

Financial Asset Allocation and Fertility Intention: Evidence from Chinese Families Using CFPS Data

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Abstract: China faces a structural-demographic crisis characterized by low fertility rates, an aging population, and ecological imbalances. Despite policy interventions, fertility intentions remain a concern. This study explores the complex relationship between household financial asset allocation and fertility intentions using CFPS data. The findings reveal a significant negative association between investing in financial products, total financial assets, and fertility intentions. Urban-rural disparities, gender differences, and educational gradients further shape this relationship. Mechanism analysis suggests that while financial assets boost income, they also influence households towards smaller family sizes, reflecting changing societal values.

Keywords: Family Financial Asset Allocation, Fertility Intention, China Family Panel Studies (CFPS)

1. Introduction

Family financial asset allocation in China has undergone significant changes in recent years. According to a 2021 report by the People's Bank of China, Chinese households held financial assets worth 194 trillion RMB at the end of 2020, an increase of 13.7% year-on-year. The composition of these financial assets has also evolved. In 2020, deposits still accounted for the largest share of household financial assets at 53.4%, representing a notable decline compared to 61.3% in 2015. Over the same period, there has been rapid growth in more risky investment assets. Holdings of stocks and funds reached 26.1% of household financial assets in 2020, doubling from 12.7% in 2015. Bonds and other securities also increased from 3.3% to 7.9%.

Geographically, financial asset allocation differs significantly between urban and rural households. Urban households account for about 80% of total household financial assets. These households allocate over 60% of their assets to deposits, stocks, funds, and bonds. In contrast, rural households primarily invest in safer assets like deposits and cash, which amounted to 86% of their financial assets in 2020. Demographic factors also influence financial asset allocation. Younger households tend to invest more in riskier assets than older households, which prefer deposits. As China's population ages, the allocation of financial assets may continue shifting towards more conservative investments in the coming years.

The latest data released by the National Bureau of Statistics of China show that the population of newborns in the country in 2023 will be 9.02 million, the lowest number of births. The total population of the country decreased by 540,000 compared to the end of the previous year, and China officially entered the population growth phase negatively. China's structural-demographic crisis is approaching, with low fertility, minor childhood, ageing, and demographic and ecological imbalances becoming normal and evolving into a long-term trend. In order to respond to the social challenge of older juvenilization and to reverse the trend of low fertility rates, China has adopted a gradual population adjustment policy from the end of the 2013 "single two children" reform to the 2016 "comprehensive two kids" policy, and by 2021, rapidly and fully release three children, and policy

adjustments gradually accelerated. At the same time, complementary parental services and maternity leave policies were rapidly introduced.

However, after a series of policies, there has been no rapid growth in the ideal birth population. The overall fertility change curve in China from 1994 to 2023 is shown as below:

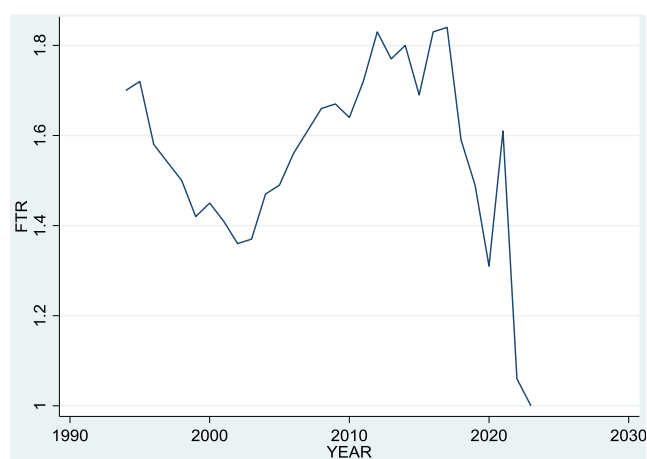


Figure 1. The total fertility rate of China from 1994 to 2023

Source: It was drawn by STATA.

It can be shown that after the introduction of the "comprehensive two-child" policy in 2016, there was a short increase in total fertility and a rapid decline in 2017. By 2020, China's overall fertility rate had dropped to an extremely low of 1.3 and had continued to decline for the following three years. As a result, the question of how to raise the will of the population to be fertile has also become a common concern of national policy and the Institute of Academic Studies.

Fertility intention encompasses the desire to have children, the timing of childbearing, and the desired number of children. It is one of the important factors affecting the fertility rate, and there is a close relationship between it and the fertility rate. Although there may be a deviation between people's reported fertility intention and actual fertility behaviour, a large number of fertility intention surveys, especially long-term continuous surveys, can still understand the current situation and change process of people's fertility concept, estimate the occurrence of fertility behaviour, and then predict the trend of the overall fertility level of the population. Continuous research and analysis are essential to monitor

these trends and inform policies that support sustainable demographic patterns in China.

Hence, a question is raised: How will financial asset allocation affect fertility intention?

2. Literature Review

2.1. Family Financial Asset Allocation

Family financial asset allocation refers to how households distribute their financial resources among different investment categories, such as stocks, bonds, real estate, and savings accounts. This decision-making process is crucial for achieving long-term financial goals and security.

Risk tolerance plays a crucial role in asset allocation decisions. Research by Grable and Lytton (2011) found that risk tolerance levels differ among family members and influence the allocation of assets within a family portfolio.

The length of the investment horizon significantly affects asset allocation decisions. According to Zhang, Chen, and Wu (2019), families with longer investment horizons tend to allocate a higher proportion of their assets towards riskier investments, such as equities, to maximize long-term returns. Family demographics, including age, income, education, and family structure, also impact asset allocation strategies. A study by Hanna, Chen, and Prawitz (2011) revealed that younger families with higher incomes are more likely to invest in riskier assets, while older families with lower incomes prefer safer investments. Proper asset allocation helps in diversifying a family's investment portfolio, thereby reducing risk. A study by Brinson, Hood, and Beebower (2012) found that asset allocation decisions explained more than 90% of the total variation in portfolio returns over time. Regularly rebalancing a portfolio based on asset allocation targets can enhance returns. A research paper by Malkiel and Xu (2013) demonstrated that systematic portfolio rebalancing, based on asset allocation, resulted in higher returns compared to buy-and-hold strategies.

Financial literacy plays a crucial role in making informed decisions regarding asset allocation. A study by Lusardi and Mitchell (2014) revealed that individuals with higher financial literacy levels are more likely to allocate assets efficiently and understand the importance of diversification. Financial literacy also influences investor behavior and risk perception. Research by Van Rooij, Lusardi, and Alessie (2012) found that financially literate individuals are less likely to panic and change their asset allocation during market downturns, leading to better long-term investment outcomes. Family financial asset allocation is a complex process influenced by various factors, including risk tolerance, time horizon, demographics, and financial literacy. Proper asset allocation, driven by these factors, can lead to improved portfolio performance and reduced investment risk. Financial literacy emerges as a crucial determinant of asset allocation decisions and investor behavior.

2.2. Fertility Intention

Fertility intentions are a critical aspect of demographic research, providing insights into potential future fertility behaviours and trends. As a key determinant of actual fertility, they reflect both individual desires and broader sociocultural influences.

The socioeconomic context plays a pivotal role in shaping fertility intentions. Research consistently shows that higher levels of education correlate with lower fertility intentions

(Beaujouan and Berghammer, 2019). Employment, particularly for women, often leads to delayed childbearing and a reduced number of intended children as career aspirations compete with reproductive goals (Balbo et al., 2013). Economic stability and income are also significant, with financial uncertainty often leading to postponed or fewer births (Sobotka et al., 2011).

Marital status and partnership stability are strong predictors of fertility intentions. Individuals in stable relationships are more likely to have higher fertility intentions (Testa, 2012). The characteristics and fertility desires of a partner can significantly influence an individual's fertility plans (Iacovou and Tavares, 2011). Relationship quality, including emotional and practical support, also contributes to fertility decision-making (Thomson, 2014).

Cultural norms and societal expectations around family size and parenting roles significantly influence fertility intentions (Morgan and Rackin, 2010). Social networks, including family and peers, can either encourage or deter individuals from pursuing larger families (Balbo and Mills, 2011). Social support systems, including childcare availability and community resources, can create an environment conducive to higher fertility intentions (Rindfuss et al., 2010).

Access to contraception and family planning services directly impacts fertility intentions by enabling individuals to align their reproductive behaviours with their desired family size (Casterline and Sinding, 2000). Understanding reproductive health, including understanding fertility and contraception, is also critical in shaping intentions (Miller, 2011). Infertility issues and reproductive health disorders can drastically alter fertility intentions, with awareness of such issues influencing childbearing plans (Greil et al., 2010).

Fertility intentions are critical for predicting population growth or decline. High fertility intentions may lead to population increases, while low intentions could exacerbate ageing populations and shrinking workforces (Lutz and Samir, 2011). Policymakers must consider fertility intentions in developing family planning and reproductive health initiatives, ensuring that resources align with the population's needs (Bongaarts, 2015). Furthermore, intentional childbearing is linked to better maternal and child health outcomes, emphasising the importance of supporting individuals' reproductive goals (Chandra et al., 2005).

Fertility intentions are influenced by a mix of socioeconomic, partnership, cultural, and reproductive health factors. Policymakers, healthcare providers, and demographers must understand these dynamics to support reproductive autonomy and develop effective population policies. Continued research is necessary to explore the changing landscape of fertility intentions in various cultural contexts and address disparities in reproductive health services.

2.3. The Relation between Fertility Intention and Family Financial Asset Allocation

The decision to have children is profoundly personal and influenced by various factors, including cultural, social, and economic conditions. Among the economic factors, family financial asset allocation has been increasingly recognized for its role in shaping fertility intentions.

Becker's economic theory of fertility (Becker, 1960) provides an early foundation for understanding the relationship between economic conditions and fertility,

suggesting that children can be viewed as "consumer durables" and that the costs associated with raising children can influence fertility decisions. Subsequent researchers have developed this theory by incorporating the importance of wealth and asset allocation in the decision-making process for fertility.

A recurring theme in recent literature is the impact of financial uncertainty on fertility intentions. Sobotka et al. (2011) postulate that economic recessions and the resulting job insecurity and financial instability can lead to postponement or reduction of fertility. They argue that this delay is not merely a response to immediate hardship but also reflects a strategic allocation of limited financial resources. Financial assets are often earmarked for long-term goals, including retirement and children's education. Research by Lersch and Vidal (2014) emphasizes that the allocation of financial assets toward such future-oriented investments can be both a facilitator and a barrier to fertility intentions. When assets are significantly allocated towards children's future, it may indicate a greater intention to invest in a larger family size.

The literature on housing and fertility suggests a strong link between home ownership, housing conditions, and fertility decisions. According to Mulder and Billari (2010), home ownership can promote higher fertility intentions while unstable housing, such as renting or living in precarious conditions, may discourage childbearing.

The distribution of financial assets within the household and the relative income of partners also influence fertility intentions. Cooke (2013) examines how gender equity in income and asset allocation within couples is associated with higher fertility intentions, suggesting a balance in financial power may facilitate childbearing decisions.

Government policies that affect family finances, such as tax benefits, subsidies, and parental leave, have also been shown to impact fertility intentions. Thévenon (2011) highlights that policies aimed at reducing the financial burden of childbearing can lead to higher fertility rates by improving the overall economic conditions for families.

Several empirical studies have directly examined the relationship between asset allocation and fertility intentions. De La Rica and Iza (2015) use Spanish data to show that the allocation of financial assets towards savings and investments is positively correlated with the intention to have additional children, suggesting that financial preparedness is key to fertility decisions.

The reviewed literature indicates a complex interplay between family financial asset allocation and fertility intentions. Economic stability, housing conditions, income distribution, and government policies all intersect to influence the decision-making process surrounding childbearing. While financial uncertainty often leads to reduced fertility intentions, strategic allocation of assets toward long-term family goals can facilitate higher fertility intentions. It is clear that economic conditions and financial planning are integral to understanding contemporary fertility behaviors.

2.4. Contribution

This research offers novel insights into the nexus between family financial asset allocation and fertility intentions within the context of Chinese households, using the comprehensive CFPS data from 2018. Our study is one of the few to delve into this topic within the Chinese demographic landscape. Our study, which focuses on Chinese families, adds to the

body of literature on fertility intentions by highlighting the role that economic factors play in a transitional economy, which is undergoing rapid social and economic changes that can significantly affect family planning and financial decisions.

The findings of this research have practical implications for policymakers, suggesting that financial asset allocation strategies may need to be incorporated into the design of policies aimed at influencing fertility rates, which is particularly relevant given China's demographic challenges related to its aging population.

3. Hypothesis

The intersection of household financial behavior and fertility intentions has been a subject of growing interest among demographers, economists, and sociologists. Specifically, there is a debate over whether investments in financial products and accumulating higher financial assets are negatively associated with the desire to have more children.

Several studies have explored the link between financial behavior and fertility, often focusing on the opportunity costs associated with childbearing. Becker's (1960) economic theory of fertility posits that as households accumulate wealth, the cost of having children rises, potentially leading to lower fertility intentions (Becker, 1960).

The theoretical underpinning of the negative association between financial asset accumulation and fertility intentions is often drawn from the opportunity cost theory. Sobotka et al. (2011) suggest that as individuals invest more in financial products, they perceive the economic cost of childbearing to be higher, leading to delayed or reduced fertility intentions. Lesthaeghe (2010) also discussed the life course perspective, emphasizing the influence of personal life objectives and financial security on fertility decisions. Empirical Studies A study by Figueiredo et al. (2016), using European Social Survey data, found that households with higher financial assets were likelier to postpone childbearing. The authors argue that this delay is linked to the desire to achieve a certain level of financial security before expanding the family.

Similarly, De La Rica and Iza (2015) analyzed Spanish households and reported a significant negative relationship between financial asset holdings and the number of children. Conversely, some research suggests that the relationship may take more work. Vignoli et al. (2013) conducted a study in Italy that showed that while there is a negative association between financial wealth and fertility intentions among young adults, this association weakens or even reverses for older age groups, who may have different motivations for childbearing. Another strand of literature focuses on the impact of specific financial products on fertility intentions. A paper by Harknett and Hartnett (2014) found that access to and use of retirement savings plans were associated with lower fertility intentions among American couples, indicating that long-term financial planning could influence reproductive decisions. Global Perspectives the association between financial behavior and fertility intentions may also vary across cultural and economic contexts. For example, Adsera and Menendez (2011) examined this relationship in a cross-national study. They found that the negative association between financial assets and fertility intentions was more pronounced in countries with more developed financial markets. Methodological Considerations the studies reviewed employed a variety of methodologies, including cross-sectional surveys,

longitudinal panel studies, and qualitative interviews. While these methods provide valuable insights, they also present challenges such as self-report bias and difficulty establishing causal relationships.

The literature indicates a general trend supporting the hypothesis that household investment in financial products and higher financial assets is negatively associated with fertility intentions. However, the relationship is complicated, and elements like age, socioeconomic status, and cultural context may moderate it. Future research should establish causality and explore how financial behavior influences fertility intentions. Based on these insights:

H1: Household investment in financial products and higher financial assets is negatively associated with fertility intentions.

Financial considerations are integral to family planning, as highlighted by classic economic theories of fertility such as those posited by Becker (1960), who argued that children are considered 'economic goods' and that the costs associated with raising them influence family size decisions. The urban-rural dichotomy presents contrasting scenarios for financial stability and fertility intentions. Urban areas often feature higher costs of living and housing, which can lead to a stronger negative association between financial asset allocation and fertility intentions (Lerch, 2014). Conversely, rural areas may offer lower living costs and stronger family networks that can buffer economic uncertainties (Kulu & Vikat, 2007). Empirical studies provide evidence of this urban-rural divide. Vignoli et al. (2013) found that in Italy, economic uncertainty strongly affects fertility intentions in urban areas, where financial assets are more tightly stretched. In contrast, rural populations appeared less influenced by financial constraints when making fertility decisions. Further support comes from the work of Kreyenfeld (2011), who investigated the impact of the economic recession on fertility intentions in Europe and found that urban residents displayed a more pronounced reduction in fertility intentions compared to their rural counterparts during periods of economic downturn. A study by Sobotka, Skirbekk, and Philipov (2011) extended this analysis to a broader European context, showing that urban areas across different countries exhibit a consistent pattern where financial asset allocation exerts a strong negative influence on fertility intentions.

The literature suggests a consistent pattern where urban areas demonstrate a stronger negative association between financial asset allocation and fertility intentions compared to rural areas. The higher costs associated with urban living, particularly in housing and childcare, contribute to this phenomenon. These findings have implications for policymaking, particularly in developing strategies that address urban families' economic challenges. Further research could expand upon the geographic scope and socioeconomic variables to deepen the understanding of this association. Thus:

H2: Urban areas show a stronger negative association between financial asset allocation and fertility intentions compared to rural areas.

The relationship between financial asset allocation and fertility intentions is a complex one, influenced by a multitude of socioeconomic factors. Gender plays a crucial role in this equation, as men and women often have different financial experiences and objectives, which can shape their intentions regarding family planning. This literature review examines the existing research on how financial asset allocation impacts

fertility intentions, with a focus on the comparative effects between men and women.

Research has shown that male and female have different investment behaviours and risk tolerance levels (Dohmen et al., 2011). Men tend to allocate more of their portfolio to riskier assets (Korniotis, G. M., & Kumar, A., 2011), which can lead to higher financial returns, potentially influencing their fertility intentions by providing a more secure financial base for family planning.

Gender-specific financial roles and expectations can influence fertility intentions differently for men and women (Pahl, 2008). Men's fertility intentions are often associated with their ability to provide financially for their offspring (Duvander et al., 2010), while women may prioritise financial security to balance work and family life (Miller, 2011).

While there is a wealth of literature on financial behaviour and fertility intentions separately, few studies directly compare the impact of financial asset allocation on fertility intentions between men and women. One such study by Cooke (2009) found that men's economic resources, including asset allocation, had a more pronounced effect on their fertility intentions compared to women.

The existing literature suggests that men and women approach financial asset allocation differently, which can subsequently influence their fertility intentions in distinct ways. Men's higher risk tolerance and potential for greater financial returns may provide them with a greater sense of financial readiness for children, thus impacting their fertility intentions more significantly than women. However, the influence of societal norms and gender roles should not be underestimated in this context. Consequently:

H3: Compared with female, the impact of financial asset allocation on male is larger on fertility intentions.

Fertility intentions are shaped by a multitude of factors, including personal financial status and educational background. The literature indicates that educational attainment plays a moderating role in the relationship between financial asset allocation and fertility intentions, with higher education levels typically reinforcing a negative association. This literature review synthesizes the research findings that elucidate the interconnections between these variables.

Becker's theory of the economics of fertility suggests that higher education and income potential lead to an increase in the opportunity cost of childbearing (Becker, 1960). This theory provides a foundational framework for understanding how educational attainment can influence financial decision-making and fertility intentions.

Studies have consistently found that higher academic levels are associated with lower fertility rates (Kravdal, 2001; Martin, 2000). Educational attainment is often linked to delayed family formation as individuals prioritize career and personal development (Perelli-Harris et al., 2010).

Financial considerations are pivotal in family planning, with asset allocation being a significant factor (Schneider & Schimel, 2015). The allocation of financial assets towards more liquid and less risky investments may reflect a strategy for those with uncertain fertility intentions (Fisher & Anong, 2012).

Research indicates that education mediates the relationship between financial behavior and fertility decisions. Lersch and Vidal (2014) found that higher educational attainment can lead to more strategic financial planning, which often entails delaying or reducing the number of children as a means to optimize economic outcomes.

Studies by Adsera (2005) and De Laat and Sevilla-Sanz (2011) provide practical support for the notion that the relationship between financial asset allocation and fertility intentions is moderated by education. Highly educated individuals often exhibit more conservative financial behaviors and express lower fertility intentions, indicating a stronger negative association.

The extant literature underscores the moderating role of educational attainment in the relationship between financial asset allocation and fertility intentions. Higher education amplifies the negative association between economic considerations and the desire for children, reflecting a broader trend of delayed fertility and strategic financial management among the educated. Therefore:

H4: Educational attainment moderates the relationship between financial asset allocation and fertility intentions, with higher education strengthening the negative association.

Research suggests that a household's allocation of financial assets is indicative of its economic priorities and future planning, which includes decisions around childbearing. The opportunity cost of raising children is often weighed against other potential investments, which can influence fertility intentions (Sobotka et al., 2011).

Household income is considered a primary resource that can moderate the relationship between asset allocation and fertility plans. Higher income levels typically provide a buffer that allows households to consider larger family sizes without significant economic strain. At the same time, lower income may necessitate a more cautious approach to both financial planning and fertility (De Laat & Sevilla-Sanz, 2011). Studies such as that by Lersch (2017) have demonstrated that higher household income can partially counter the negative effect of risk-averse asset allocations on fertility intentions. Conversely, Addo and Lichter (2013) found that when household income is low, the financial uncertainty associated with riskier asset investments could lead to a postponement or reduction in fertility intentions.

Recent research by Schneider and Schiml (2015) supports the idea that household income negatively mediates the relationship between the allocation of financial assets and the

intention to have children. As household income increases, the emphasis on liquid and secure financial assets diminishes, potentially leading to fewer constraints on fertility intentions. Building on this:

H5: Household income has a negative mediation effect on the effect of household financial asset allocation on fertility intentions.

4. Data and Methodology

4.1. Data Source

The research utilizes the China Family Panel Studies (CFPS), a nationally representative longitudinal survey that covers a wide range of demographic, economic, and social variables. The China Household Tracking Survey began in 2010 and is updated every two years. The survey data for 2020 have been updated as of early 2022. Since the explained variable "ideal number of children" used in this study was only investigated in 2014 and 2018, and the data after 2018 may be affected by the novel coronavirus epidemic, this paper finally chooses to conduct analysis based on the survey data of 2018.

4.2. Variables

The explained variable in this paper is the "fertility intention" of the interviewed individual, measured by the "number of children expected by the respondent" in the questionnaire. Cash, savings deposits, stocks, government bonds, funds, and financial derivatives are among the financial asset types included in the CFPS survey questionnaire. Among these, cash and savings deposits are treated as non-risk financial assets, while the remaining types are regarded as venture capital assets. Risk financial assets are selected as the interpreted variable, which has two indicators: one is whether a family is involved in the risk financial market, i.e., whether the family holds a risk financial asset such as stocks or funds (if_rfin) and financial asset (fin_asset). The definitions and descriptions of other variables are detailed in Table 1.

Table 1. The description of variables

Variable	Name	Definition	N	Mean	SD	Min	Max
childnum	Fertility Intention	The number of children expected by the respondent	15,942	1.880	0.716	0	10
if_rfin	Whether the family invests in the financial market	If the family holding financial assets = 1; not holding = 0	15,942	0.059	0.235	0	1
fin_asset	Total household financial assets	Financial assets of a household, in ten thousand yuan	15,942	7.875	28.637	0	1050
age	Age	Age of respondents	15,942	35.270	9.464	18	50
gender	Gender	Male=1; Female=0	15,942	0.496	0.500	0	1
edu	Educational years	Educational years of respondents	15,942	11.040	4.832	0	22
marrige	Marital status	Married spouses = 1; unmarried, living together, divorced and divorced = 0	15,942	0.769	0.422	0	1
insurance	Endowment insurance	Insured =1; uninsured = 0	15,942	0.590	0.492	0	1
familysize	Family size	Number of families of respondents	15,942	4.398	2.015	1	21
childsize	Number of offspring	Number of children of the respondent	15,942	0.824	0.908	0	6
lnincome	Family income	lnincome=ln(Total household income)	15,942	11.170	0.857	6.215	15.920
urban	Whether the respondents live in urban or rural areas	Urban=1; courtry=1	15,942	0.521	0.450	0	1

5. Empirical Analysis

5.1. Reference Regression

The baseline model provided is as follows:

$$Childnum_i = \alpha + \beta_1 fin_i + \beta_2 X_i + \varepsilon_i \quad (1)$$

Where `Childnumi` represents fertility intentions, `fini` represents whether financial assets are held (if_rfin) and household financial assets (fin_asset), `Xi` is the vector of control variables, and ε_i is the random disturbance term. The expected number of children is an ordinal variable ranging from 0 to 10; hence, an ordered Probit model is employed to estimate the impact of family financial assets on people's fertility intentions.

The result is shown in Table 2 as below:

Table 2. Baseline regression results

	(1)	(2)
	childnum	childnum
if_rfin	-0.232*** (-5.884)	
fin_asset		-0.001*** (-4.700)
age	0.010*** (8.552)	0.010*** (8.536)
gender	0.079*** (4.257)	0.080*** (4.270)
edu	-0.026*** (-12.892)	-0.026*** (-13.260)
marrige	0.302*** (11.307)	0.301*** (11.293)
insurance	-0.080*** (-4.065)	-0.083*** (-4.225)
familysize	0.126*** (25.991)	0.128*** (26.433)
N	15,942	15,942
<i>t</i> statistics in parentheses		
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$		

Table 2 shows the regression results of whether to invest in financial products and total family financial assets on the number of children expected by the childbearing age group.

Table 3. Robustness test results

	(1)	(2)	(3)	(4)	(5)	(6)
	Ologit	Ologit	Tobit	Tobit	Oprobit	Oprobit
	childnum		childnum		childsize	
if_rfin	-0.672*** (-10.013)		-0.217*** (-9.004)		-0.215*** (-5.641)	
finance_asset		-0.003*** (-5.487)		-0.001*** (-5.595)		-0.001*** (-3.132)
Control	Y	Y	Y	Y	Y	Y
N	15942	15942	15942	15942	15942	15942
<i>t</i> statistics in parentheses						
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$						

Columns (1) to (4) in Table 3 show the estimated results of the ordered logit model and the Tobit model, respectively. The coefficients for the key explanatory variables (if_rfin and financial_asset) remained significantly negative at the level of 1%. This consistency across different model types strengthens the credibility of our findings.

Upon replacing the intended number of children with the actual number of children born, the core explanatory variables (if_rfin and financial_asset) continued to exhibit a significant

negative relationship. It indicates a significant negative association between the household's investment in financial products and, their level of financial assets and their fertility intentions. Specifically, the coefficient of -0.232 for the binary investment variable suggests that households investing in financial products are less likely to desire more children. Similarly, the coefficient of -0.001 for the financial assets variable implies that an increase in financial assets is associated with a slight decrease in the likelihood of a household wanting more children. The magnitudes of these coefficients and their high levels of statistical significance underscore that both the act of investing in financial products and the amount of financial assets held by a household are inversely related to their desire for more children.

Regarding the control variables, the coefficient for the respondent's age is positive, indicating a positive relationship between age and the fertility intentions of the childbearing population. As age increases, residents' desire for childbirth also increases. The coefficient for gender is positive, with men having a higher fertility intention than women. Education level has a negative effect on individual fertility intentions; the higher the level of education, the lower the fertility intention. The coefficient for marital status is positive, indicating that married individuals have a higher fertility intention compared to those who are unmarried. The coefficient for pension insurance is negative, suggesting that respondents who have participated in pension insurance have a lower fertility intention. This may be because pension insurance, to some extent, substitutes for the utility of "raising children for old age security." The family's role in fertility decisions and the support it offers in child care have a significant positive impact on the coefficient for household size, which encourages fertility intentions.

5.2. Robustness Test

The explained variable "ideal number of children" in the baseline regression is a counting variable, so in the robustness test, we first change the model into the ordered logit model and the Tobit model. Then, we change the dependent variable into childsize. The robustness test results is shown in Table 3 as below:

negative relationship. The continued significance of the relationship between financial asset allocation and actual fertility outcomes suggests a direct and tangible influence of financial behavior on family planning decisions. This could imply that financial considerations are not only a matter of intention but also translate into actual reproductive behavior.

5.3. Heterogeneity Analysis

5.3.1. Urban-Rural Disparities

In heterogeneity analysis, we first separate our sample into

urban and rural areas. The Urban-Rural Disparities is as below:

Table 4. Urban-Rural Disparities

	(1)	(2)	(3)	(4)
	childnum		childnum	
	Country	Urban	Country	Urban
if_rfin	-0.303***	-0.040		
	(-7.212)	(-0.357)		
finance_asset			-0.001***	-0.002*
			(-3.187)	(-1.878)
Control	Y	Y	Y	Y
N	15942	15942	15942	15942
t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$				

The influence of financial asset allocation on fertility intentions is more pronounced in urban areas. This could be attributed to factors like higher living costs, greater access to financial instruments, and more pronounced economic motivations in family planning decisions. In contrast, the rural context exhibits a lesser or more nuanced impact of financial asset allocation on fertility intentions. This might be due to

traditional values, lower cost of child-rearing, and potentially different financial priorities.

5.3.2. Gender Differences

Then, we separate our sample into male and female based on different genders. The Gender Disparities is as below:

Table 5. Gender Disparities

	(1)	(2)	(3)	(4)
	childnum		childnum	
	Male	Female	Male	Female
if_rfin	-0.319***	-0.439***		
	(-5.900)	(-8.049)		
finance_asset			-0.001**	-0.002***
			(-2.214)	(-6.005)
Control	Y	Y	Y	Y
N	15942	15942	15942	15942
t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$				

Both genders are affected by financial asset allocation, but the underlying reasons and intensities might differ. Among males, the impact of financial asset allocation on fertility intentions is significant, highlighting financial considerations as an important factor in their family planning decisions. Economic stability and the perceived ability to provide might be influencing these decisions. Females also show a significant relationship between financial asset allocation and fertility intentions. This could indicate concerns about balancing work and family life, economic independence, and the direct role of financial stability in their decision-making process.

5.3.3. Educational Disparities

Third, we use the intersection of edu and financial asset allocation as the heterogeneity test based on education. Studies such as Becker and Lewis (1973) and Becker and Tomes (1976) have long established that educational attainment is a pivotal factor influencing fertility intentions. So, our analysis delves into the interaction between educational attainment and financial behavior. The results is as below:

Table 6. Educational Disparities

	(1)	(2)
	childnum	
edu*if_rfin	-0.027***	
	(-9.876)	
edu*finance_asset		-0.001***
		(-6.272)
Control	Y	Y
N	15942	15942
t statistics in parentheses * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$		

The regression results, displayed in Table 6, incorporate interaction terms between years of education and the decision to invest in financial products (if_rfin) and the allocation of financial assets (finance_asset). The negative and significant coefficients of edu*if_rfin and edu*finance_asset suggest that the effect of financial asset allocation on fertility intentions gets stronger as the education level rises. The results underscore an educational gradient in how financial decisions interact with fertility intentions. Higher education amplifies the inhibitory impact of financial asset allocation on the desire to have children. Individuals with more education might weigh the economic implications of childbearing more heavily, considering the opportunity costs related to their

educational and career goals.

$$Childnum_i = \alpha_3 + \beta_5 fin_i + \beta_6 M_i + \beta_7 X_i + \varepsilon_{3i} \quad (4)$$

5.4. Mechanism Analysis

This study's mechanism analysis focuses on a mediation model: "Financial Asset Allocation → Income → Fertility Intentions." We analyze whether investment in financial assets and their accumulation impact household income and, subsequently, fertility intentions.

$$Childnum_i = \alpha_1 + \beta_1 fin_i + \beta_2 X_i + \varepsilon_{1i} \quad (2)$$

$$M_i = \alpha_2 + \beta_3 fin_i + \beta_4 X_i + \varepsilon_{2i} \quad (3)$$

The dependent variable in our model is the number of children (childnum), and the independent variable (fin) denotes either the possession of risky financial assets or the total financial assets of a household. The mediating variable is the logarithm of the total household income (Mi), and we include a range of control variables (Xi) to account for other influencing factors.

The results of Mechanism Analysis is as below in Table 7:

Table 7. Mechanism Analysis results

	(1)	(2)	(3)	(4)	(5)	(6)
	childnum	lnincome	childnum	childnum	lnincome	childnum
if_rfin	-0.378***	0.930***	-0.277***			
	(-9.856)	(33.275)	(-6.990)			
lnincome			-0.109***			-0.121***
			(-10.019)			(-11.009)
finance_asset				-0.002***	0.008***	-0.001**
				(-5.847)	(36.692)	(-2.526)
Control	Y	Y	Y	Y	Y	Y
N	15942	15942	15942	15942	15942	15942
<i>t</i> statistics in parentheses						
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$						

Our results, particularly from columns 2 and 5 in Table 7, show a clear positive correlation between financial asset allocation and household income. This implies that households engaging in financial product investments or those with a higher value of financial assets generally report higher total income. This finding aligns with the expectation that financial investment can be a lucrative avenue for income generation. However, the more nuanced and significant finding comes from columns 3 and 6. Even when household income is considered a mediating factor, the relationship between financial asset allocation and fertility intentions remains significantly negative. This indicates that, despite the positive impact on household income, higher financial asset allocation correlates with a lower desire for children.

This paradoxical situation suggests that while financial asset accumulation may bring economic prosperity, it also leads to a shift in familial priorities. Households with higher incomes due to financial investments might prioritize financial stability and personal aspirations over expanding their family size. This could be due to several reasons: the perceived financial burden of childrearing, the opportunity costs associated with parenting, or a more general societal shift towards valuing economic success over larger family units. In conclusion, the study shows a complex interaction between financial asset allocation, which drives economic prosperity, and fertility intentions. While financial assets boost household income, they concurrently seem to influence households towards preferring smaller family sizes, reflecting a broader socio-economic shift in family planning preferences.

6. Conclusion

The relationship between household investment in financial products, higher financial assets, and fertility intentions is multifaceted and influenced by various factors. These factors can include geographic location, gender, educational attainment, and overall household income. Urban areas often exhibit higher costs of living, including

housing, education, and childcare, compared to rural areas. These costs can significantly influence household decisions regarding family planning. Lutz, Testa, and Penn (2006) found that urban residents tend to have fewer children than their rural counterparts, partly due to these economic pressures. A study by Kulu and Washbrook (2014) suggests that urban areas may amplify the negative association between financial asset allocation and fertility intentions due to greater access to financial markets and investment opportunities, alongside more pronounced costs associated with child-rearing.

The impact of financial considerations on fertility intentions may differ between men and women. Men, often considered the traditional breadwinners, may feel stronger pressure to secure financial stability before starting or expanding a family. Piotrowski, Kalleberg, and Rindfuss (2015) argue that men's employment stability is more closely linked to fertility decisions than that of women. Therefore, men may be more influenced by financial asset allocation when considering fertility, as financial security is seen as a prerequisite for fatherhood.

Education plays a significant role in shaping fertility intentions and financial behavior. Higher educational attainment is associated with greater financial literacy, which can lead to more informed investment decisions (Lusardi & Mitchell, 2014). However, higher education is also correlated with delayed family formation and lower fertility rates, as individuals prioritize career development (Beaujouan et al., 2016). Thus, the negative association between financial asset allocation and fertility intentions may be stronger among the highly educated.

Household income may mediate the relationship between financial asset allocation and fertility intentions. Higher income can lead to increased financial asset allocation; however, it also provides more resources to support children. The direction of the influence of household income is, therefore, complex. A study by Sobotka et al. (2011) during

the Great Recession highlighted the importance of economic stability for fertility intentions. Conversely, Fahlén and Oláh (2018) suggested that while higher income allows for more savings and investment, it does not always translate into a desire for larger families, as opportunity costs and lifestyle preferences play a role.

The negative association between household investment in financial products, higher financial assets, and fertility intentions seems to be influenced by urbanization, gender, education, and household income. Urban areas show a stronger negative association due to higher costs of living and more pronounced lifestyle choices that favor financial investments over childbearing. Men, potentially due to traditional societal roles, may prioritize financial stability more than women when it comes to fertility intentions. Higher education strengthens the negative association, as it often leads to a preference for a career over family life in the early adult years. Lastly, while household income can increase the capacity for financial investment, it does not necessarily lead to higher fertility intentions, as the perceived costs of childrearing and lifestyle choices could influence the mediation effect.

Using the CFPS 2018 dataset as the sole data source for our study introduces several limitations that must be acknowledged. Firstly, the cross-sectional design of the dataset precludes us from identifying causal relationships between financial asset allocation and fertility intentions. While we can identify correlations within the 2018 data, causality can only be inferred with longitudinal data that tracks changes over time. Observing the same households across different years would enable us to better understand the dynamics between financial decisions and fertility plans. Second, unobserved heterogeneity might have an impact on our analysis. There may be latent variables not captured in the CFPS dataset that influence a family's financial behaviour and desire to have more children.

Cultural norms, personal values, and other socio-psychological factors could play a significant role in shaping financial and fertility decisions, and the lack of data on these elements limits the comprehensiveness of our findings.

Thirdly, the generalizability of our results is limited to the socio-economic context of China in the year 2018. Socio-economic conditions can vary significantly over time and across different regions; thus, our findings may not apply to other periods, especially in light of the significant economic and social changes brought on by events such as the COVID-19 pandemic.

For instance, the economic shocks resulting from the pandemic have led to job losses and income reductions that could profoundly affect family economic status and fertility intentions, which were not accounted for in our study. Lastly, our study's scope is restricted in that it does not explore the influence of governmental policies or external economic shocks, such as the COVID-19 pandemic, on family financial asset allocation and fertility intentions. These factors significantly affect our understanding of the interplay between economics and fertility. Future research that examines these externalities could provide valuable insights into how families adjust their financial and fertility strategies in response to policy changes and economic uncertainty.

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