



Analysis on the Causes of High Savings of China's Households

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Abstract. The rapid growth of China's household saving deposit has caused the government and the great concern of society. High savings is not conducive to the economic development of China. Therefore, research on the growth of China's resident savings to solve a series of problems brought by high savings is very necessary. This paper adopts the method of combining qualitative analysis with quantitative analysis. Through the comparison with American household savings rate in 2011-2020, it can be seen that Chinese household saving for a higher level, and GDP growth is related to its height, the correlation coefficient is close to 1. In addition to the social factors of population aging, the health care system, housing system, education system also cannot be ignored, the uncertainty of future income will also affect our country's household savings rate.

Keywords: Household Saving, Income, Investment, Population Aging, Medical System

1 Introduction

Over the past few decades, the balance of savings deposits of urban and rural residents in China has risen substantially, and the continuous and rapid growth of savings deposits has aroused extensive attention from the government and society. In a broad sense, household savings refers to the surplus of household disposable income minus household consumption in a certain period, which is shown as the holding of various assets [1]. Bank deposits are the main form of savings for Chinese households. In recent years, the balance of urban and rural residents' savings has been rising, and households' savings deposits have been growing rapidly. In the 10 years from 2011 to 2020, the growth rate reached 169.5%, with an average annual growth rate of 10.4%, while the GDP grew at an average annual growth rate of 7.7% during the same period, a difference of 2.6%. The growth rate of savings deposits was higher than the economic growth rate. By the end of December 2020, the balance of household savings in China's financial institutions had reached 9.259858 trillion yuan [2].

The rapid growth of Chinese household savings and the large balance of savings have aroused great concern from the government and society. On the one hand, the high growth of savings leads to a decrease in household consumption. This phenomenon of high growth in savings is worrying under the situation that China's economic growth

needs to be driven by consumer demand. On the other hand, as most of China's household savings are held in the form of bank deposits, the rapid growth of household savings leads to the concentration of risks in commercial banks, which is not conducive to the healthy and stable development of China's financial system and even the whole national economy. In addition, excessive household savings also caused a large amount of idle funds, resulting in potential losses that are difficult to estimate. So why do household savings continue to increase at a high rate? This paper analyzes the reasons for the phenomenon of high savings among Chinese residents in order to better address the causes of China's high savings rate in the future.

2 Stylized facts of China's high household saving

2.1 Definition of household savings

Savings is an important variable in macroeconomic analysis. National savings is divided into three parts: household savings, enterprise savings, and government savings. Household savings represents the level of individual (household) savings. The System of National Accounts (SNA) defines savings as the balance of all current receipts and expenditures in the income and expenditure accounts of resident institutions. According to the definition of savings by SNA, household savings is the balance item after summarizing all current income and expenditure in the household income and expenditure account. Simply put, savings equals income minus consumption. Household savings, namely household income after subtracting household consumption surplus.

2.2 The total amount of household savings in China grows rapidly

China's household savings has been in a trend of rapid growth. In 1978, household savings were only 21.06 billion yuan, and in 2020, it reached 92,598.58 billion yuan, an increase of nearly 4400 times in 40 years. Meanwhile, the growth rate of household savings has greatly outpaced that of household income. We take the last decade as an example. According to the National Bureau of Statistics of China (NBS), from 2010 to 2020, the growth rate of the balance of savings deposits of urban and rural residents reached 169.5%, with an average annual growth rate of 10.4%, while the GDP grew at an average annual growth rate of 7.7% during the same period, with a difference of 2.6% [1]. In addition, we can conclude from Figure 1 that almost every year, the growth rate of the balance of savings deposits of households is greater than the GDP growth rate. In some years, the growth rate of the balance of savings deposits of households is much greater than the GDP growth rate, and the difference between the two was once more than 10%. Household savings deposits grew faster than the economy.

The comparison between the growth rate of household savings and GDP growth rate from 2011 to 2020

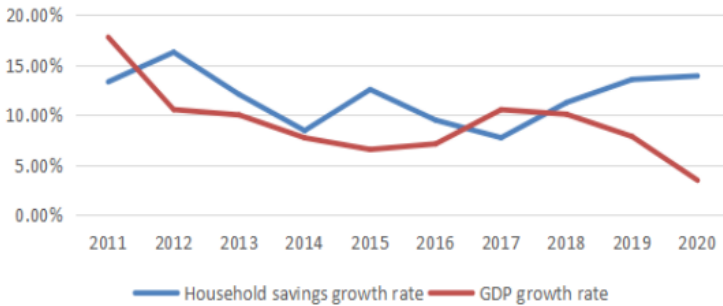


Fig. 1. The comparison between the growth rate of household savings and GDP growth rate from 2011 to 2020 [2]

2.3 China's high household savings rate

The long-term growth rate of household savings balances is higher than the GDP growth rate, which will inevitably bring about a sharp rise in savings rates. We calculate the household savings rate by the ratio of the year-end balance of RMB savings deposits of urban and rural residents to GDP. Since the reform and opening up, China's household savings rate has been on the rise for a long time. From 2010 to 2020, China's household savings rate has been above 70% and has been on the rise. By 2020, China's household savings rate has reached an astonishing 90.26%, the highest in history.

2.4 Comparison with the United States

In order to record the characteristics of China's household savings based on international experience, we use FRED and NBS data to compare China's household savings rate from 2011 to 2020 with that of the United States. Because of the different data provided by the NBS and FRED, household savings rates are calculated differently in the two countries. The U.S. savings rate is the ratio of household savings to disposable income. We can see from Figure 2 that China's household savings rate is much higher than that of the United States. 2020 is the latest data on savings rates of the two countries. In 2020, due to the impact of the epidemic, the savings rates of China and the United States increased to varying degrees, but China's savings rate (90.26%) was about 5.5 times that of the United States (16.56%) [2, 3]. The huge difference between the two countries is shocking. The factor of traditional consumption habits cannot fully explain the high saving rate of Chinese households, and the underlying reasons need to be further analyzed and studied below.

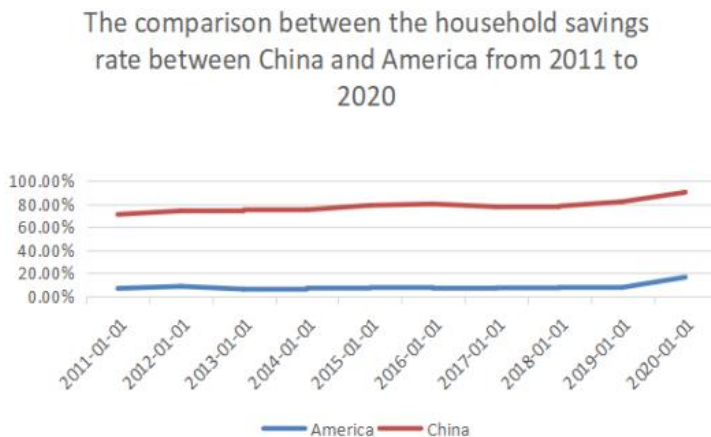


Fig. 2. The comparison between the household savings rate between China and America from 2011 to 2020 [2, 3]

3 The causes of high savings of China's households

3.1 The income level of residents

Theoretically speaking, the most important factor affecting the scale of resident savings should be the income level of residents [4]. In this chapter, gross domestic product (GDP) is taken as the index to measure the level of household income. Residents will save only when their income reaches a certain level. The Keynesians investigated the change law of consumption tendency from the perspective of psychological law and put forward the "law of diminishing marginal consumption tendency". That is, with the growth of people's income, people's consumption also increases, but the proportion of consumption expenditure in income continues to decrease, because people's increased income is not fully consumed [5]. The marginal propensity to consume (MPC) refers to the ratio between the increment of consumption ΔC and the increment of income Δy , that is, the partial ratio of one unit of increased income used to increase consumption. The formula of marginal propensity to consume is: $MPC = \Delta C / \Delta y$ or $\beta = \Delta C / \Delta Y$, $0 < MPC < 1$ [6]. According to the Law of Diminishing Propensity to Consume, the higher the income level, the lower the Marginal Propensity to Consume, the less consumption, and the more savings. This is the main logic of this reason.

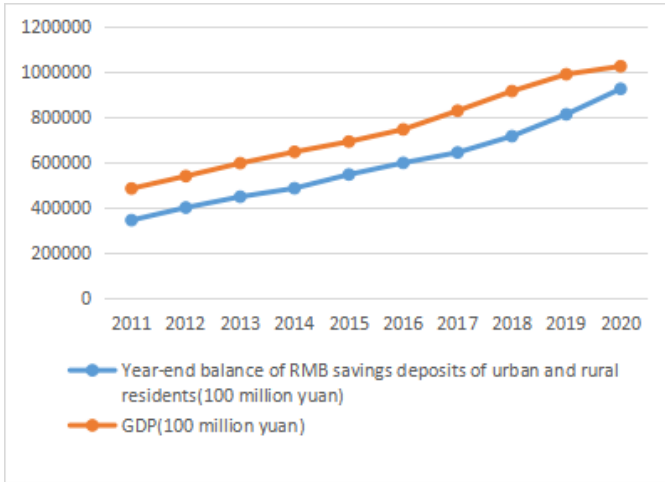


Fig. 3. The comparison between Year-end balance of RMB savings deposits of urban and rural residents and GDP from 2011 to 2020 [2]

As can be seen from Figure3, household savings in China rose with the rapid growth of GDP, and the increase range and trend are roughly the same. This suggests that they are relevant. Then we further analyze the correlation with scatter plots.

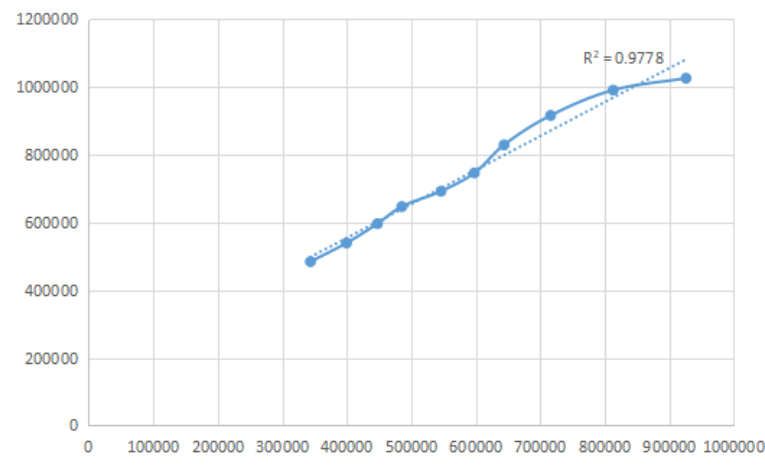


Fig. 4. The correlation coefficient [2]

All points are almost in a straight line (Figure 4), and the correlation coefficient is very close to 1, indicating that the two have a strong correlation, which indicates that the rapid growth of household savings is closely related to the rapid growth of GDP. But at the same time, we can also find that the two are not completely one-to-one correspondence, which indicates that there are other factors affecting household savings. These factors are analyzed below.

3.2 Single investment channel

The second reason is the single investment channel. Judging from the current domestic situation, investment channels are relatively single. In terms of industrial investment, industries with high returns have high barriers to entry, and most of them are monopolistic in nature. The profits of general projects are low, which is not attractive enough to attract them to invest; in terms of financial investment, my country's stock market has been in a long-term downturn in recent years. And the futures market has just started, and financial products are scarce. Therefore, for middle- and high-income earners, especially middle-income earners, they can only choose to save value before finding a suitable investment channel. Therefore, only by vigorously developing my country's capital market can we diversify my country's large-scale bank deposits on a large scale and promote the diversification and rationalization of my country's residents' financial investment.

In order to visually analyze the relationship between the relatively narrow financing channels of my country's capital market and the growth of household savings, we select the indicator "Domestic equity financing as a percentage of GDP" as a measure of the ability and willingness of my country's capital demand departments to finance through the capital market. Obviously, the higher the proportion, the more developed my country's capital market, and at the same time, the more fund-demanding departments are willing to obtain funds through direct financing rather than bank loans.

From the data in Figure 5, we can get a general trend that the higher the annual growth rate of China's household savings deposits, the smaller the "proportion of domestic equity financing in GDP". We can understand this reverse relationship in this way: When a certain year's capital demand department (such as a company) is unable or unwilling to directly finance through the capital market for some reason (such as a decline in corporate credit, or a downturn in the stock market), it can only be financed through bank loans. In the case of indirect financing, it will inevitably be accompanied by a large number of surplus funds in the residential sector that cannot be found by those who need funds in the capital market. As a helpless choice, these surplus funds can only flow into commercial banks and become residents' savings deposits for self-preservation. At the same time, these residents' savings deposits have also become a source of funds for companies to make bank loans. Therefore, it can be said that the underdevelopment of my country's capital market and the emphasis on indirect financing by the capital demand sector have promoted the rapid growth of my country's household savings.

Year	Annual growth rate of household savings deposits	Stock financing	Proportion of stock financing in GDP
2011	16.2	5814.19	1.19
2012	16.6	4134.38	0.77
2013	13.5	2802.76	0.47
2014	9.0	8498.00	1.32
2015	12.5	16362.00	2.38
2016	9.5	20297.00	2.71
2017	7.7	15536.00	1.87
2018	11.2	11378.00	1.24
2019	13.5	12539.00	1.27
2020	13.9	14222.00	1.40

Fig. 5. Annual growth rate of household savings deposits and Stock financing [2]

3.3 Social development factors

The third reason is social development factors. And we divide it into four categories.

Population aging.

Figure 6 illuminates that my country’s household savings deposits and the “proportion of the population aged 65 and over in the total population”, representing the degree of aging are on the rise simultaneously, and there is a clear positive correlation. Our explanation of this phenomenon is as follows: In an economy where the population is uncontrolled, the age structure of the population is cedar-shaped, and the total population is mainly young and middle-aged. In a one-child economy, the age structure of the population will gradually evolve into a mushroom shape, and the proportion of the elderly will rise to become the main component of the total population. The one-child policy has been implemented in China for more than 20 years. Due to the effective implementation of this policy, the phenomenon of population aging has begun to emerge, and the pension problem has become increasingly serious. It can be considered that my country's high savings is likely to be the rational choice of individuals under the changing age structure of the population.

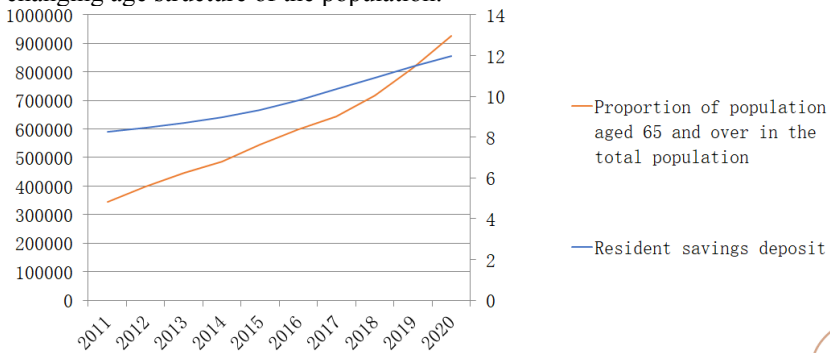


Fig. 6. The relationship between over-65 population and resident savings deposit [2]

Medical system reform.

It can be seen from Figure 7 that the savings of Chinese residents and the per capita medical expenditures of Chinese residents basically show a simultaneous upward trend. The author will explain this as follows: On the one hand, medical reform has enabled residents to gradually bear the medical expenses originally borne by the unit, and the welfare medical system has become history; on the other hand, medical reform has made the hospital a self-financing enterprise, provided by the hospital. The prices of medical services and medicines are gradually marketization, and this price is often beyond the affordability of most residents. In order to cope with potential future expenditures, residents have to hold large amounts of precautionary savings.

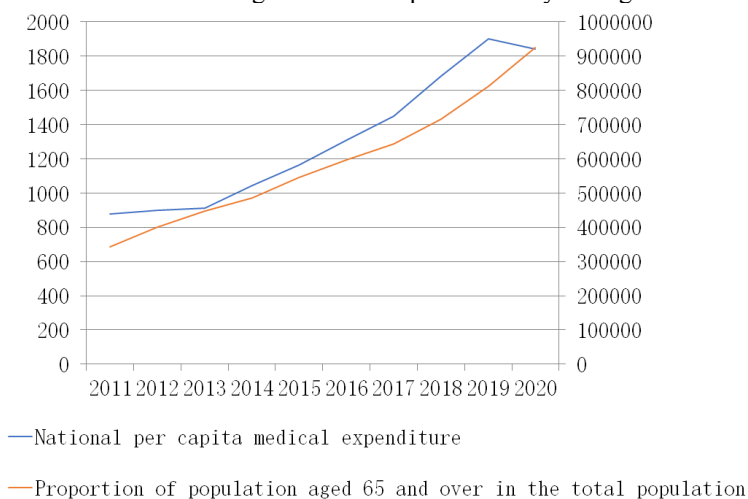


Fig. 7. The relationship between medical expenditure and over-65 population [2]

Housing system reform.

From the data in Figure 8, we can see that there is a certain positive relationship between my country's real estate price index and the balance of household savings deposits. Since my country has not fully realized the commercialization of housing distribution before 1999, there is no so-called housing price and "real estate price index", and residents do not have to save in advance for future house purchases. Therefore, it is reasonable for us to take 1999 as a starting point to analyze the correlation between housing system reform and household savings. We can understand this positive relationship as follows: Since the commercialization of housing distribution in 1999, the rising housing prices have exceeded the living capacity of residents. In the face of rising housing prices, ordinary people can only limit their consumption and increase their savings in order to realize their dream of owning a house in the near future.

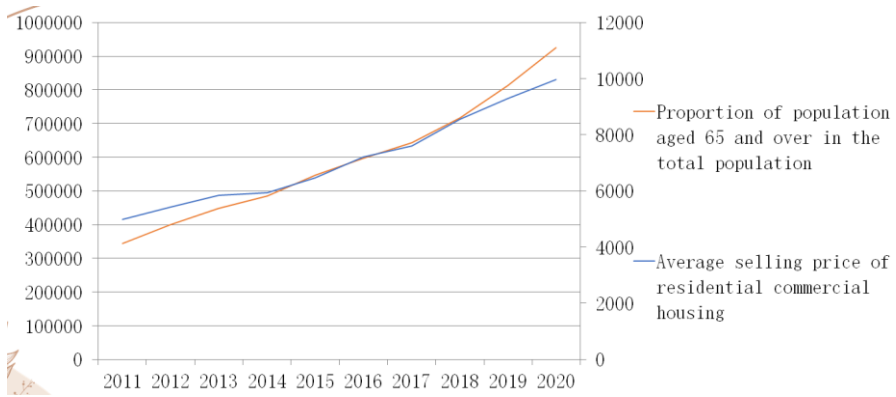


Fig. 8. The relationship between China's real estate price index and the balance of household savings deposits [2]

Education industrialization reform.

From Figure 9, we can see that there is an obvious positive correlation between the per capita expenditure on culture and education of Chinese residents and the balance of residents' savings deposits. The implementation of educational industrialization reforms (including the unification of university fees and large-scale enrollment expansion) has made higher education no longer a free lunch, and the high tuition fees of universities are not something that every family in our country can afford. In order not to delay the future of their children, many young parents frankly save money for education by opening accounts in the bank as early as possible.

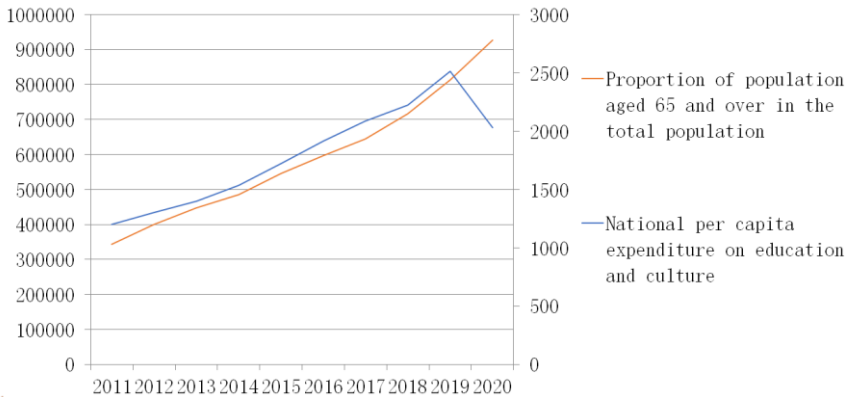


Fig. 9. The relationship between the expenditure on culture and education and the balance of residents' savings deposits [2]

3.4 The uncertainty of future income

Life cycle theory is one of the most popular theories to explain personal savings. According to life cycle theory, individuals plan their consumption and savings behavior

over a long time horizon in order to realize the optimal allocation of consumption and maximize the present value of utility over the entire life cycle [7]. Through saving at a high income and negative saving at a low income, individuals can achieve smooth or uniform cross period consumption allocation in the whole life cycle. Therefore, when an individual makes consumption decisions, he should consider not only the current income, but also the future lifetime income. In other words, consumers' future consumption plans depend on the average value of future income. On the basis of absorbing the assumptions of rational consumers and utility maximization in the long-term income hypothesis [8] and life cycle hypothesis, the preventive savings hypothesis introduces uncertainty and consumer intertemporal choice analysis. The precautionary saving hypothesis holds that the purpose of consumer saving is not only to smooth consumption in the whole life cycle to maximize the present value of utility but also to reduce the impact of uncertain events on personal life [9]. In other words, increased uncertainty will stimulate higher savings and lower consumption.

The future consumption plans of consumers depend on the expectation of future income, and the expectation of future income depends not only on the current income of consumers but also on whether consumers have confidence in future income. Generally speaking, if a consumer's income has been relatively stable in recent years, he will be full of confidence in his future and expect a higher income, so as to reduce current savings and increase consumption. Conversely, if a consumer's income has fluctuated frequently in recent years, he will be pessimistic about his future and expect to only get a lower income, so as to reduce current consumption and increase savings.

In order to intuitively analyze the relationship between the uncertainty of residents' future income and the rapid growth of savings, we select the variation coefficient of residents' per capita income level in the first year (including the year) of each year since, and observe the relationship between this index and resident savings .

As an index to measure the uncertainty of residents' income level, there is no obvious correlation between the coefficient of variation and residents savings deposit balance (Figure 10) [10]. This seems to be contrary to common sense, but it can not be used as a basis for the fact that the fluctuation of income level has no impact on residents' saving behavior. As the previous analysis shows, the level of residents' income has a great impact on Residents savings, which can even cover up other factors, such as the impact of residents' income fluctuation on residents' savings. Therefore, we should not simply compare the relative index of the coefficient of variation with the absolute index of residents' savings deposit balance, but should compare the coefficient of variation of the same relative index with the growth rate of the residents' savings deposit balance.

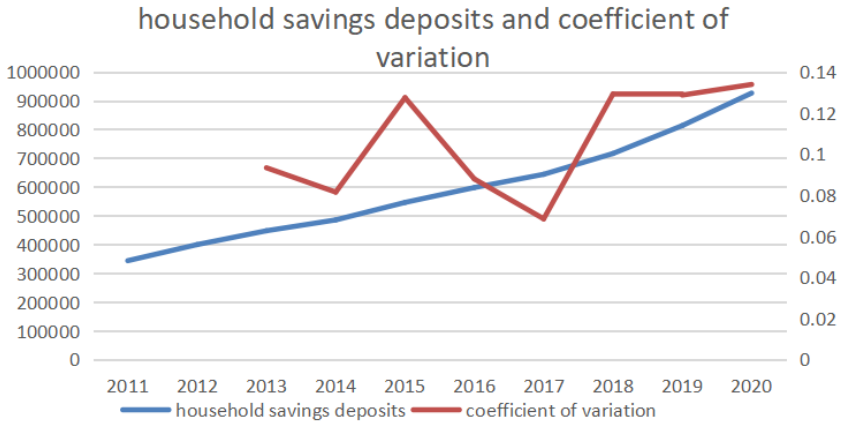


Fig. 10. The household savings deposits and coefficient of variation [2]

We find that the trend of the growth rate curve of residents’ savings deposit balance is very consistent with that of the coefficient of variation curve (Figure 11). There is a very obvious correlation between them. Therefore, we can conclude that the more intense the fluctuation in income level, the more residents tend to reduce current consumption and increase savings. Here, the increase in savings is not only reflected in the increase in the absolute amount of savings but also in the increase in the annual growth rate of the savings balance.

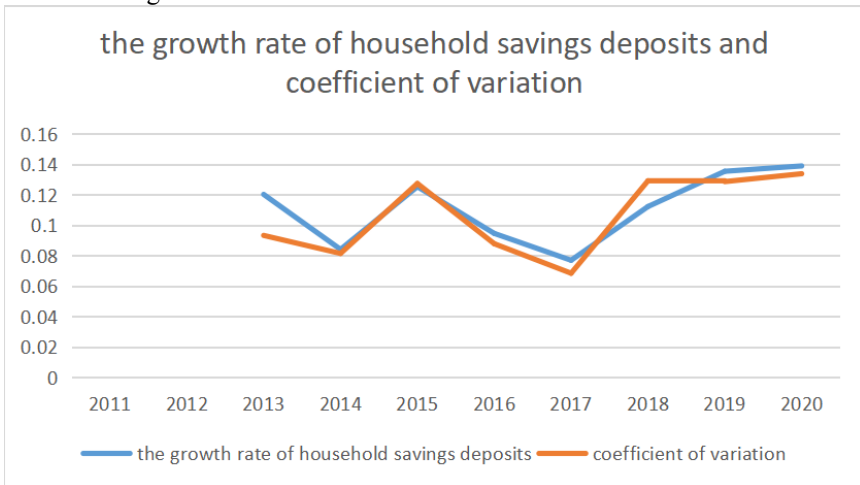


Fig. 11. The growth rate of household savings deposits and coefficient of variation [2]

4 Conclusion

Through the comparison with American household savings rate in 2011-2020, it can be seen that Chinese household saving for a higher level, GDP growth is related to its

height, the correlation coefficient is close to 1. In addition to the social factors of population aging, the health care system, housing system, and education system that cannot be ignored, the uncertainty of future income will also affect our country household savings rate.

Due to the difficulty of data collection and the different caliber of household savings rate statistics in different countries, the data for the comparison of household savings rates in China and the United States section 2.4 are slightly insufficient, and the comparison method is also slightly rough.

High savings often means lower consumption, and there is the phenomenon of a low consumption rate in China. The causes of China's low consumption rate and a high savings rate, and the relationship between them are also worth studying. However, because this article main research is the analysis of the causes of China's high savings rate, and low consumption rate is not elaborated here.

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