**Journal of Innovation and Development**
ISSN: 2958-4752 | Vol. 5, No. 3, 2023

# The Average Chinese Family How to Build an Optimal Investment Portfolio in an Uncertain Market Environment

**Yiting Jin ***

Mianzhong Experimental school, Mianyang, 612000, China
*** Corresponding author Email:** jinyiting@myzxsyxx606.wecom.work

**Abstract:** Classical portfolio theory suggests that the maximum expected return for a given level of risk can be achieved through an appropriate allocation between different asset classes. However, in reality, markets are not always fully efficient and there are factors such as market failures and speculative behaviour, which may result in investors not always achieving the expected returns. By analysing factors such as asset classes, risk preferences and investment objectives, this thesis provides strategies and recommendations to help the average household develop a personalised investment recipe, using a combination of portfolio theory and empirical research.

**Keywords:** Maximising Returns; Diversification; Long-term Investment; Risk Management.

## 1. Introduction

The investment behaviour of ordinary Chinese households has a significant impact on domestic economic development. However, in a complex and uncertain market environment, how to construct optimal investment portfolios to maximise investment returns and minimise risk remains a problem to be solved.

The per capita disposable income of Chinese residents is on an upward trend. According to the National Bureau of Statistics (NBS)[1], the per capita disposable income of Chinese residents is on an upward trend, with the national per capita disposable income of urban residents standing at RMB 39,251 and that of rural residents at RMB 16,021 in 2019.Chinese households generally have a high savings rate, in addition to an increasing number of Chinese households focusing on sustainable and socially responsible investments. Together, these factors have shaped the investment environment and behaviour of the average Chinese household. According to the 2021 Cogent Wealth Management Industry Summit and China Residents' Investment and Wealth Management Behaviour Research Report[2], residents generally have high expectations for financial returns, yet the actual financial returns are often lower than expectations.

This thesis aims to propose a series of personalised investment recommendations and strategies to help ordinary households construct optimal investment portfolios, taking into account different asset classes, risk preferences and investment objectives, and combining theoretical models and empirical studies. First, we review the basic concepts and theories of investment portfolios, and analyse the investment environment, risk preferences and investment capabilities faced by ordinary Chinese households. Next, we discuss the methods and tools for building optimal portfolios, and through case studies and empirical research, we demonstrate how different families can make investment decisions according to their own circumstances to reduce risks and maximise returns.

## 2. Portfolio Theory and Practice

Portfolio theory and practice is an important area of research on how to construct optimal portfolios to achieve expected returns. By combining assets with different risk and return characteristics, the overall portfolio risk can be reduced and expected returns increased. Research on household portfolios has shown that strategies such as diversification, risk spreading and rebalancing are essential for household investors to maximise returns and control risk.

Portfolio theory emphasises the trade-off between risk and return. By diversifying among different asset classes, investors can reduce the volatility of their overall portfolio. This means that even if one asset performs poorly, the performance of other assets may be able to make up for the loss. Additionally, rebalancing strategies are very important. By regularly adjusting the asset allocation, investors can always maintain a target proportion of their portfolio to ensure risk diversification and maximise returns.

Research on family investment portfolios suggests that individual families should construct investment portfolios according to their own risk tolerance and objectives, taking into account the characteristics of the Chinese market and the situation of the average family, the impact of the level of regional financial development on the behaviour of family financial asset allocation, and the strategies of diversification, risk diversification, and re-balancing can help family investors maximize their returns and control their risks. [3,4] Therefore it is important to assess risk tolerance and conduct quantitative risk analyses. In addition, the family investment portfolio should also take into account the long-term planning and future needs of the family, such as children's education, pension planning, etc. For example, health status is an important factor affecting the family's investment decision, and families with poorer health status are more inclined to conservative investment strategies and hold more low-risk assets.

In short, through rational asset allocation and the application of optimisation models, investors can construct optimal portfolios that suit their needs. Strategies such as

diversification, risk diversification and re-balancing are important tools to help family investors maximise returns and control risk.

# 3. Methods and Tools for Constructing Optimal Portfolios and Applicable Market Conditions

## 3.1. Types of Investment Routes, Return Characteristics and Applicable Market Conditions in China

(1) Aggressive: high risk, high yield products such as high lever derivatives, options, futures, private equity, high risk bonds, collectibles, artwork, etc.; Aggressive investments are suitable for those investors who have a higher tolerance for risk and seek higher long-term returns. These investors are usually able to withstand greater investment fluctuations and are willing to take higher risks for higher returns. If a family's financial situation permits and the investment objective is to increase in value over the long term, aggressive investment may be an option.

(2) Growth: Equities, equity funds, etc.; Growth investments are suitable for investors who wish to achieve capital appreciation and are tolerant of a certain level of risk. These investors want their investments to achieve higher growth in the medium to long term and are therefore willing to invest in growth assets with potential. Growth investments usually require a longer investment period to realise the expected returns.

(3) Balanced: property, real estate, gold, mixed funds, foreign exchange, etc.; balanced investments are suitable for investors who wish to pursue a certain level of appreciation while at the same time have some concerns about investment risk. Balanced investments usually contain different types of assets to achieve better risk diversification while maintaining a certain appreciation potential.

(4) Stable: bond funds, low-risk financial products, trusts, etc.; stable investment is suitable for investors who have a lower risk tolerance and pay more attention to the preservation of asset value and stable returns. These investors are more inclined to choose low-risk, relatively stable investment tools

(5) Conservative: low-risk, low-yield products such as treasury bonds, bank deposits, savings-type life insurance, capital-protected financial products, and currency funds. Conservative investment is suitable for investors who have very low risk tolerance and pursue asset preservation and fixed income. These investors usually choose low-risk, stable return investment products such as treasury bonds and savings deposits.

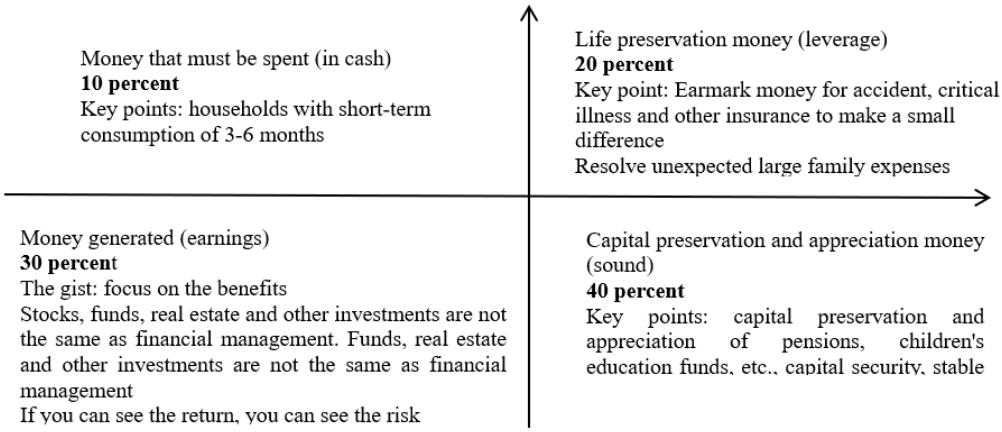



**Figure 1.** Standard & Poor's Household Asset Allocation Chart

According to the 2019 New Middle Class Family Consumption and Finance Report released by the 21st Century Business Research Institute[5]. Among ordinary Chinese households, 31 percent of their income comes mainly from funds or wealth management products, and 30.5 per cent mainly from investment property. Most new middle-class families have made a profit from investment and wealth management, but the returns are generally not high, with investment and wealth management returns ranging from 0-4%. The report points out that houses and children are the two major expenditure items of the new middle-class families, and with the increase in income, families' investment in children's education also increases. On balance, the new middle-class people are under greater expenditure pressure. In terms of expenditure structure, housing and children's education are the main burdens of new middle-class families. The report also pointed out that in 2019, 12.1 per cent of new middle-class families have no new savings, and 18.1 per cent of new middle-class families' new savings account for less than 20 per cent of their annual income. In terms of investment choices, funds and financial products, real estate, insurance products and stocks are the main investment options for new middle-class families in 2019. The survey showed that 65.3% of respondents chose funds and financial products, 63.2% chose real estate, 41.3% chose insurance products and 31.1% chose stocks.

To sum up, among the new middle-class families, part of their income comes from investment in funds or financial products, and they also focus on investment in real estate. The family's expenditure is mainly focused on house and children's education, and with the increase in income, the investment in children's education also increases accordingly. In terms of investment choices, funds and financial products, real estate, insurance products and stocks are the main choices of respondents.

Therefore, in this article, 30% of the annual income is invested in money-making money, also known as investment financing, based on the standard Poor's Household Asset Allocation Table in Figure 1, on the basis of which we build the most available portfolio to maximize its returns.

First of all, investing money is about making money, so we need to weigh three points - risk, liquidity, and return - in order to get a benign and excellent investment portfolio. In the investment portfolio, asset allocation should be made

according to individual risk tolerance, investment objectives and time period. For example, a portion of the funds can be invested in relatively stable bonds and financial products to obtain stable returns. At the same time, one can also diversify into higher-risk asset classes, such as equities or real estate, in pursuit of higher returns.

Markowitz Capital Asset Pricing Model (CAPM) is commonly used to evaluate the risk and return of an investment portfolio. We select a portfolio of 4 groups of funds (Fund A, Fund B, Fund C, and Fund D) and other investment options (financial products, real estate, insurance products, and stocks).

First, we assume the following expected annual returns (in per cent) and standard deviations (risk) for these assets:

| Assets | Expected Annual Returns | Standard Deviation (risk) |
|---|---|---|
| fund a | 10% | 15% |
| fund b | 12% | 18% |
| Fund C | 8% | 12% |
| Fund D | 14% | 20% |
| Financial Products | 5% | 5% |
| Property | 7% | 10% |
| insurance products | 6% | 8% |
| Stocks | 11% | 16% |

Next, this article uses the R language to calculate the expected return and standard deviation of the portfolio and plot the risk-return graph.




**Figure 2.** Standard deviation (risk)

The risk-return graph allows us to draw the following conclusions:

(1) rade-off between risk and return: The data points in the figure represent different portfolios, with the horizontal coordinate representing the standard deviation (risk) and the vertical coordinate representing the expected annual rate of return. In general, there is a positive correlation between risk and return, i.e., portfolios with higher expected annual returns are usually accompanied by higher risk.

(2) Efficient frontier: The curve on the risk-return diagram is known as the efficient frontier. The points on the efficient frontier represent the maximum expected annual rate of return that can be obtained for a given level of risk. Portfolios should be selected at or near the efficient frontier in order to maximise possible returns within acceptable risk limits.

(3) Diversified portfolios: By looking at the risk-return diagram, you can see the distribution of the portfolio at different levels of risk. This helps you to understand how the weights of different assets in the portfolio should be allocated to achieve the desired level of return under a particular risk appetite.

Ideally, a rational investor would want to achieve the highest expected return while taking the lowest risk. In the last part of the code, we generate the efficient frontier plot, which depicts the relationship between expected risk and expected return for different portfolios. The horizontal axis shows the level of risk (expressed as standard deviation) and the vertical axis shows the expected return (earnings). This curve indicates that for a particular level of risk, there exists a portfolio with the greatest expected return. The efficient frontier curve can help investors understand the trade-off between their risk tolerance and expected return. Faced with the same risk, investors of course want a higher return; if the returns are the same, then investors will tend to choose a less risky portfolio. This requires investors to consider their personal risk appetite and return objectives when constructing their portfolios, and to choose based on different points on the efficient frontier (i.e., different portfolios). However, attention should also be paid to practical factors such as price fluctuations, transaction costs, taxes and fees, and timely adjustments should be made. Therefore, by adding a combination of market observation and analysis in practice, you can more accurately assess the risk-return profile of your portfolio and make investment decisions that best suit your needs.

## 4. Example Analyses and Case Studies

Through the case studies of the four families, we can observe that there are differences in portfolio design among families with different income levels and risk preferences. Low-income families tend to favour conservative investment strategies, such as fixed deposits and bond funds; middle-income families choose more diversified investment portfolios, including stock funds, bond funds and real estate funds; and high-income families have greater financial strength and can allocate assets more flexibly, with more diversified investment portfolios.

In summary, through strategies such as diversification, risk diversification and regular rebalancing, household investors can maximise returns while controlling risks. The investment portfolios of different households need to be customised according to their financial objectives, risk tolerance and income levels to meet their specific investment needs.

## 5. Behavioural Finance and the Investment Decisions of Ordinary Households

Behavioural finance is the study of investors' decision-making behaviour and behavioural biases in financial markets. Unlike traditional financial theory, which assumes that investors are rational, fully understand market information and are able to make optimal decisions, behavioural finance focuses more on the impact of investors' psychological and behavioural factors on investment decisions. The background of behavioural finance can be traced back to research in economics and finance in the late 1980s. The development of the field was inspired by behavioural economics, i.e., empirical studies of individual decision-making behaviour.

An important reason for the low level of financial investment diversification among Chinese households is the overall low level of financial literacy. However, after controlling for other factors, it is found that increased financial literacy has a significant positive effect on the diversification of household risky asset allocation. In addition, the level of education, risk appetite, investment experience, the level of local economic development and the degree of financial market development also have a significant impact on the diversity of household financial investment. Therefore, it is important to strengthen financial literacy education for household investors to promote the development of a healthy and stable financial market and to prevent illegal financial behaviours The influencing factors of these behavioural biases mainly include individual psychological and behavioural factors, social environment and culture, media and information, as well as family background and education. [7]

**Table 1.** Portfolio tables for different households

| | Income level | Financial objectives and risk appetite | Asset categories and weight allocation | Selection basis | Risk management measures |
|---|---|---|---|---|---|
| Family I | Low income households | Ensure basic living needs, such as paying rent and daily expenses. Due to relatively difficult economic conditions, risk appetite is relatively conservative | -Fixed deposit (20%/30%)<br>-Bond Fund (60%/70%) | Time deposits can provide stable interest income, while bond funds can provide a certain degree of growth | To reduce risk, it is recommended to choose asset classes with lower risk and hold investment portfolios for the long term. |
| Family II | Middle income households | This includes paying for children's college tuition, purchasing a house, and having sufficient funds when retiring. Due to the relatively high-income level, the risk appetite is relatively moderate. | -Stock Fund (40%)<br>-Bond Fund (30%)<br>-Real Estate Fund (20%)<br>-Cash/short-term deposits (10%) | Stock funds can provide high return potential, bond funds can provide relatively stable returns, and real estate funds can indirectly participate in the real estate market. | Diversify investment portfolios and regularly rebalance to control risks |
| Family III | Belonging to middle-income families | Provide sufficient education funds for children when they attend university and have a stable source of retirement pension after retirement. Moderate risk appetite. | -Stock fund: 30%<br>-Bond fund: 40%<br>-Real Estate Investment Trusts (REITs): 20%<br>-Savings account: 10% | Stock and bond funds are used to achieve long-term appreciation and stable returns, REITs are used to invest in the real estate market, savings accounts are used for emergency reserves and short-term expenses | Rebalance assets and adopt diversified investment strategies to reduce risks |
| Family IV | Low income households | Maintaining the real value of assets and providing medical and elderly care security | -Fixed deposit: 50%<br>-Bond fund: 30%<br>-Value preserving investment products: 20% | Fixed deposits provide stable interest income, bond funds are used to provide relatively stable long-term returns, and hedging investment products are used to maintain the real value of assets | Regularly adjust the fixed deposit interest rate to adapt to inflation, choose bond funds with good credit, and avoid high-risk investment products. |

(Note: The above data are from the China Family Tracking Survey (CFPS).[6]

To help the average family make smarter investment decisions, here are some suggestions and approaches:

(1) Strengthening financial literacy and education: improving investors' understanding of financial markets and investment instruments and developing good investment knowledge and skills.

Defining investment objectives and risk tolerance: Clearly defining an individual's investment objectives and risk tolerance in order to select a suitable portfolio.

(2) Diversification risk: Reducing overall portfolio risk by spreading funds across different asset classes and markets.

(3) Regular review and adjustment of the portfolio: the performance of the portfolio is regularly assessed and adjustments are made as necessary to ensure consistency with individual objectives.

(4) Remain calm and rational: avoid emotionally driven investment decisions and make decisions based on rational analysis.

Financial education is critical to improving the quality of the average household investor. By providing relevant financial literacy and skills training, ordinary households can better understand and cope with the challenges of the investment market. Financial institutions play an important role in providing financial education, and it is their responsibility to provide easy-to-understand and practical financial education content to help investors improve their decision-making skills and avoid unnecessary risks and losses.

# 6. Conclusion

Through the thesis we can see that the application and impact of portfolio theory and practice in the average Chinese family is a complex and important area. It involves a number of aspects such as individual risk tolerance, investment objectives, asset allocation, etc., and is also constrained by market conditions and investors' own characteristics. Therefore, constructing an optimal investment portfolio requires comprehensive consideration of a variety of factors

and market conditions, as well as the flexible use of different methods and tools to achieve the desired goals. From both theoretical and practical perspectives, this paper explores the basic concepts and strategies of portfolio theory and practice, as well as the application and impact of these strategies in the average Chinese household. It also gives recommendations and conditions for the application of different asset classes and specific investment varieties in light of the characteristics of the Chinese market and the situation of ordinary households. These recommendations are intended to help ordinary family investors better understand and cope with the challenges of the investment market, and achieve the goals of maximising returns and controlling risk.

In conclusion, through in-depth research and analysis of the theory and practice of investment portfolios, reference and guidance are provided to ordinary family investors. Whether it is in formulating personal investment strategies or in choosing appropriate asset classes and specific investment varieties, it provides ideas and methods for family investors. It is hoped that it will help more ordinary family investors to realise their financial goals and achieve better investment returns.

# References


[1] National Bureau of Statistics. (2021) Government information disclosure work report of the National Bureau of Statistics in 2021. http://www.stats.gov. cn/xxgk/gknb/ tjj_gknb/ 202201/ t20220129_1827137.html.

[2] Shanghai Advanced Institute of Finance. (2021) Goldin releases survey report on investment and financial behavior of Chinese residents. https://www.saif.sjtu.edu.cn/show-107-5190. html.

[3] Rosen, H., Wu, S. (2004). Portfolio choice and health status. Journal of Financial Economics, 72(3), 457-484.

[4] Li, D. (2021). Research on the efficiency of household financial asset allocation and its influencing factors in Western China. Thesis of Xinjiang University of Finance and Economics.

[5] Urban Household Assets and Liabilities Survey Group, Department of Survey and Statistics, People's Bank of China China China Finance. (2019) 2019 Survey on urban household assets and liabilities in China. China Finance Magazine.

[6] China Family Panel Studies (CFPS). http://www. isss.pku. edu.cn/cfps/xgxw/cfpsdt/1336727.html.

[7] Zeng, Z., He, Q., Wu, Y., et al. (2015). Financial literacy and household portfolio diversity. The Economist, 6(6): 86-94.