105.4	12.65	15.31	10.96	3.45	9.11	11109.4	4182
2012	40.27	102.6	13.22	15.2	6.36	3.44	3.32	12585.52	4306

Figure 2 Household Saving Ratio and Long-term Income Growth Rate

Chinese Household Saving Ratio and Long-term Income Growth Rate During 1978-2012
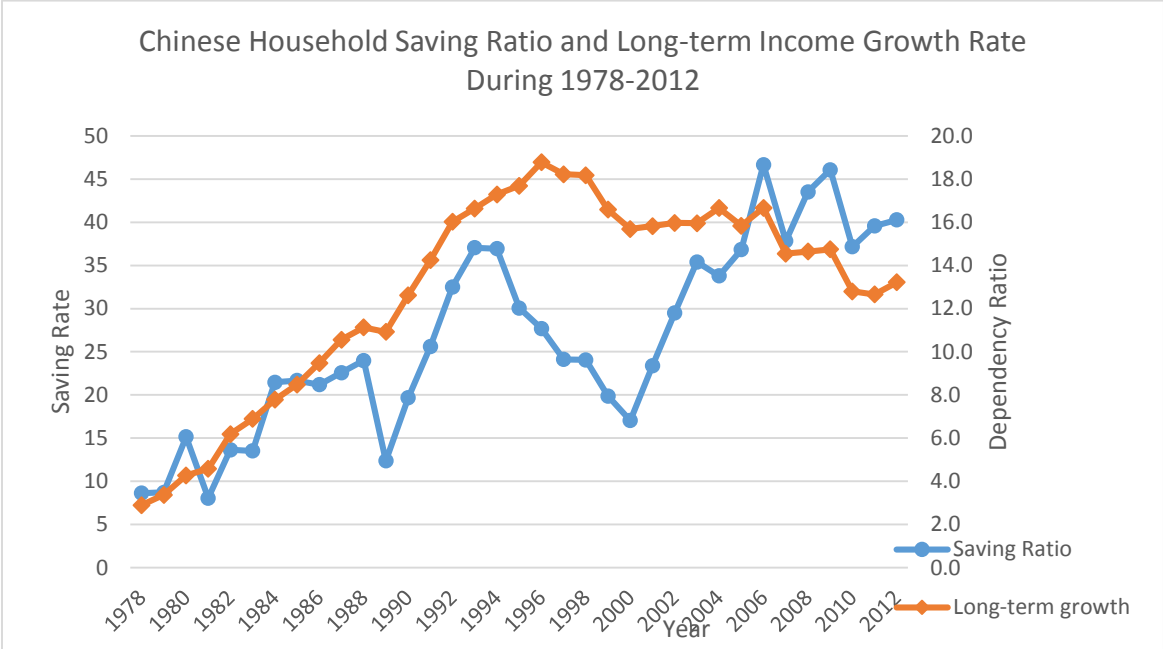
As figure 2 shows, the line with circle mark is household saving ratio and the other line with square mark is long-term income growth rate. From this graph, it can be seen there is a positive relationship between the saving rate and the long-term growth rate.

Figure 3 Household Saving Ratio and Dependency Ratio

Chinese Household Saving Rate and Dependency Ratio During 1978-2012
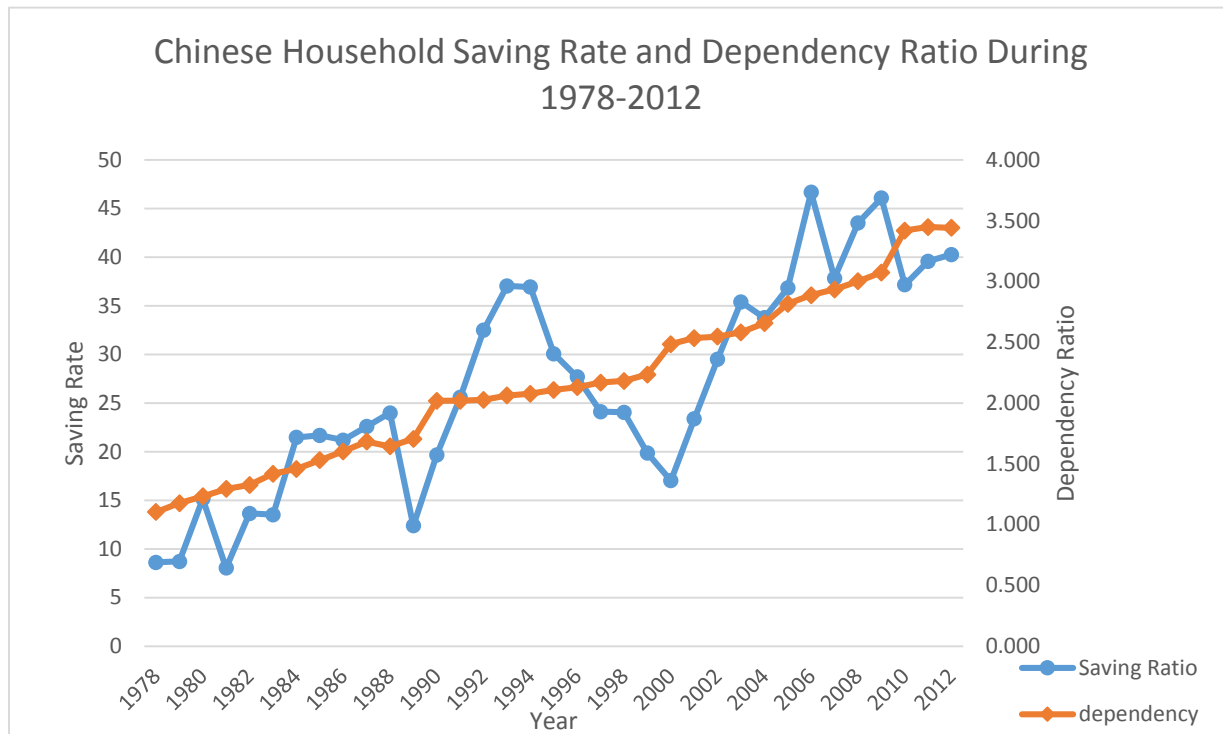
As the figure shows above, dependency ratio keep increasing during 1978-2012. The trend of household saving ratio also keeps increasing. There should be positive correlation between these two variables.

Housing price: Due to data availability, housing price in this project only collected from 1998-2012.

As the data in the table 1 shows for pension and housing prices, these measurements display nearly consistent increases over the period.

6. Estimation

The following expression presents the basic equation of the model which is used for estimation. The variables are summarized in table 2.

$$HHS = \beta_0 + \beta_1 L\_g_{inc} + \beta_2 r_{depen} + \beta_3 inflation + \beta_4 differ + \beta_5 \ln(\text{Pension}) + \beta_6 \ln(Phouse) + u$$

<u>Table 2 Variable Summary</u>

<u>Dependent Variable:</u>

HHS	Household Saving Ratio

Independent Variables	Proxy	Expected Relationship with Dependent Variable
L_ginc	Long-term income growth rate	positive
r_{depen}	Dependency Ratio	positive
inflation	Inflation	unknown
differ	each year's income growth rate minus long-term income growth rate	unknown
Phouse	Housing Price Nature log	positive
Pension	Pension Nature log	negative

6.1 OLS Testing Method

      The OLS method is used to econometrically estimate the relationship between household saving ratio and factors which might affect the ratio. Regressions are conducted with different variable combinations. Due to data availability of housing price, regressions without housing data contain 35 observations and regressions with housing data only contains 15 observations. Pension data and housing data have adjusted to the inflation. For the time series data in this project, the Durbin-Watson statistic used to test for serial correlation. It shows that positive serial-correlation exists in the models. All regressions results presented here have been corrected for these serial-correlation. The results are shown in Table 3.

Table 3 Regression Result

	35 observations						15 observations	
	#1	#2	#3	#4	#5	#6	#7	#8
R square	0.81	0.94	0.94	0.95	0.77	0.82	0.85	0.98
Long-term income growth rate (15 years)	0.21** (0.26)	0.37** (0.14)	0.39** (0.14)	0.39** (0.13)	0.38** (0.13)	0.21 (0.26)	5.45** (1.93)	0.54 (0.91)
Dependency Ratio (E/M)	4.93** (2.35)	4.86** (1.27)	3.58** (1.75)	-1.07 (3.25)		10.53* (5.81)	22.23 (15.39)	4.9 (5.89)
Inflation			-0.11 (0.11)					
Difference		0.42* (0.048)	0.43** (0.049)	0.46** (0.04)	0.45** (0.046)			0.47** (0.31)
Housing Price							11.14 (18.31)	-9.72 (7.02)
Pension				1.53* (0.78)	1.29** (0.28)	-1.45 (-1.05)		
Constant	-1.05	-6.29	6.21	4.02	-4.15	-3.7	-209.43	58.95

Standard errors show in parentheses

**Statistically significant at 5% level

*Statistically significant at 10%

The regression result shows that, generally, Long-term income growth, dependency ratio, difference between long-term growth rate and each year are statistically significant at the 5% level. Inflation has weak explanatory power on savings. From number 2 regression equation, we could interpret that one percent point increasing in long-term income growth cause 0.37 percent point increase in household saving, which is not great economics significance. One percent point increasing in dependency ratio cause 4.86 percent point increasing in household saving rate, which is an important economics significance. One percent increasing in deviation of long-term income growth rate and short term income growth rate would cause 0.42 percent point increase in household saving ratio. The R-square reach to 0.94, which is a relative high value.

When adding pension data into regressions, dependency ratio is not statistically significant. Number 5 regression equation seems like a good regression to concern. However, the sigh of pension is positive, which is not consistent with previous hypothesis. We could not see a reasonable relationship as we expected from the test when adding pension data. The result equations 4, 5 and 6 suggest there is a degree of multicollinearity among the pension, Long-term income growth rate, dependency ratio and difference variables.

When adding housing price data into regressions, most coefficients are not statistically significant due to the limited housing price data. From number 7 regression equation, we could infer a positive relationship between household saving ratio and housing price. However, it is not statistically significant from the test. The test could not help to conclude the relationship between household saving ratio and housing price when housing price is added.

7. Conclusion

Based on the test of my sample data from 1978-2012, it keeps consistent with what Modigliani concluded that long-term income growth rate and demographic structure are two main determinants for the household saving rate. However, it can be seen clearly from the regression that demographic structure is an economic significance factor as well as long-term growth rate. This is due to the special policy in China: One child Policy. Since the Life-Cycle Hypothesis is a theory based on western economic world, when analyzing the saving puzzle in China, the background in China would affect the result.

In the test, pension and housing price was failed to explain the expected changes of saving ratio by using the OLS method. However, when analyzing the changes of household saving ratio, there is clearly a huge increase from 2000 to 2004 while the increases of long-term household saving ratio and dependency ratio are flat. After 2000, the obvious change in economic world in China is that housing price began to change dramatically. The housing price in China increased from 2112 yuan per square in 2000 to 4681 yuan per square in 2009. The result in this research is consistent with Chen&Qiu's (2011) conclusion that housing price is one of the main reasons that the life-cycle model couldn't explain Chinese saving rate. On the other hand, the rising housing price will cause young families to save more but cause wealthy families to buy a house as an investment. In the aggregate level, the percentage of these two kinds of families and how much they affect the aggregate household saving ratio is unknown. Due to the data limitation and undergraduate level of econometric technology, the effect of housing price on Chinese saving behavior should be developed in future research.

Similarly, the pension system initially covered all over the country from mid-1980s and growth rapidly in 1990s. Considering other factors including long-term and short-term income growth, dependent ratio kept increasing during this time period, we could infer that the development of the pension system affected the falling of household savings in mid 1980s and 1994. Since pension kept increasing rapidly after 2000, the effect on saving was not shown in the test obviously when adding all other variables.

Based on the conclusion above, the main changes of Chinese household saving behavior could be explained during the period 1978-2012. Obvious rising from 1990 was the effect of One Child Policy. The One Child Policy was published in 1980. The number of child in families was obviously decreasing in 1990, household saving increased under the positive relationship with dependency ratio. Household savings kept increasing until 1994 which was due to the development of social security. Individuals started to rise their savings again in 2000 because housing price increased dramatically. Financial crisis also influenced individuals saving behavior in 2009, they increased household saving rate again.

The Life Cycle Hypothesis explained how long-term income growth rate and demographic structure affect Chinese household saving. Other factors which have special development trend in China such as housing price and pension system in this project are not explained well by the theory.

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