

Improve Household Financial Health in an Uncertain World

——Financial Diaries of Low- and Middle-income Households in China



CAFI

中国普惠金融研究院
Chinese Academy of Financial Inclusion

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**Chinese Academy of Financial Inclusion (CAFI)
at Renmin University of China**

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Content

Executive Summary.....	1
Acknowledgement.....	3
1. Introduction: A Fundamental Work for Achieving High-Quality Financial Inclusion.....	5
1.1 Understanding their financial lives is essential for new policy-making	5
1.2 The background of three research locations.....	8
1.3 How we select the participants?.....	10
1.4 Financial diary methodology introduction.....	11
1.5 Why financial diary?.....	15
2. Profiles :Who are we looking into?.....	17
2.1 Household size and income level.....	17
2.2 Householders' gender, age and education.....	21
3. Insights: Exploring the financial-behavior features.....	25
3.1 Household liquidity: cash flows matter!.....	25
3.2 Try to earn more.....	33
3.3 Learning to spend is also important.....	52
3.4 Never underestimate Renqing costs.....	74
3.5 Immature credit behaviors.....	80
3.6 Family risks should not be ignored.....	90
4. Special concerns: Small businesses under the pandemic.....	110
5. Actions: Gap identification and policy advice.....	114

Figure content

Figure 1.1: Locations of the research.....	8
Figure 1.2: Sample family location distribution.....	10
Figure 1.3: Financial diary research element.....	12
Figure 2.1: Family size.....	18
Figure2.2: Share of households on different yearly income levels for each county/city (Unit: Thousand)	20
Figure2.3: Household yearly income level for each county/city (CNY).....	21
Figure2.4: Gender breakdown of heads of sample household for each county/city (%).....	21
Figure2.5: Age breakdown of heads of sample household for each county/city (%).....	22
Figure2.6: Education breakdown of heads of sample household for each county/city (%).....	23
Figure 3.1: Cash in-out.....	27
Figure 3.2: Monthly cash out-in features.....	28
Figure 3.3: In-Out flow figure.....	29
Figure 3.4: Yijun Chen's family's in-out balance.....	30
Figure 3.5: Income source classification.....	34
Figure 3.6: Total income structure (Total income in the whole financial-diary year).....	37
Figure 3.7: Yijun's income and its structure.....	38
Figure 3.8: Yijun Lei's and Pingjiang He's families' income structures.....	40
Figure 3.9: Total income per household in three places.....	41
Figure 3.10: Deviation map.....	43

Figure 3.11: How difficult families are when they lost major income source in the last 5 years.....	46
Figure 3.12: Percentage ranking.....	48
Figure 3.13: Shanghai income decline in lock down (CNY)	48
Figure 3.14: Shang's family in-out balance.....	50
Figure 3.15: Percentage of "spending>income" (CNY)	53
Figure 3.16: Spending classification.....	54
Figure 3.17: Average household total spending in 3 places.....	56
Figure 3.18: Spending structure.....	57
Figure 3.19: Spending structure for different family types.....	61
Figure 3.20: Household average Medical and education spending.....	65
Figure 3.21: Shanghai Zhu's Family education spending.....	65
Figure 3.22: Shanghai household average monthly spending under lock down	68
Figure 3.23: Shanghai Spending structure under lock down.....	68
Figure 3.24: Spending change during the lock down for 5 typical families ...	72
Figure 3.25: Ratio of social interaction costs volume per household accounting for monthly in-out volume per household.....	76
Figure 3.26: Household average social transfer in 3 places.....	77
Figure 3.27: In-flow / (in-flow+out-flow) in social transfer.....	78
Figure 3.28: "Whose help would you like to ask for when your family members are hospitalized and you don't have enough money?" question answer	79
Figure 3.29: In and out flow in credit behaviors.....	83
Figure 3.30: Correlation between pay-back volume and spending willingness (whole sample)	85
Figure 3.31: Correlation between borrow-in volume and spending willingness	

(Whole sample)	86
Figure 3.32: Lin's family in-out flow balance chart.....	88
Figure 3.33: Risk categories.....	93
Figure 3.34: Feature map of risks.....	97
Figure 3.35: Percentage of severity (measured by expectation) on family of 4 risk types.....	98
Figure 3.36: Risk expectations in 3 places.....	99
Figure 3.37: Answer to Question "Seeking help from?".....	101
Figure 3.38: Risk gap in risk categories (CNY).....	101
Figure 3.39: Risk gaps for specific risks.....	102
Figure 3.40: Insurance density and depth.....	103
Figure 3.41: Social insurance (Pension & Basic medical insurance)	104
Figure 3.42: Commercial insurance coverage and WTP.....	105
Figure 3.43: Insurance depth in 3 places.....	106
Figure 3.44: Answer to "How do you feel about insurance sales?".....	108
Figure 3.45: Deng's family in-out flow balance.....	111
Figure 3.46: Jiang's family in-out balance.....	112
Figure 3.47: Insights figure.....	115

Table content

Table 1.1: Three research locations basic information.....	9
Table 3.1: Cash in-out features.....	31
Table 3.2: Income per capita in every month (CNY)	36
Table 3.3: Coefficient of variation (CV) for different income source in 3 places	44
Table 3.4: Coefficient of variation (CV) for different spending in 3 places	59
Table 3.5: Specific risks.....	93
Table 3.6: Statistics for specific risks.....	94

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Executive Summary

This research is funded by AXA. CAFI research team appreciates the generosity of AXA for this research. This research is the continuation of World Bank's *China Financial Diaries* project. This research distinguishes from it by adding 60 households from Shanghai to make comparisons between rural households and urban households.

In order to improve the welfare of low- and middle-income people, an essential and fundamental work needed to do is to understand their financial lives and behaviours. This understanding can help the government and financial institutions design better financial policy and financial products with more adaptive features.

How this group of people earn their living? How they spend their earning? How they borrow and lend? Would they enjoy an easy and peaceful life? Are they facing risks that could be destructive for their family? All these questions drive the research team to carry out this close observation on the sample households. The abundant data and stories provided by the observation enables us to have an insight into their unique lives. This information is so important for policymakers, academic researchers, and financial institutions as well.

Fruitful important discoveries about the financial lives of low- and middle-income households in China are revealed in this study. Fulfilling the gaps and promoting the financial inclusion in the group of people are important in corresponding with "Common prosperity", "Rural Revitalization" and "Empowering New Urban Residents" strategies that the Chinese government is dedicated to.

This report starts with an introduction that provide information of the

research purpose, location and methodology. Next, we look at the statistical characteristics of the sample. In the third chapter, we try to explore the financial lives of low- and middle-income households by examining cash flow, income, spending, social transfer, credit and risk & insurance. In the fourth chapter, we focus on small and micro enterprises (SMEs) which is suffering the Covid-19 pandemic to identify the overwhelming risks they are facing. Last part of this report gives a conclusion and our suggestion on solutions and policy.

There are three major policy advices: Firstly, address the fundamental roles of community and village as "blood capillary" of structural monetary policies. Also, shift the emphasis of credit policy on the productive side only to both productive side and demand side. So that, providing accessible and affordable cash loans to low- and middle-income households will be the most effective way to meet the demand of smoothing expenditure, expanding consumption and expanding production. Secondly, address the more and more important role of inclusive insurance in the inclusive financial system and put more resources into the development of inclusive insurance, which can be regarded as a new leverage for financial institutions to achieve the Dual Goal. The digitalization of inclusive insurance is the key so insurance companies should develop digital, standardized and smart inclusive insurance products as the most effective tool for inclusive insurance promotion. Thirdly, pay more attention to the financial barrier among the society, especially among the vulnerable such as the old. Try to reduce the public distrust on financial institutions, especially insurance companies so the coverage of financial education and promotion of financial health concept are essential. Financial institutions need to integrate consumer protection strategy into the business strategy.

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We thank AXA for the support to the joint research project, as administered and conducted by the Chinese Academy of Financial Inclusion (CAFI), which is the beneficiary through funding and the mass-segment expertise from AXA Research Fund (RF) and AXA Emerging Customers (EC).

CAFI plays a crucial role in the research and taking initiatives in China's Financial Inclusion. Thanks to the generous contribution we received through AXA RF and AXA EC, CAFI was able to continuously deploy our expertise and methodology in China as well as to derive benefits from the newly established strategy to help industrial players to precisely target the low-income and mass consumers.

Guided by the concept of "Commitment, Action, Focus, and Impact", CAFI is committed to building a first-class think tank and platform for financial inclusion, facilitating the development of an inclusive financial system, and fulfilling the vision of "Good Finance and Good Society". We greatly appreciate your support to exploring and co-building the Eco-system of financial inclusion in China.

The CAFI team had been to Yijun, Pingjiang, and Shanghai for seven times in this year. Every family we met has its unique story that gave us unique inspiration. Be it the frost in March in Yijun, the rain in December in Pingjiang, or the rising new confirmed cases in Shanghai, nothing can stop us. We would like to thank the dozens of families that we have talked to face to face, as well as the over one hundred families that we have not interviewed in depth but cannot be more familiar with, for their selfless dedication to the research, which is why we can have the rich research results presented here. At the same time, I

would like to thank all the researchers and data collectors. Without your efforts, we could not have collected so much data on time.

We would also like to thank all the families and researchers who support the financial diary project.

CAFI research team

11th Jan 2023

1. Introduction: A Fundamental Work for Achieving High-Quality Financial Inclusion

For all participants in this research, such as Ms Huang, Ms Shang, Ms Liu and others. We are thankful for your inspiration, motivation and contribution in the whole past year.

——CAFI research team

The research team is deeply impressed by the diversity and moving stories of all people in the sample households. They are farmers who grow crops or fruits or involve in other farming activities; small businessmen who earn their living by buying and selling farm products and daily-need commodity in rural region; employees who earn salaries by working for the companies within skyscrapers; retirees but still serve in the labour force, or retirees enjoying great lives with their pension; middle-aged couples who are running a small business with a happy family, or couples who are migrant workers with financial pressure and heavy debts; young rural migrants who wish to become permanent urban citizen, or young citizens who have a job with stable income. Their honesty and sincerity inspire the team's passion in conducting this insight investigation.

1.1 Understanding their financial lives is essential for new policy-making

Household's financial behaviours, including expenses on food and clothing, saving habits and risk hedging, could affect, either directly or indirectly, the well-being of all family members. Understanding every single

payment and income by bookkeeping the cash flow enables us to truly grasp their financial needs of low- and middle-income households and provides insights at the micro level that help the government to realize the new policies for "rural revitalization" and "common prosperity".

The rural revitalization strategy was first unveiled by the Chinese government in 2018 in the period of 13th Five-Year Plan. During this period, the well-development of modern agriculture created a good kick-start for the rural revitalization strategy. By the end of the period, total crop production and per capita income of farmers have increased significantly. At the same time, Chinese government declared that the absolute poverty is basically eliminated under the current standard. The task of relocating people to alleviate poverty was fully completed, eliminating absolute poverty and overall regional poverty and creating a miracle in the history of human poverty reduction. Further in-depth reforms are demanded to build a harmonious and stable society that narrow down the disparity between rural and urban regions. Then the rural revitalization has naturally become the national development strategy in the 14th Five-Year Plan.

Besides, paying attention to the financial needs of 'new urban residents' is also crucial for the new urbanization drive. A document, namely "*the Notice on Strengthening Financial Services for New Urban Residents*", was issued jointly by China Banking and Insurance Regulatory Commission (CBIRC) and People's Bank of China (PBoC) in March 2022. The new urban resident refers to those who migrate into urban region for any purpose, having gotten permanent citizenship less than 3 years or not yet getting permanent citizenship. They are migrant workers, dependents of urban employee, and

businessmen, etc.¹ In this document, the population of the new urban residents is estimated to be about 0.3 billion in China, accounting for about 21% of total population, yet they are excluded from the financial services to a certain extent. Meanwhile they often suffer from income instability due to their short-term and informal employment and small businesses. The status of informal employment and temporal citizenship also result in the lack of social security and welfare benefits. While their low and unstable income could meet their basic living expense for food and shelter, they have less left for savings. Thus short-term borrowing is necessary for smoothing their living expense. Therefore, the document "encourages commercial banks to explore further into the business patterns, income features and capital needs of new urban residents and to optimize credit products for those starting up their own business by precisely assessing their credit standing with the help of information technology".²

For better understanding of the financial needs of these low- and middle-income group in both rural and urban regions, the financial diary was employed as the basic research method to observe closely the financial inflow, outflow, the behaviours and causes behind. From May 2021 to May 2022, the team records each financial inflow and outflow data of 197 households in three regions including Yijun County in Western China, Pingjiang County in Central China, and Shanghai City in Eastern China. Field researchers interview each household biweekly. This observed outcome is helpful for the financial institutions to design and provide more effective and suitable financial products and services and the government to improve financial policies as well.

1 *Notice on Strengthening Financial Services for New Urban Residents by the China Banking and Insurance Regulatory Commission and the People's Bank of China* (No.4) (issued by CBIRC [2022] No.4) , http://www.gov.cn/zhengce/zhengceku/2022-03/06/content_5677508.htm

2 idem

1.2 The Background of Three Research Locations



Figure 1.1: Locations of the research

China is a vast country with each region demonstrating different features of development. As shown in Figure 1.1, this research selects two counties (Yijun County and Pingjiang County) and one city (Shanghai Municipality) respectively from western, central and eastern China. This report is based on data of and interviews with households from June 2021, to May 31, 2022, of 197 households (91 households in Yijun county in Shanxi province and 46 households in Pingjiang county in Hunan province and 60 households in Shanghai). Below is a brief introduction to the three regions selected. The study selects Shanghai to draw a comparison between households there and those in the counties, aiming to explore the financial positions of low- and

middle-income urban residents that suffer from significant income instability and volatility, especially those living in extremely developed cities. Urban population in China keeps rising during the past three decades of urbanization. According to the China Statistical Yearbook 2021 compiled by the National Bureau of Statistics, the urbanization rate has increased from 26% in 1990 to 63% in 2020. Therefore, tapping into the financial needs of medium and low individuals living in cities, especially new urban residents, is of great significance for financial inclusion project to benefit target groups in the future. Shanghai is thus chosen to study the financial characteristics and needs of low- and middle-income urban residents.

The basic information of the three locations is in Table 1.1:

Table 1.1: Three research locations basic information

	Yijun	Pingjiang	Shanghai
Region	West	Central	East
Province	Shanxi	Hunan	Shanghai
Area(km ²)	1531	4125	6341
Population	71714	951112	24894300
GDP per capita (Yuan, 2021)	66095.9	37976.6	173756.7
Per capita disposable income (Yuan, 2021)	20016	19109	78027
Level	County	County	Municipality

Source: National Bureau of Statistics of China

Finally, 197 households were recruited for the study, excluding 13 households that quit after the pandemic. Figure 2.1 shows the regional distribution of these households. The sample is too small to present the whole landscape of urban and rural China. Instead, this sample was selected to reflect a range of different types of incomes, family composition and locations of households, with a focus on lower-income households in each county (city).

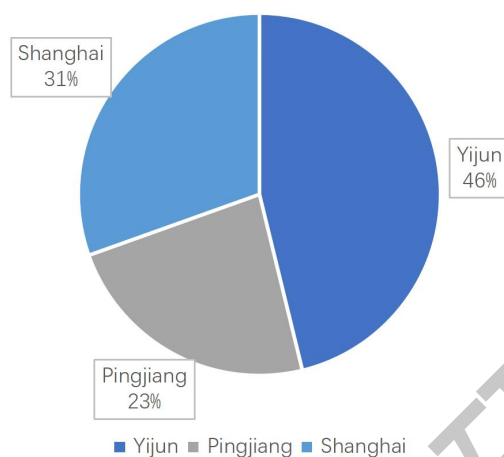


Figure 1.2: Sample family location distribution

Source: CAFI financial diary

1.3 How we select the participants?

A range of households across low-income farmers, small businesses holders and fixed-job workers were selected in areas with varying locations close to the main town in Yijun and Pingjiang. Participants selected in this study are those who have taken financial diaries between 2019 and 2021 in the World Bank project. Local officials and field researchers played a crucial role in linking these households with the research team.

In Shanghai, the source of income of the surveyed households is mainly the income of self-employed owners and the salary of fixed-job. We trust members of the Shanghai Lequn Social Work Service with research tasks in Shanghai. Households that administratively belong to the district where the service center locates are classified into groups according to income source and level; we select 60 households on a random basis, interview them and track their income and expense for an entire year.

1.4 Financial diary methodology introduction

As for financial diary method, Stuart Rutherford did many initial works and documented them in his seminal book 'the poor and their money' (Rutherford, 1999). Many others have also done many meaningful works, such as David Hulme, a professor at the University of Manchester. He tested 42 households in Bangladesh for one year to get details of their financial behaviours in 2000 (Hulme, 2004). Up to now, many countries around the world have conducted research on low- and middle-income families through the research method of financial diary, such as the United States, India, Kenya, Mexico, Mozambique, Pakistan, Rwanda, South Africa, Tanzania, and Uganda. For example, in the U.S., Morduch and Schneider (2017) tracked 235 low- and middle-income households over one year. It revealed hard-to-see aspects of the financial lives of working Americans, providing new insight for the design of financial services policies, programs and products for a broad range of Americans¹. Besides, the Financial Diaries in India were conducted in Varanasi and Uttar Pradesh from April 2012 to May 2013.

The method is largely qualitative in that it is not based on cautiously measured data and does not have any quantitative or statistical value. However, it requires that differences between all surveyed households be highlighted. Instead of group-interviewing people from the same place to learn about the general positions of the region, each household is interviewed individually or family members are invited to sit together to share their recent life. Qualitative data is drawn from interviews, while quantitative data is collected from daily income and expense records. By studying the financial positions of surveyed households through these data, the financial needs of low- and middle-income households can be unearthed to encourage new insights and suggestions on how to efficiently contain the financial instability that these households might

¹ U.S Financial Diaries, available online: <https://www.usfinancialdiaries.org/>

suffer from.



Figure 1.3: Financial diary research element

■ Questionnaire

In China, CAFI research team undertook the application of Financial Diary. Data collection began in May 2021 with a series of "initial questionnaires", through which essential background information on the household was collected and known income sources and financial devices were registered. Once household members, income sources, and financial devices had been registered, the Financial Diaries software produced a customized questionnaire for each household. In addition, for tracking the risks the households faced before and during the research period, questionnaires were distributed to them and data was collected. During the research, a risk-module survey was also finished by distributing questionnaires to the households. The design of the questionnaire partly referred to Zollmann (2015) who researched deeply in the risks Kenyans were facing.

■ Home visit

After confirming the list of households to be surveyed, our research team gave each household a record-keeping book and offered basic training on how to keep daily records. We suggested that the family member in charge of the household's financial activities keeps records and takes clear notes of the type, time of occurrence, amount and cause for all incomes, expenses and loans. For example, salary, operating income, service revenue and other kinds of income shall all be recorded. We also reminded surveyed households that cash withdrawn from banks shall not be considered income (it's simply currency in a different form). Differences should also be highlighted between purchasing living supplies and purchasing goods for production and business purposes. Purchase of financial instruments, personal finance tools, funds or equity stock should not be considered household expense, the type and amount of which should be separately recorded. Besides, training courses were given on how to keep records of other kinds of financial activities.

■ Data management

We hired local people from these three regions to act as our researchers, who collected data from surveyed households every half month; thus, we were able to gain two sets of data per month. Six local researchers were hired in Yijun county, each of whom was responsible for interviewing and collecting data from 15-16 households. Three researchers were hired in Pingjiang county, each of whom was responsible for interviewing and collecting data from 14-15 households. We trusted members of the Shanghai Lequn Social Service as our researchers, who interviewed and collected data from all 60 surveyed households. During the COVID-19 lockdown from March to June 2022 in Shanghai, local researchers and surveyed families continued to interview households online through instant messaging or phone calls. The survey covers

the period before and after the city's shutdown due to the COVID-19 outbreak, providing a good look at the impact of the pandemic on households' income, spending and borrowing. We also offered basic training to enable researchers to conduct preliminary analysis to screen the data for us. Researchers were educated on the requirements for record-keeping at the very beginning: data should be collected twice a month, in the middle and at the end of the month respectively; data of each household should be recorded in a clear and complete manner; financial activities should be specified.

The research team created a financial diary database for the project; a person was assigned to gather and count all the data collected by local researchers, which was then checked by team members for the time of occurrence and amount accuracy before being entered into the database. All these tasks should facilitate quantitative analysis in the future.

■ Spot check

In-home interviews were conducted with selected households on a regular basis (if an in-home interview is not possible due to the pandemic, local researchers would be instructed to contact the selected household for an online interview). Interviewers walked through all the transactions respondents made in terms of both sources and corresponding uses of money. Households with high levels of income volatility or financial deficit were selected for a one-on-one semi-structured interview. When this person is unexpected and unavailable, the interview will occur with another person in the household. Interviews should cover but should not be limited to recent changes within the family and reasons for any sharp increase or decrease in income and expense. The process of recording cash flows was increasingly improved as the interviewers worked to balance sources of money with uses, particularly for lumpy inflows and outflows.

1.5 Why financial diary?

By tapping into the financial positions and needs of low- and middle-income households in the US, Morduch and Schneider (2017) discover that their financial stress stems from income volatility rather than absolute low- and middle-income, which lays the theoretical foundation for financial institutions to offer cash loans. By observing and summarizing daily financial activities of low- and middle-income households, we could jump out of the box to study their financial positions as well as potential financial needs from a third-person perspective.

Most studies on individual financial needs in China are based on research of supply-side banks and non-bank institutions or on subjective investigation into consumers of financial products. Such research method can help discover consumers' subjective needs but is not capable of unveiling objective or relatively hidden ones. Financial diary proves to be effective in perceiving such financial needs.

(1) Firstly, by recording income, expense, borrowing & repayment, credit, insurance and other financial activities of a household, a database can be created for researchers to identify financial needs and draw a household portrait based on their financial behaviours.

(2) Secondly, financial diary is based on objective demand-side data, providing reliable, detailed and objective input to study real financial needs on the demand side and communicating solid data to policymakers.

(3) The combination of interview and data analysis helps to resolve the lack-of-depth problem found in previous research on financial needs. Stories collected serve as complementary explanations of problematic data, penetrating further into details to uncover the cause-and-effect relationship by applying subjective insights to objective facts.

(4) This is the first time for financial diary to be applied on a large scale in China; it opens up new possibilities for research on financial needs to shift from the supply side to the demand side, a necessary transition for us to understand the financial needs of the vulnerable groups and to facilitate quality development of financial inclusion.

(5) As the three surveyed regions vary in natural resources and economic development, the research will give new insights into the differences in individuals' financial needs resulting from urban-rural gap or regional differences in China.

2. Profiles: Who are we looking into?

2.1 Household size and income level

Decision-making in household can be complex, affected by both household-related factors such as size and income level as well as individual-related factors such as gender, age and marital status of the householder. This section will briefly elaborate on household-related factors, and the personal attributes of the householder will be explored in the next section.

■ Household size

Sample households in all three regions tend to be small in size. As shown in Figure 2.1, Shanghai has the lowest number of household members, with on average less than 3 members per household (The average household size of Shanghai is 2.32¹); half of the surveyed households in Shanghai consist of one to two members, which is more than double that of Yijun (The average household size of Yijun is 2.54) and Pingjiang (The average household size is 3.01). Further investigation shows that significantly more unpartnered people can be found in Shanghai than in Pingjiang and Yijun and that single-person households in Shanghai account for 23.3% of the total, which is lower than the 3% in both Pingjiang and Yijun. Besides, multi-generational households are rarely seen in all three regions. In general, households consisting of more than five members are made up of multiple generations living together. Yijun has the largest number of multi-generational households, though no more than one-fourth of the total; the percentage is 10% in Shanghai.

1 The data comes from the 7th national census.

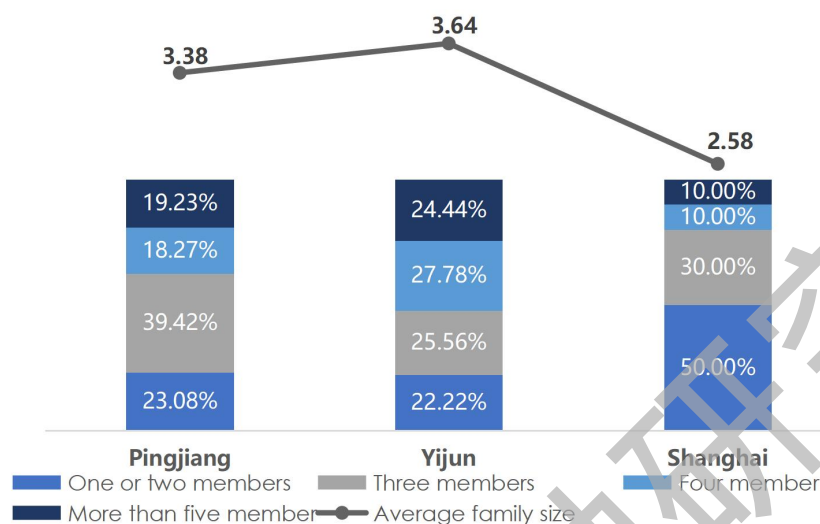


Figure 2.1: Family size

Source: CAFI survey

Household's main income source

The source of income of surveyed households in Pingjiang, Yijun and Shanghai varies due to differences in industrial structure and geographical location. Pingjiang is the most forested county in Hunan province with a total of 63% forest area. It is characterized by a forest-dependent economy¹ built on crop farming and livestock production: for example, growing rice, non-toxic vegetables and camellia oleifera, as well as raising chicken, duck, and sheep. However, only 8.7% of surveyed households still engage in agricultural production, accounting for a small proportion of household income. For example, Li's family, which relies on agricultural production most for household income, grows 1,500 mu (equal to 1 square kilometer) of rice and rapeseed under contract farming and raises chickens for sale, yet such income only accounts for less than 30% of the total.

Along with abundant local resources of forest and land, the wood

¹ A forest-dependent economy operates in a way that combines crop farming, livestock rearing, gathering and forest tourism without cutting down trees.

processing sector in Pingjiang county has been thriving, including building material sector and furniture manufacturing sector. These sample households, like most of the general population in Pingjiang county, live within or near various towns. About one-third of surveyed households are self-employed or run a micro or small business, for instance, owning a furniture store, working as a construction contractor, engaging in wood processing, or running a fried chicken restaurant or patisserie, etc. Gains from running a micro or small business, though being the major source of income for these households, are higher than households feeding on other sources of income. Some of them hold long-term labor contracts in a pharmacy, an auto company or a financial institute; others hold long-term, part-time jobs, such as operating a crane or an excavator at the construction site and working as a salesperson or cashier in a small store or supermarket. Lower-income households experience a large boost in income in recent years as Pingjiang government recruited over 1,200 forest guardsmen from these families.

Yijun has a farming legacy and is renowned for abundant land resources. Corn, apple and walnut have been selected to represent its featuring farming sector since the early 1990s. Today, as a consequence of cumulative effort across generations, these have become the 'Three Precious Gems of Yijun', enjoying a reputation across the nation. Moreover, it has widely applied mulching to corn-growing in Shaanxi province. Most of the surveyed households in Yijun grow corn, the planting area of which can be as large as 148 mu (98,667 square meters); meanwhile, other households that grow less corn choose to grow more apples or walnuts instead. 87.91% of surveyed households in the county still feed on agricultural production. These families own vast farmland. Therefore, almost all family members are required to invest a huge amount of labor and time in farming. Farm income remains their major

source of income. Some of these households make extra money by working part-time or taking on temporary jobs. Income made this way accounts for little of the total but serves as an important source of income during slack seasons.

Shanghai is a profound economic center in China, whose per capita disposable income is almost twice that of Yijun and Pingjiang. As sample households live in urban areas, none of them engage in crop husbandry; 98.33% of these households feed on fixed or part-time employment.

Details about sources of income will be further explored and analyzed in section 3.2.

■ Level of income

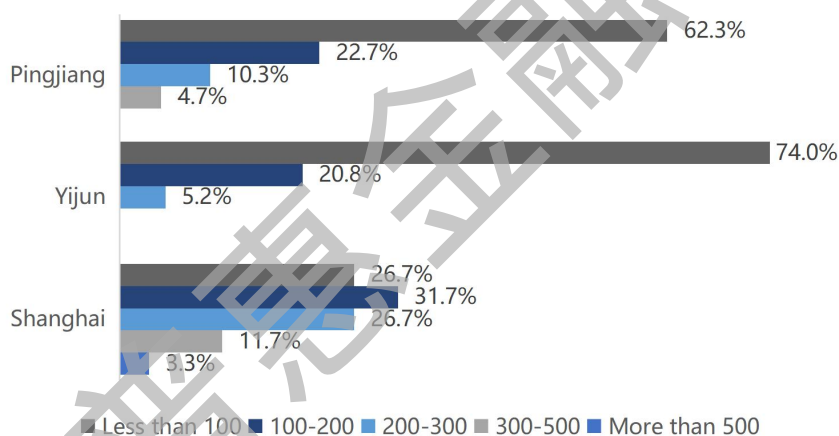


Figure 2.2: Share of households on different yearly income levels for each county/city (Unit: Thousand)

Source: CAFI survey

As the above section shows, the type of income that a household earns very much determines the level of income of that household. Figure 2.2-2.3 show that overall income in Yijun is much lower than in Pingjiang.

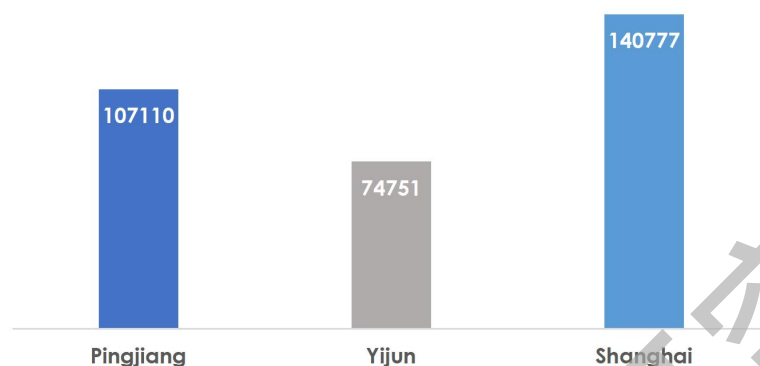


Figure2.3: Household yearly income level for each county/city (CNY)

Source: CAFI survey

2.2 Householders¹ gender, age and education

The householder is usually the decision maker for family financial activities, whose personal attributes such as age and gender are thus crucial for our research. It should be noted that the householder as referred to in this report is not necessarily the house owner registered with the government, but rather the family member that knows best about the household's financial positions.

Gender

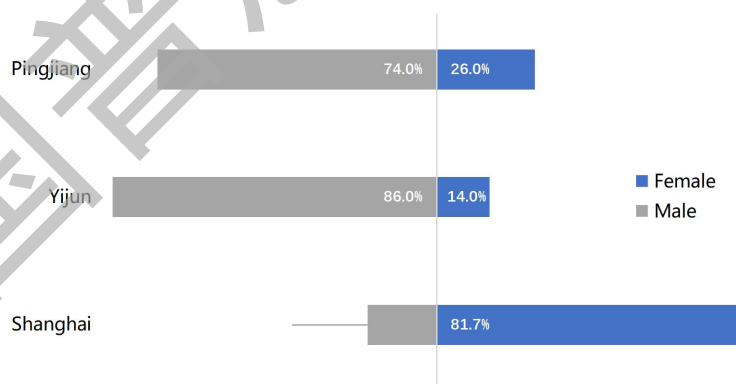


Figure2.4: Gender breakdown of heads of sample household for each county/city (%)

Source: CAFI survey

¹ Householder: Head of a household. Those who are in charge of the financial management in a household can be considered as householder.

Generally speaking, the more economically developed a region becomes, the more financially independent women reside there, and thus the more likely they'll make family financial decisions. This rule has proven solid by our research. As shown in Figure 2.4, more than 80% of heads of surveyed households are women in Shanghai. During the interviews, they answer questions about their families' financial positions without any hitch and act as managers of family assets as well as decision-makers for family spending. In contrast, most of the householders of surveyed households are men in Pingjiang and Yijun counties. Although women manage the family assets in some households, men still dominate in family decision-making on consumption behaviours and purchase of financial products.

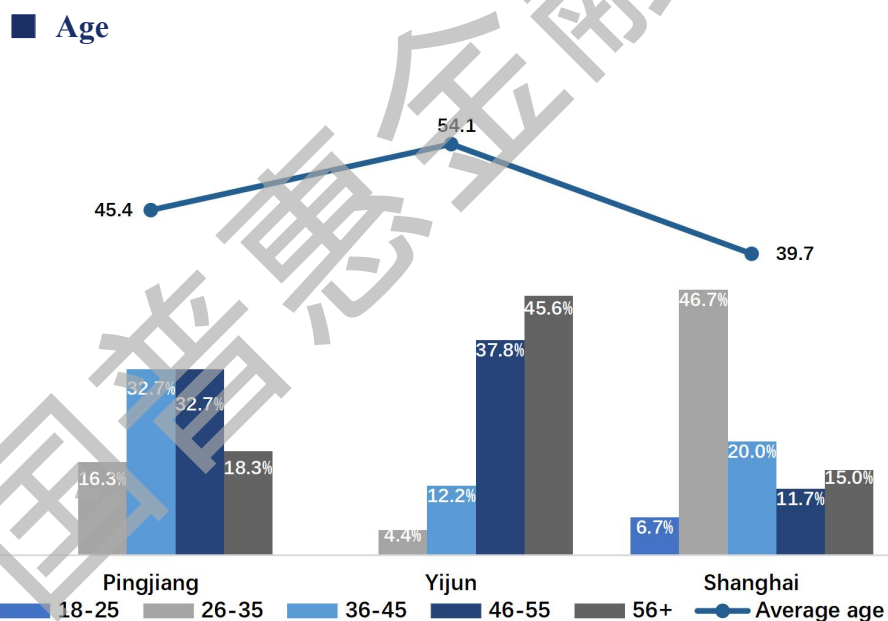


Figure 2.5: Age breakdown of heads of sample household for each county/city (%)

Source: CAFI survey

A different descriptor is whether households are headed by an elder. This

situation comes up less frequently in Shanghai. Only 15% of the households in Shanghai sample have someone over the age of 56. The average age is 40 years old, while 46.7% of heads of surveyed households are aged between 26 and 35. The householders of surveyed households in Pingjiang and Yijun counties are older than their counterparts in Shanghai, especially in Yijun where the average age of householders is 54 years old. Further investigation reveals that on the one hand, there are more multi-generational families in rural areas where the elderly have more power in financial decision-making because of the tradition of respecting elders or because they are perceived to be more experienced; on the other hand, households comprising the old (single-household or married-couple household) are more common in rural areas.

Education

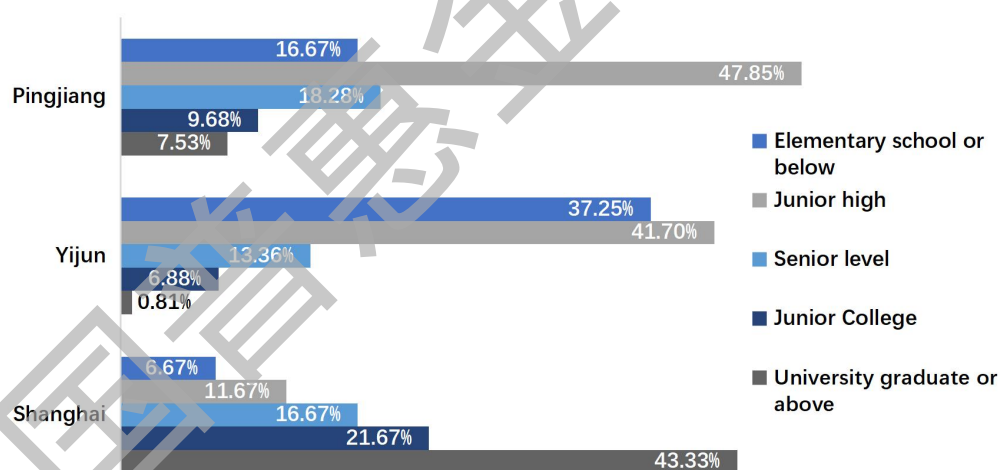


Figure2.6: Education breakdown of heads of sample household for each county/city (%)

Source: CAFI survey

There are very few householders in the sample who have a college/university degree or even a senior-level degree in Pingjiang and Yijun. Figure

2.6 above shows the majority of adults in both Pingjiang and Yijun have a junior high level of education. Most householders of surveyed households are well-educated in Shanghai, with nearly two-thirds of them holding a three-year college degree or higher.

3. Insights: Exploring the financial-behaviour features

Both subjective statements and objective facts are indispensable for us to truly understand the financial needs of individuals. Every entry made in the financial diary, every story told during face-to-face interviews and every questionnaire collected serve as objective references for us to tap into their financial lives. Their financial needs can thus be better understood by combining subjective statements with objective facts, information such as cash inflow and outflow, source and structure of income, income volatility, structure of spending, change in spending and adoption of other financial products could objectively reflect changes in their financial positions as well as usage of financial tools. After identifying the demand gap, we'll be able to pinpoint the financial needs of households and offer more comprehensive financial services or use financial tools for their benefits. We'll analyse the financial behaviours of surveyed households in the following aspects: in-out cashflow, income, spending, social transfer, credit and risk & insurance.

3.1 Household liquidity: cash flows matter!

"The rise in household liquidity appears to have increased the financial resilience of the household sector."

—— (La Cava and Wang, 2021)

Liquidity ensures that a company can operate normally, be profitable and resist risks. As suggested by Kontus and Mihanovic (2019), management of liquidity and liquid assets focuses on cash inflows and outflows in order

to improve profitability. Understanding a company's cash inflow and outflow enables us to evaluate its operating performance. This applies to households as well. Campbell (2006) suggests that the concept of household finance is comparable to corporate finance, which mainly studies how a household utilizes financial tools to achieve its goals. Hence understanding a household's cash inflow and outflow is also useful for us to grasp its financial needs.

We care more about the inflow and outflow of cash within a household, rather than exactly where these flows go. Cash inflow and outflow can tell us if a household is financially balanced and can reflect its financial stability. We collect data on cash inflow and outflow in surveyed households in Yijun, Pingjiang and Shanghai and come up with the following in-out flow figure as shown in Figure 3.1; details of some of the key features are summarized in Table 3.1.

Table 3. 1: Cash In-Out Features

	Average Month Out/In Ratio	In>Out Month Ratio	Out/In ratio Volatility (Measured by Range)	Out/In ratio Volatility (Measured by Variance)
Yijun	1.15	46.15	2.89	0.51
Pingjiang	0.86	84.62	0.96	0.04
Shanghai	0.84	91.67	0.4	0.01
Total	0.89	76.92	/	0.06

Source: CAFI financial diary

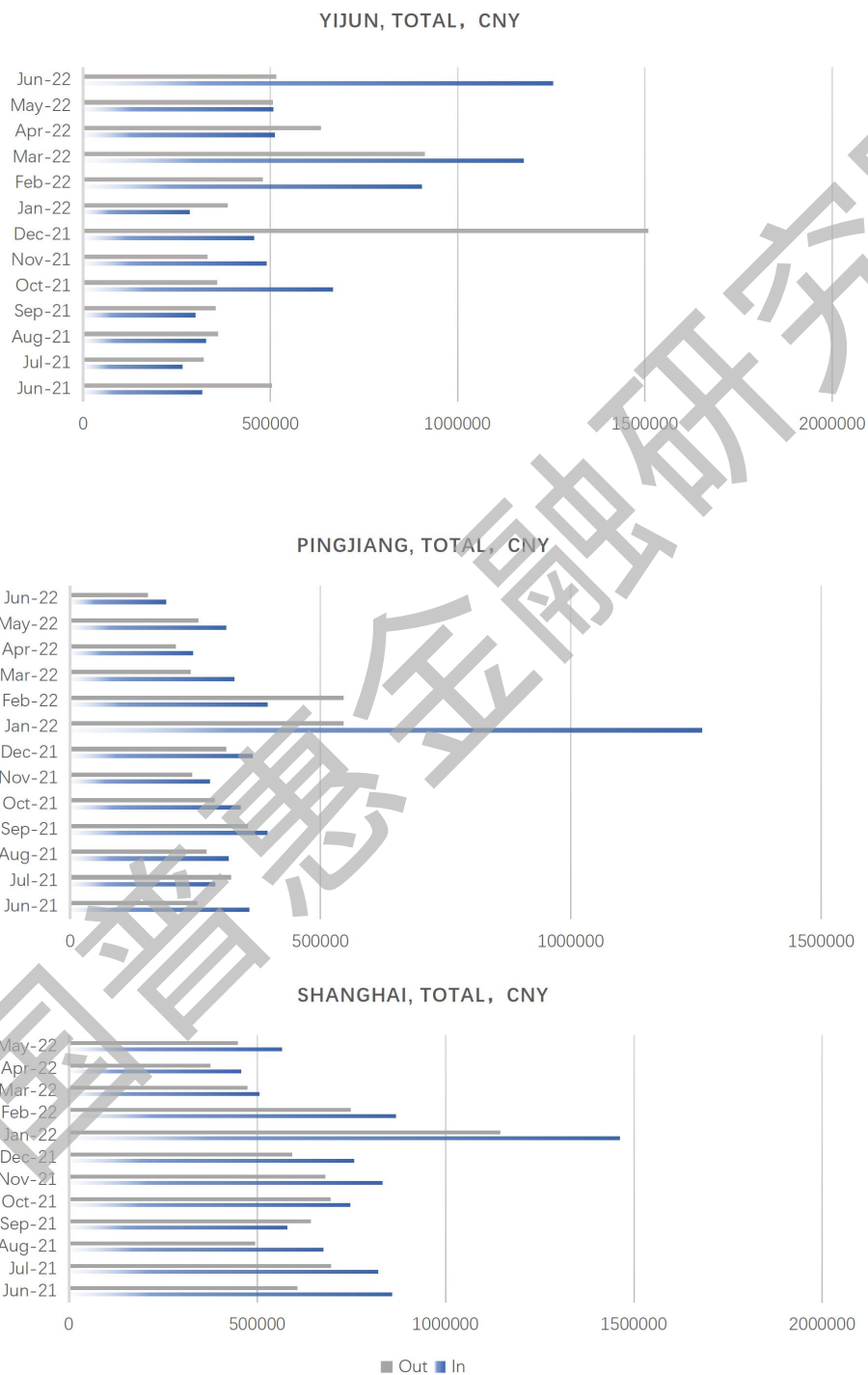


Figure 3. 1: Cash in-ou

Source: CAFI financial diary

■ Cash inflow and outflow tend to be highly heterogeneous between urban and rural areas

Table 3.1 indicates that cash inflow and outflow tend to be heterogeneous among these regions from June 2021 to June 2022 (until May 31st, 2022 for Shanghai). Small towns like Pingjiang and metropolitan cities like Shanghai show similar average out/in ratio, in> out month rate and out/in ratio volatility (measured by variance), while agriculture-dependent regions like Yijun exhibit different results.

■ Households in rural areas often suffer from cashflow volatility and deficit.

As shown in Table 3.1, surveyed households in Yijun experience an inflow surplus only for 46.15% of the research period (6 out of a total of 13 months), far below that for Pingjiang (84.62%) and Shanghai (91.67%).

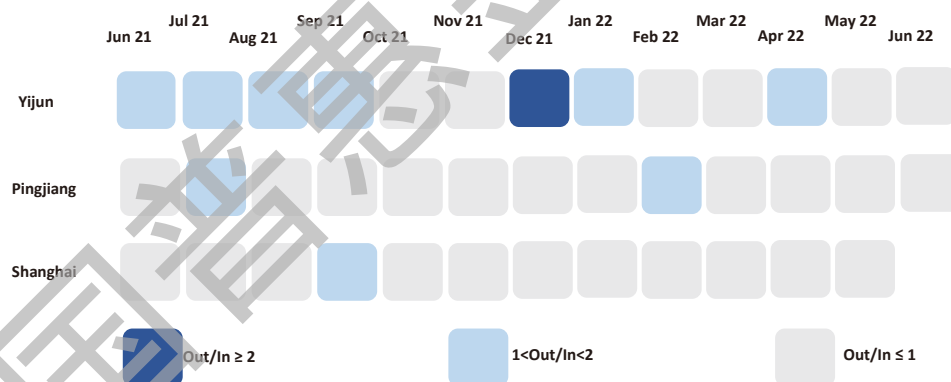


Figure 3.2: Monthly Cash Out-In features

Source: CAFI financial diary

As shown in Figure 3.2, Yijun county experiences an outflow surplus in most of the research period, for example, in June, July, August, September and December 2021 as well as in January and April 2022. Pingjiang only experiences an outflow surplus in July 2021 and

February 2022. Shanghai has an outflow surplus only once in September 2021. Obviously out/in volatility is much more common in rural areas than in Pingjiang (representative of small towns) and Shanghai (representative of metropolitan cities). During the research period, the sample range on out/in ratio reaches 2.89 for Yijun, 0.96 for Pingjiang and 0.4 for Shanghai. Variances for the three regions are 0.51, 0.04 and 0.01 respectively. Rural households suffer more from cashflow volatility than urban ones. Also, the month of outflow surplus for rural households are significantly more than that of urban households.

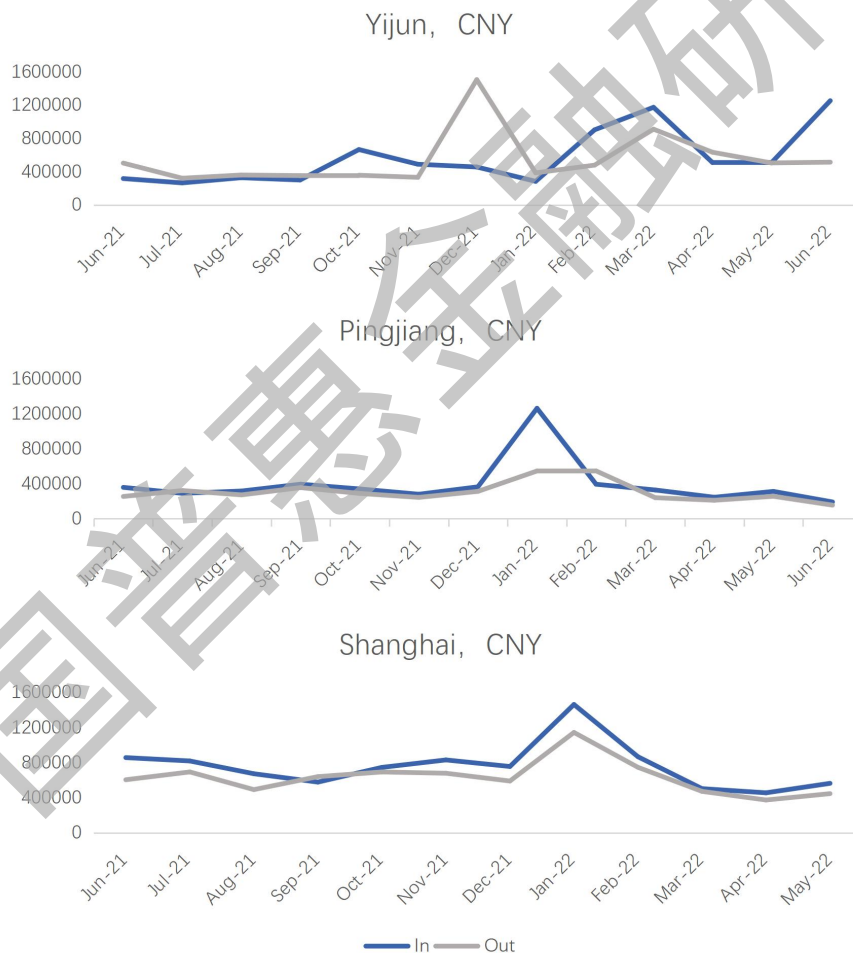


Figure 3.3: In-Out flow figure

Source: CAFI financial diary

■ The in-out imbalance found in rural households is affected by the seasonality of agricultural activity

Farm income contributes most to cash inflow of Yijun, whose financial balance positions thus changes with seasons. Surveyed households in Yijun mainly grow corn, walnuts and apples, while corn farming remains their most important source of income. These households have no income inflow when crops are growing during June 2021 - September 2021, resulting in an outflow surplus; the out/in ratio falls sharply during harvesting seasons in October and November 2021. The imbalance found in December 2021 and January 2022 is mainly caused by increased expenditures at year-end. The rise in out/in ratio in April 2022 is due to investment in agricultural production. In general, the in-out imbalance found in rural households is affected by the seasonality of agricultural activities.

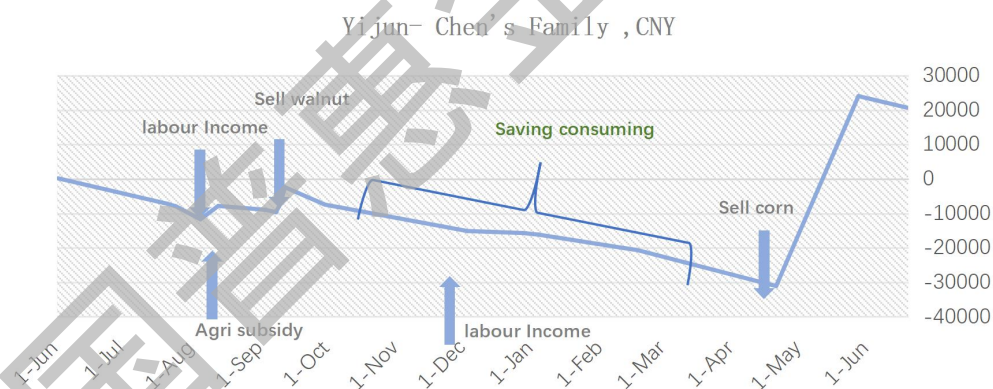


Figure 3. 4: Yijun Chen's family's in-out balance

Source: CAFI financial diary

Mr. Chen is a typical peasant at the age of 51 living in Tazhuang village in Yijun county. His household consisting of four members feeds on 43 mu (28,677 square meters) of land growing corn and 30 mu (20,000 square meters)

of land growing walnuts. After studying the in-out flow of Chen's family (Figure 3.4), we find that: Chen's family is one typical household that suffers from in-out imbalance due to the seasonality of agricultural activities; the family relies on face-to-face labor work as its second largest source of income apart from agricultural income. Sales of ripe corn and walnuts contribute to the two largest earnings in September and May (selling time may differ from ripening time when farmers choose to store harvested crops and wait for the best sales opportunity). While household income swells in these two months, these families still experience an outflow surplus in other months despite making extra money from face-to-face labor work and government subsidies, hence the in-out imbalance.

■ Such imbalance found in households often results from temporary changes in income and expense at certain critical timing.

As shown in Figure 3.2, Pingjiang experiences some massive in-out imbalance in July 2021 and February 2022, mainly because daily expenditure and education-related expenditure soar during summer vacation in July 2021 and because daily expenditure and money given as gifts increase during the Spring Festival in February 2022. The in-out imbalance in Shanghai households occurs in September 2021 when income level drops to a new low in the year while education- and health-related expenditure come to a new high.

"We have two kids and every year we always feel a bit pressure when paying for kids' school fees and living expense, as well as during the Spring Festival when we need to give money as new year gift." Mr. Deng said.

——recorded by CAFI research team in December 2021 in Pingjiang county, Hunan province

What we've learned from face-to-face interviews is consistent with the records in the financial diary. Households in Yijun rely heavily on farm income and most people work part-time or run a small business during slack seasons; sometimes they have to feed on savings from last year's farm income but still experience an outflow surplus in certain months. Households in Pingjiang rely little on farm income and thus have a relatively stable in/out ratio, yet they still experience in-out imbalance in certain months due to the seasonality of certain expenditures such as education-related ones and money given as gift. As cash outflow tends to be rigid for Shanghai households, the in-out balance is more sensitive to changes in income level. Changes in cash inflow and outflow in a household can largely reflect its income and expense status, reasons for which will be explored in the following section.

Summary for section 3.1

1. Cashflow volatility of rural households is much higher than that of city households in the sample. In terms of cashflow volatility, town families in the sample are more similar to city households.
2. There are 7 months when cash flow-out is larger than cashflow-in in Yijun sample, which needs to be concerned.
3. Agricultural production is the main reason for rural family cashflow volatility.
4. The volatility of cash flow in city and town families in the sample comes from fluctuations in major months, for example, major holidays, academic term start, etc.

3.2 Try to earn more

Mr. He from Pingjiang sits in front of a typical Hunan style fire grill holding a lit cigarette in hand: "I work at a nursing home for elderly people and also as a delivery driver; sometimes I work for 10+ hours a day." Researchers: "You have a stable income and live well. Why are you still working so hard?" Mr. He laughed and joked: "Since when do we Chinese worry about making too much money? I'm willing to exchange some spare time for extra money, as my wife and kids will feel more financially secure if we have more savings. Anyway, I have nothing else to do, so why not be a delivery driver?"

—— recorded by CAFI research team in December 2021 in Pingjiang county,
Hunan province

"I am employed in a foreign company. The salary is not very high but is enough to cover my daily expenditures. Since the work is not too busy, I take on some side jobs to make extra money during free time." Ms. Liu from Shanghai says to the researcher, "I am a gourmand girl and I enjoy stockpiling goods. Then I decided to make some money with my hobby and started a small business on Xianyu¹ selling kiwi fruit and others. I also have a part-time job, mainly writing and drawing, for a little side cash."

—— recorded by CAFI research team in September 2022 in Shanghai

As the Chinese saying goes, "opening up the source and regulating the flow of resources": income must be raised and expense must be cut down to earn wealth and improve the standard of living. Some consider source-broadening to be more important than expense reduction and thus perceive an increase in income to be the driving force for continuous escalation of

¹ Xianyu: A platform for second-hand trading, similar to Ebay and Gumtree

a household's financial positions. Understanding the features of income of individuals plays a vital role in grasping their financial needs. We analyse cash inflows and outflows in households in the previous section and will examine the features of income behind such cash flows in this section. Absolute value, stability and structure of income can largely determine a household's quality of life, financial resilience under risk and overall well-being. We categorize all recorded income entries (N=8192) in the financial diary into different groups to better understand the features of income of different types of households (categorization follows standards set by China's National Bureau of Statistics, which have been refined by the research team to enable better observation).

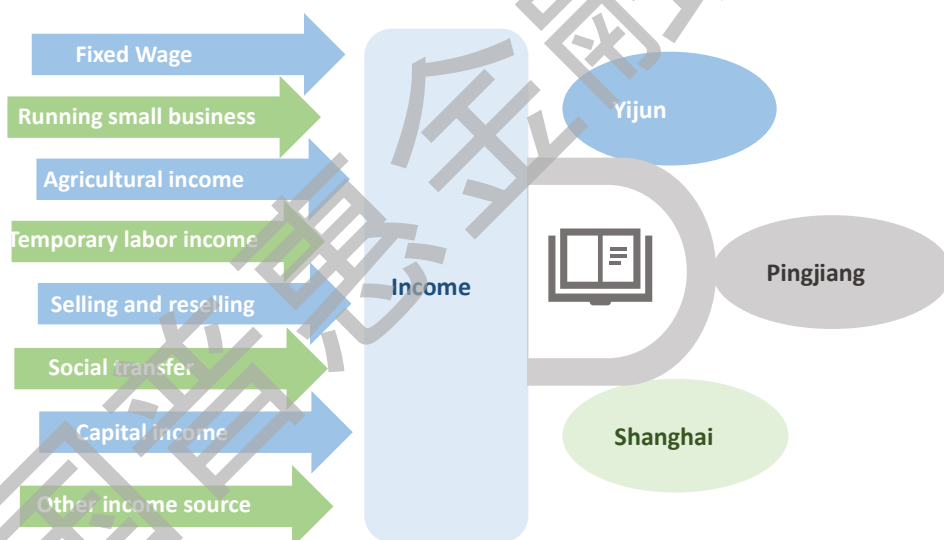


Figure 3.5: Income source classification

Types of fixed wage include fixed salary pay; income from running a small business such as operating income of private business owners and side money from running a business part-time; agricultural income, i.e. income from crop farming, livestock husbandry such as swine, cattle and sheep, and

fishery, etc.; income from temporary labor such as part-time jobs or helping in kitchens, etc.; income from selling and reselling such as trading of used goods and other non-recurring business, etc.; income from social transfer including family sponsorship, various kinds of subsidies (government authorities, e-commerce platforms and social communities, etc.) and other benefits (labor union and employing institute, etc.); capital income including interests earned and gains from adopting financial tools or house rental, etc.; other kinds of incomes that cannot be categorized or haven't been labelled. By labelling and categorizing these incomes, we're able to understand the structure of income of different households in these regions. We also record the absolute value and timing of recognition of income entries and integrate such data to create a database characterized by regional features. Follow-on investigation and face-to-face interviews are carried out to explore further interesting and innovative discoveries. The following features have been identified through data analysis and research investigation:

■ Individuals generally earn much less than provincial average

The first important discovery is the fact that earnings of households measured in absolute value are much lower than the provincial average.

As shown in Table 3.2, the per capita income of the households surveyed is relatively low and lower than the per capita disposable income of all residents in the province almost every month as reported by NBSC. In Yijun, there are only two months out of the entire bookkeeping period of 12 months where the per capita income of the households surveyed exceeds the per capita disposable income per month of Shaanxi province during the first half of 2022; the per capita income of all other months is far below the latter. The lowest achievement rate is 30.48% in December 2021. In some months, the per capita income is only slightly higher than \$2.15 per day, a poverty threshold defined

by the World Bank. The absolute value of income of the households surveyed does not look good.

Table 3. 2: Income per capita in every month (CNY)

Location	①	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21
Yijun	2484.3	947.9	778.2	990.1	870.8	853.2	1144.1
Pingjiang	2688.0	2319.0	1881.9	2024.1	2151.9	2227.1	1770.0
Shanghai	6499.3	4108.0	4464.2	4156.5	3612.3	3984.4	5178.0
Location	①	2021-12	2022-1	2022-2	2022-3	2022-4	2022-5
Yijun	2484.3	757.2	853.8	2649.0	3550.6	1508.5	1477.0
Pingjiang	2688.0	2360.9	7299.0	2573.1	2143.4	1589.9	1917.1
Shanghai	6499.3	4592.5	9157.8	3925.6	3153.4	2898.5	3654.1

Note: 1. ① = 2022 per capita disposable income in the province (CNY/Month)

2. Income per capita= total income of the families / average household size
(Yijun:3.64; Pingjiang:3.32; Shanghai:2.58)

Source: CAFI financial diary, National Bureau of Statistics of China (NBSC)

■ The sources of income of individuals differ for Yijun, Pingjiang and Shanghai

The second important discovery is the fact that the sources of income of households differ for rural villages, small towns and metropolitan cities if we consider Yijun, Pingjiang and Shanghai as the representatives of them.

By labelling and categorizing all income entries in the financial diary, we've classified sources of income of all households in the three regions as shown in Figure 3.6, which suggests that sources of income of the households differ greatly for these regions. Most households in Yijun county rely heavily on agricultural income (69%). The proportion of households feeding on fixed

wage in Pingjiang is similar to that of households running a small business (35%). Most surveyed households in Shanghai feed on fixed pay (81%). Obviously, there is a huge gap in terms of source of income between urban and rural areas.

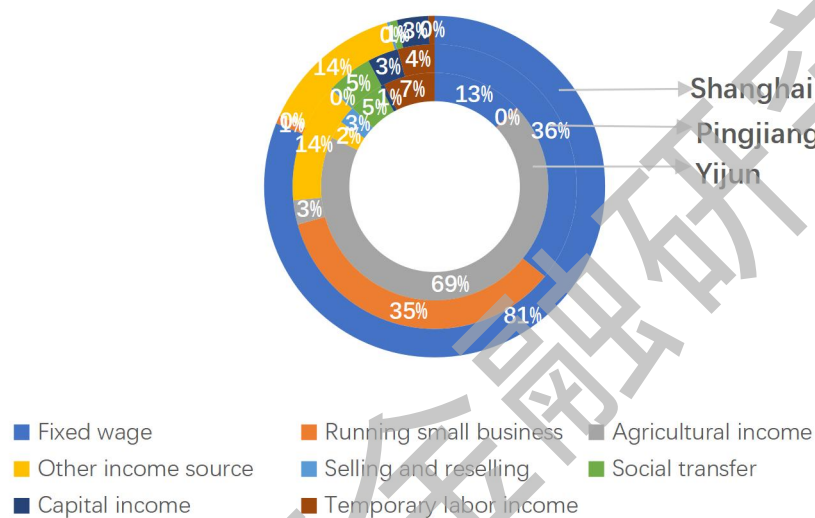


Figure 3. 6: Total income structure (Total income in the whole financial-diary year)

Source: CAFI financial diary

■ Sources of income tend to diversify in rural areas and small towns

"It reveals that diversification, not specialization, is the norm."

—— Davis et al (2010)

Income diversification in rural areas has been discussed in many pieces of literature. As Davis et al (2010) indicated that although agricultural-based sources of income remain critically important for rural livelihoods in all countries but the diversification of the income for rural households is also becoming more and more significant. Farmers turn to other sources of income

when the marginal gain from farm income declines. As shown in Figure 3.6, households in Yijun still feed on agricultural income. Why do we believe income diversification prevails in rural areas? By analysing the source of income of households in Yijun by month, we discover that as farm income tends to concentrate in a few months, sources of income of rural households still diversify in other months when agricultural products are not sold in large volume.

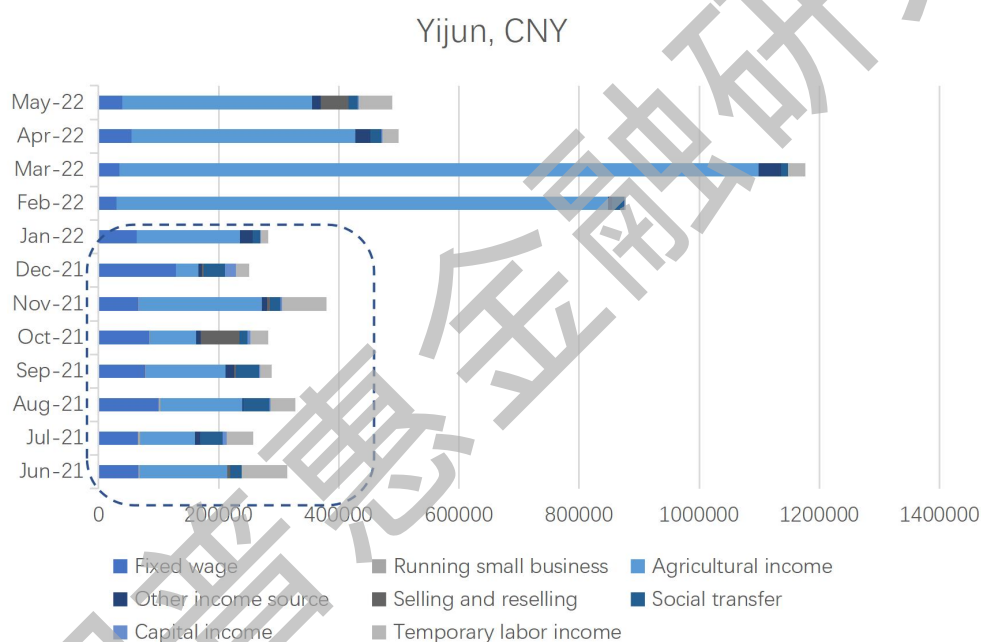


Figure 3.7: Yijun's Income and its structure

Source: CAFI financial diary

As shown in Figure 3.7, the months in dotted box refer to those when agricultural income is relatively low and thus sources of income tend to diversify. Fixed wage and income from temporary labor account for a large proportion of income in these months: agricultural income is no longer the primary source of income for farmers. Meanwhile, other options become

important sources such as permanent jobs, temporary jobs, part-time work and running their own business, etc.

Findings from scoping in individual household still support this observation. Take the financial diary of Mr. Lei's household from Yijun county as an example. Lei's household consisting of five members lives in Shiwulipu Village of Yijun County of Shaanxi Province, and owns 22 mu (14,667 square meters) of corn land and 5 mu (3,334 square meters) of walnut land. He also holds a job for a fixed income during slack seasons and occasionally works part-time at a high-speed railway construction site nearby. Income from permanent or temporary jobs has become an important source of income for Lei's family. Figure 3.8 shows that CNY45,100 out of the family's annual total earning of CNY89,260 comes from permanent or temporary jobs, accounting for 50.53% of the total, much higher than the share of agricultural income (39.21%). The trend is more common in small towns.

Mr. He's household, a typical three-person family in China, lives in a building in the suburban area in Fushoushan town, about an hour's drive from Pingjiang main town. The family has its own land but doesn't farm it. Mr. He has a job at the local charity house and works as a delivery driver.

"We have long quitted farming. The little money earned is not worth the effort. I get more stable income from another job and I do not need to worry about harvests. Sometimes I work as a delivery driver, which allows me more freedom. The earnings are enough to feed my family."

—— recorded by CAFI research team in December 2021 in Pingjiang county, Hunan province

As shown in Figure 3.8, farm income accounts for only a small proportion

of his household income, while earnings from fixed wage and temporary labor work become the most important source. Despite the fact that the family holds a permanent residence in rural areas and still lives there, it has already broken free from an agriculture-dependent income structure. The trend is extremely common in suburban areas, small towns and rural townships represented by Pingjiang, Hunan Province. As income diversification prevails in rural areas and small towns, instead of increasing farm income, it might be more rational to develop other business sectors in rural areas and increase rural households' non-farming income in order to boost their earnings in the future.

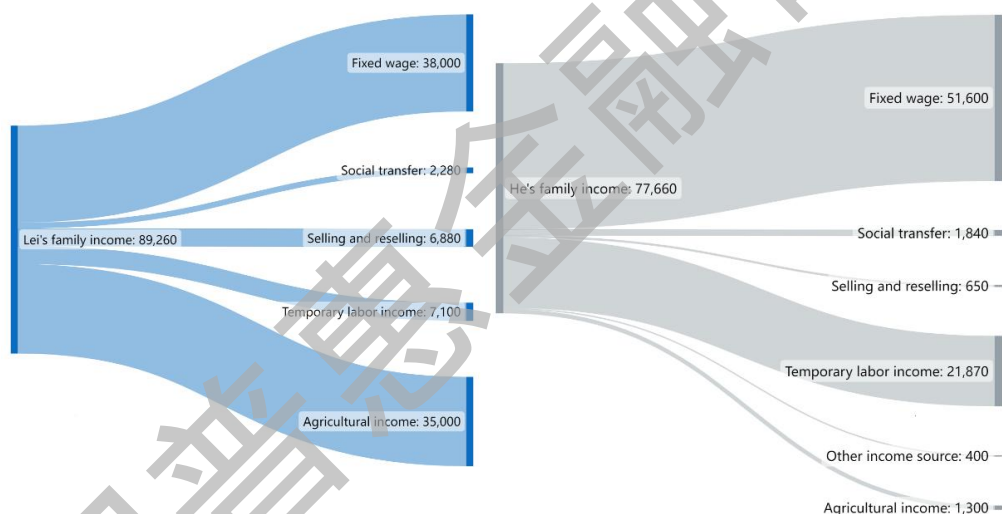


Figure 3.8: Yijun Lei's and Pingjiang He's families' income structures

Source: CAFI financial diary, Sankey MATIC

■ **Time of income recognition tends to be heterogeneous between rural households and urban households, while that for households in small towns resembles both**

Another important discovery: as shown in Figure 3.9, the time of income recognition tends to be highly heterogeneous between households in Shanghai

(representative of metropolitan cities) and in Yijun (representative of rural areas), while that of households in Pingjiang county resembles both. The time of income recognition varies greatly between urban and rural areas. Monthly income reaches the highest level of the year in January and February for Shanghai but in February and March for Yijun. Meanwhile, monthly income reaches the lowest level of the year in April and September for Shanghai but in January and July for Yijun. In Area 1 (in summer), features of income of Pingjiang households are similar to those in Yijun; In Area 2 (in winter and spring), income features of Pingjiang resemble those in Shanghai.

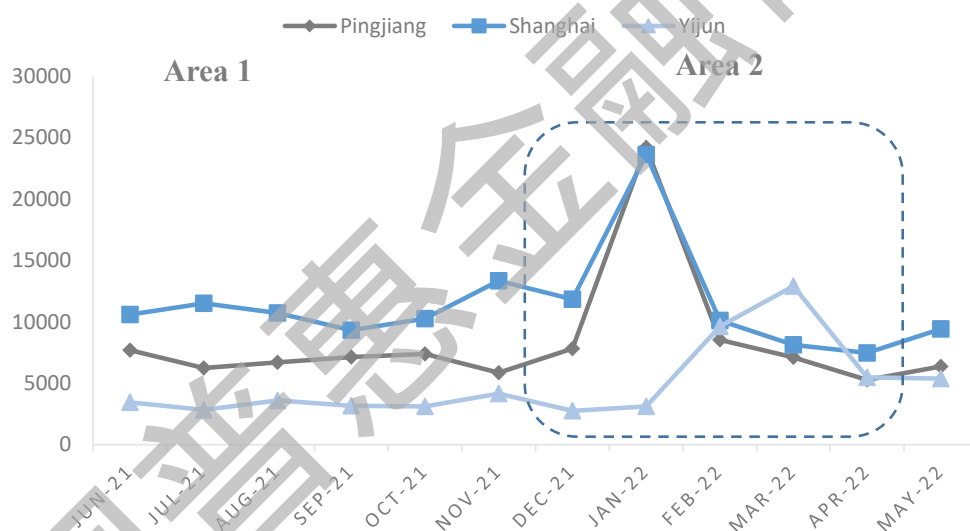


Figure 3. 9: Total income per household in three places

Source: CAFI financial diary

We find from face-to-face interviews that both Shanghai households that rely on fixed wage for a living and Pingjiang households that rely on a combination of fixed wage and business earnings value the lump sum of money coming in at year-end. Year-end bonus is a major source of income for wage earners; individuals that feed on business revenue also count on year-end sales

before the Chinese Spring Festival, which accounts for a large portion of their annual income. Therefore, the economic boom at year-end benefits individuals most.

Small towns like Pingjiang resemble both rural and urban areas. Yijun and Shanghai have little in common in features of income patterns. Understanding the time of income recognition is thus crucial for financial services to benefit target groups in the future.

■ Volatility of both income in general and non-wage income stays high in rural areas

"It's not just that the poor earn less, it's that income volatility compounds their struggles."

—— (Morduch and Schneider , 2017 , P31)

When studying the financial diary of US households, Morduch and Schneider (2017) discover that some poor households suffer from financial stress because of income instability rather than low absolute income (there is one case where the total annual income of a sample household exceeds the poverty threshold by 177%). Does the rule also apply to households in China?

In Figure 3.10 we draw a deviation map out of incomes of all three regions. Yijun has the highest income volatility, with 8 of the 12 accounting months showing the largest deviation and covering the largest area in the map. Obviously, Yijun (representative of rural area) has much higher income volatility than the other two regions. Therefore, based on the sample data, it can be inferred that rural areas have lower income volatility than small towns but higher volatility than cities. Is income volatility the major cause of financial stress suffered by households, as noted by Morduch and Schneider (2017).

We may not reach a conclusion here, as the consumption mode of households differs for China and US. For example, Chinese families have far fewer rigid bills but much more savings than their US counterparts. We will explore further into that at the spending section.

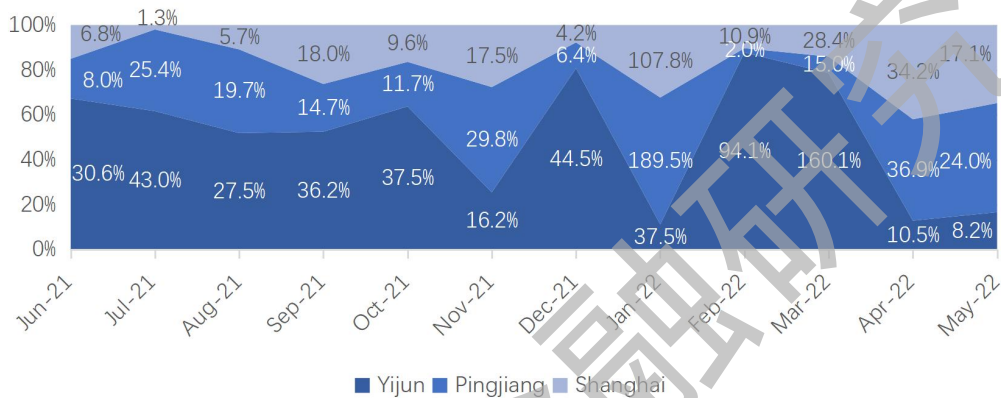


Figure 3.10: Deviation map

Note: 1. Deviation = $\text{Abs} \left\{ \left[\frac{(\text{income of the month} - \text{Average income})}{\text{Average income}} \right] * 100\% \right\}$

2. Y Percentage = $\frac{\text{Deviation of Place A}}{(\text{Deviation of Place A} + \text{Deviation of Place B} + \text{Deviation of Place C})}$

Source: CAFI financial diary

After analysing the income volatility of the three regions, we study the volatility of every single source of income, which helps us to understand income volatility in different types of households. Following Morduch and Schneider (2017), we calculate the Coefficient of Variation (CV) of various types of income in these regions. The CV of total household income in Yijun, Pingjiang and Shanghai is 0.61, 0.58 and 0.35 respectively, which is higher than the median of 0.34 for all US households involved in the US financial diary as suggested by Morduch and Schneider (2017). In particular, the CV of

Yijun samples and Pingjiang samples is respectively 79.4% and 70.6% higher than that of US households. Thus, it can be inferred that households in China's rural areas and small towns have higher income volatility than poor and near-poor US households involved in the US financial diary.

Table 3. 3: Coefficient of variation(CV) for different income source in 3 places

Coefficient of variation (CV) for different income source in 3 places				
	Pingjiang	Shanghai	Yijun	Average
Total	0.58	0.35	0.61	0.51
Fixed wage	0.38	0.41	0.40	0.39
Running small business	0.18	1.00	0.52	0.57
Agricultural income	1.80	0	1.03	1.41
Other income source	2.87	0.64	0.72	1.41
Selling and reselling	1.12	0.31	1.60	1.01
Social transfer	1.66	0.60	0.48	0.91
Capital income	0.58	0.92	1.20	0.90
Temporary labor income	1.49	0.89	0.61	1.00
Note: $CV = \text{Std}(\text{Monthly income}) / \text{Ave}(\text{Monthly income})$ Monthly income is the income of every month in financial-diary year				

Source: CAPI financial diary

Fixed wage is the most stable source of income, followed by income from running a small business and capital income, while agricultural income and other incomes are the most unstable sources with a CV as high as 1.41. It is not surprising to find high volatility with other incomes due to the randomness of occurrence (such as refund, lottery win and family sponsorship etc.). The volatility of farm income results from the seasonality of agricultural activities.

Therefore, for households that feed on farm income, the most efficient way for financial services to improve financial health of rural households is to contain income volatility in relation to agricultural production and to stabilize income from other sources when farm income decreases.

The CV of income from temporary labor, which is a key source of extra earnings of rural households, reaches 1, while the figure for Yijun is only 0.61. Pingjiang and Shanghai have a CV as high as 1.49 and 0.89 respectively. The result coincides with what we've learned through face-to-face interviews. Temporary jobs and part-time work must be maintained as these could act as a key source of income for rural households during slack seasons, while urban residents do so mainly to make use of spare time and improve standard of living.

"I am very flexible about working part-time. I take orders as I wish, and I don't care if there is none." Ms. Liu from Shanghai told the researcher: "Work is not busy in our company, so we get off work on time. Working part-time allows me to kill time after work while also making some extra money."

—— recorded by CAFI research team in September 2022 in Shanghai

Compared with rural residents who have no choice but to work during slack seasons, part-time work seems to be the icing on the cake for Ms. Liu. Therefore, it is important to secure non-farming income for rural residents first before improving the financial health of rural household. Encouraging fixed-wage earners to make side money in their spare time might also boost consumption.

■ Income loss is the key cause of financial difficulties suffered by households; the pandemic adds to its gravity.

"Teach a man to fish, rather than give him a fish."

— A Chinese old saying

As the old Chinese saying goes, if you give a man a fish, you feed him for a day; if you teach a man to fish, you feed him for a lifetime. Stable and considerable income has always been the foundation of happiness and well-being of households. What happens to households experiencing loss of major source of income? We conduct surveys towards all households involved in the financial diary to look for the answer. One of the questions goes like this: "Have you ever found your family's financial positions to be in trouble when experiencing loss of major source of income during the past five years?" Answers are summarized as below:

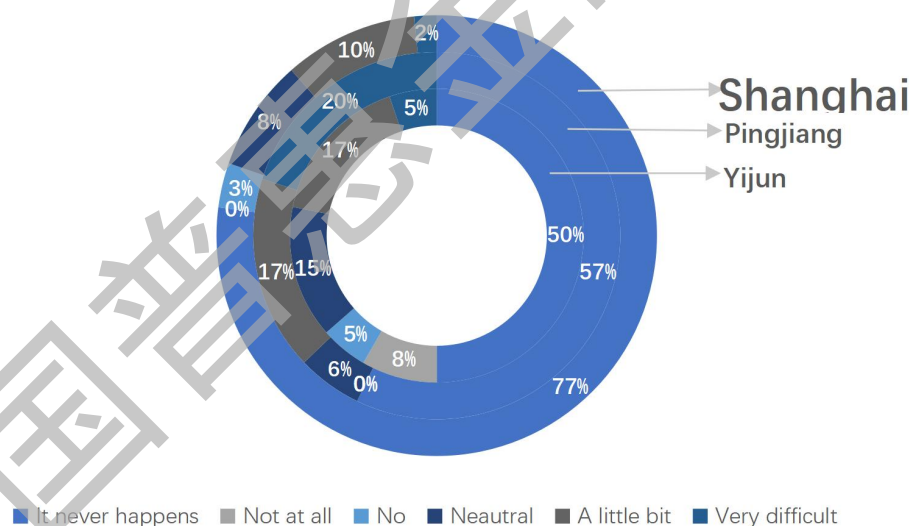


Figure 3.11: How difficult families are when they lost major income source in the last 5 years

Source: CAFI survey

During the past five years (2017-2022), 50%, 43% and 23% of households in Yijun, Pingjiang and Shanghai respectively have experienced income loss.

The figure still seems astonishing even if we understand the gravity of losing a household's major source of income. Households in rural areas and small towns are more vulnerable to the risk of losing their major sources of income than those in cities. Amongst all households that have experienced such loss in Yijun, 10% find it 'very difficult', 34% find it 'a bit difficult', 30% find it 'ok', and only 26% find it 'not difficult' or 'not difficult at all'. Amongst all households that have experienced such loss in Pingjiang, 47% find it 'very difficult', 40% find it 'a bit difficult', and only 13% find it 'ok', 'not difficult' or 'not difficult at all'. Amongst all households that have experienced such loss in Shanghai, 52% find it 'very difficult' or 'a bit difficult'. Figure 3.12 shows the mix of households that have experienced such loss as well as the proportions of surveyed households that find the loss to be 'very difficult' or 'a bit difficult'. It can be inferred that households in rural areas are more vulnerable to the risk of losing major source of income than those in small towns, which are more vulnerable than those in cities. It can also be inferred that after experiencing such loss, rural households find it less devastating than those in cities, while urban households find it less devastating than those in small towns. Therefore, we should not only care about income stability of rural households, but also consider relief for urban households, especially those in small towns that have experienced loss of major source of income.

Most financial difficulties encountered in households result from income loss, which is also one of the major 'killers' of family financial health and thus requires more attention. After the outbreak of Covid-19 in late December 2019, unemployment rate increased as a result of strict containment measures. How does the financial health of households look like in China which adopts the strictest containment policies?

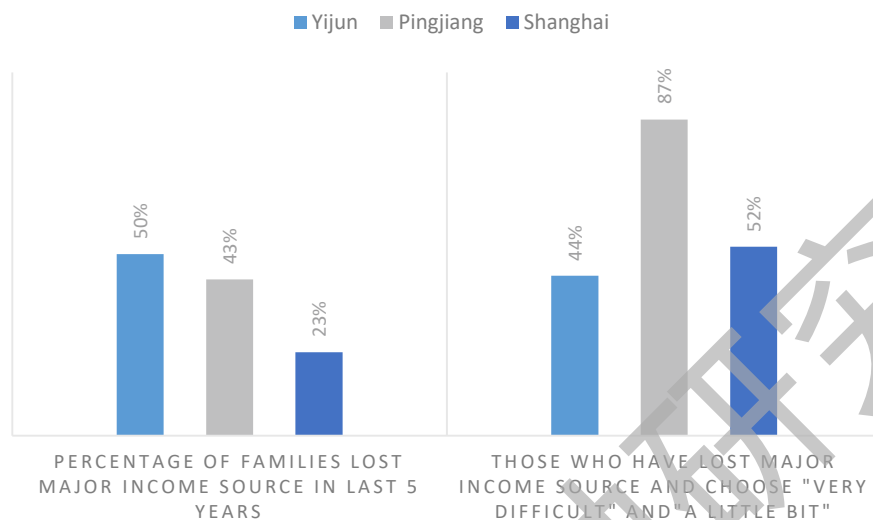


Figure 3.12: Percentage ranking

Source: CAFI survey

■ The pandemic has exacerbated financial difficulties in households

During the Covid-19 outbreak in late March 2022, Shanghai, the bridge of China's opening-up to the outer world, was the first to suffer and was locked down for 3 months.

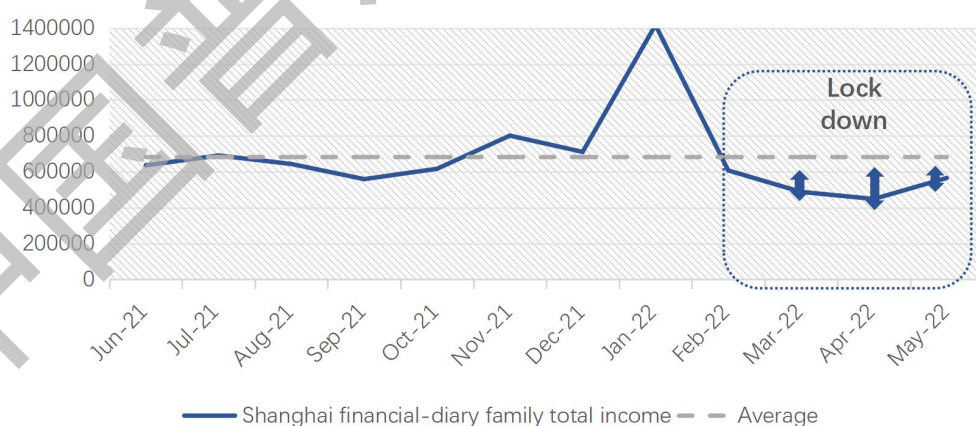


Figure 3.13: Shanghai income decline in lock down (CNY)

Source: CAFI financial diary

From a macro perspective, as shown in Figure 3.13, during the lockdown, income of Shanghai households involved in the financial diary drops sharply and deviates from sample average. In particular, in April 2022 when the pandemic strikes the city most, long-term, strict lockdown in many districts has resulted in significant decline in household income.

From a microscopic perspective, we visit Shanghai households involved in the financial diary after the outbreak, hoping to piece together stories and experience of households struggling to live through the pandemic.

"I lost my job as a sales woman because of the Covid." Ms. Shang said with a bitter smile on her face, "I could manage to support myself before without asking my husband or kid for money. But now I have to. And my credit card repayment was overdue because I cannot go out during the lockdown."

—— recorded by CAFI research team in September 2022 in Shanghai

According to Ms. Shang, she earns about CNY5,000 to 6,000 per month before the lockdown, which is enough to cover her daily expenditures if there is no need to visit a doctor. But when the city goes into lockdown due to the outbreak in late March, she loses all income from her job as a salesperson in a nursing house for elders; besides, as price increases during the lockdown, in-out imbalance begins to emerge in her household, which indirectly results in her failure to repay her credit card debt. The financial diary shows that Ms. Shang's family spends three times as much on family consumables in Q2 than in Q1. In other words, despite of decline in income, she spends more on food, daily necessities and miscellaneous goods but much less on social activities and entertainment, with total expenditure increased by 30%. According to Ms.

Shang, food price is much higher than usual during the lockdown when she has to turn to group-buying: a vegetable combo that cost CNY169 could only last for one or two days. Income loss and price increase during the lockdown have exacerbated the in-out imbalances in households.

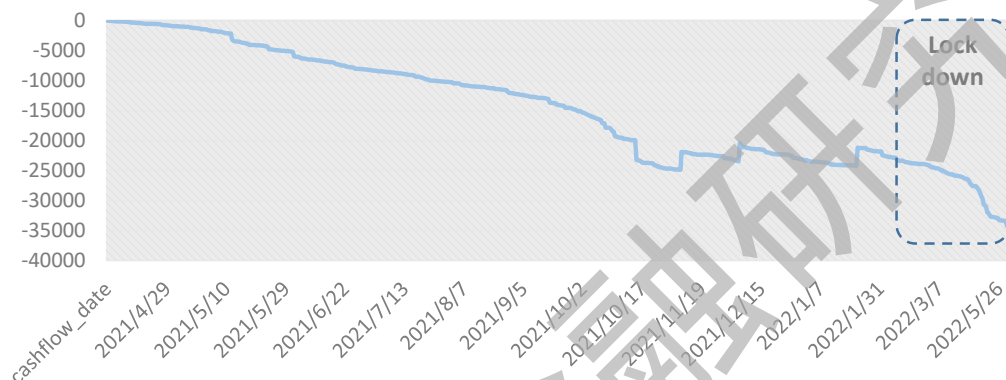


Figure 3.14: Shang's family in-out balance

Source: CAFI financial diary

Checking on the in-out balance in Ms. Shang's family, we find that the household's financial positions have fallen sharply since the lockdown, which is consistent with her story. The pandemic has exacerbated income difficulties in households.

"My family consists of 7 people. My father has brain cancer and I have three kids to support. I really don't know what to do in another outbreak like this." Mr. Xia, a private hire driver, said so while shaking his head.

— recorded by CAFI research team in September 2022 in Shanghai

Life is even harsh for Mr. Xia, a private hire driver. He left Henan, his home town, to become a private hire driver in Shanghai in late February. His

family consists of 7 members: his parents, him, his wife and 3 kids. His father has brain cancer and he is the only bread earner for this financially struggling household. The lockdown starts in late February when he has just arrived in Shanghai for about 20 days. He only gets a 10% discount on the rental cost as he rents from a private car rental company. Despite earning nothing, he has to employ his already-little savings to pay a fixed amount of 8,000 CNY per month for car and house rent, which adds to the family's plight.

We can tell from these stories that lockdown during the pandemic has caused and exacerbated income decline and even income loss among households, which surely has a significantly negative impact on their financial health.

Summary for section 3.2

1.The incomes of sample households are absolutely low. Not only the volatility of income causes the financial stress but also the absolute low- and middle-income. This is different from the US as suggested by Morduch.

2.The volatility of sample household income is significant, even higher than the US. Volatility of income is a major reason for financial stress.

3.The fluctuations of sample households' income have time features, which can be fixed by appropriate financial services.

4.The diversification of income source is significant in the sample. Accordingly, increasing non-agricultural income is an important approach for increasing the total income for rural area.

5.Losing income is one of the major reasons for financial stress for sample households. Compared with city households, rural households and town households are facing higher risks of losing income.

6.Income decline caused by external shocks (such as the Covid-19

pandemic) should not be ignored, especially for individual business holders, gig workers, etc.

3.3 Learn to spend is also important

A drizzle in the late autumn in Shanghai brought about sheer coolness. The researchers took a taxi through the Huangpu River Tunnel, and the magnificent night view of Pudong was unfolded outside the window. After winding a few intersections, the taxi stopped at the entrance of a small coffee shop. We were about to start our first interview in Shanghai.

After about ten minutes, Ms. Zhu walked into the coffee shop with her son, accompanied by the community worker in charge of this area's financial diaries. Ms. Zhu's son is a very lively boy who kept asking researchers to play with him. Looking at the exquisite desserts, even though it was 7 o'clock just after dinner, he requested: "Mom, I want this cake!" Ms. Zhu, who didn't refuse her son either, went right to the checkout counter and bought two cakes, with one of them for the researchers.

The price of such a cake was CNY38.

The boy was almost full after two bites, with two thirds of the cake left. Ms. Zhu took it and had two mouthfuls. Given Ms. Zhu's family is a representative of the families with decent financial conditions in the financial diary project in Shanghai, such a consumption scenario should not be a burden for this local family with an annual income of over CNY200,000, an apartment in Shanghai and no pressure to support parents. But what we heard during the interview seems only to reflect their tight financial situation.

"We get used to spending money without second thoughts, just buying everything we like. When we pay, we won't think they are expensive, but when

we keep accounts, these large or small expenses altogether turn out to be a big number," Ms. Zhu said, "it feels like money is gone quickly. Sometimes, in order to turn around, we have to borrow money from Weilidai or Ant Cash Now."

— Recorded by CAFI team in Shanghai in November 2021

The financial situation of Ms. Zhu's family is unexpected, but is real. We can't help but wonder, does a family with high income and almost no burdens (high mortgage, parental support pressure, etc.) necessarily mean sound financial conditions? The story of Ms. Zhu's family seems to answer this question: no.

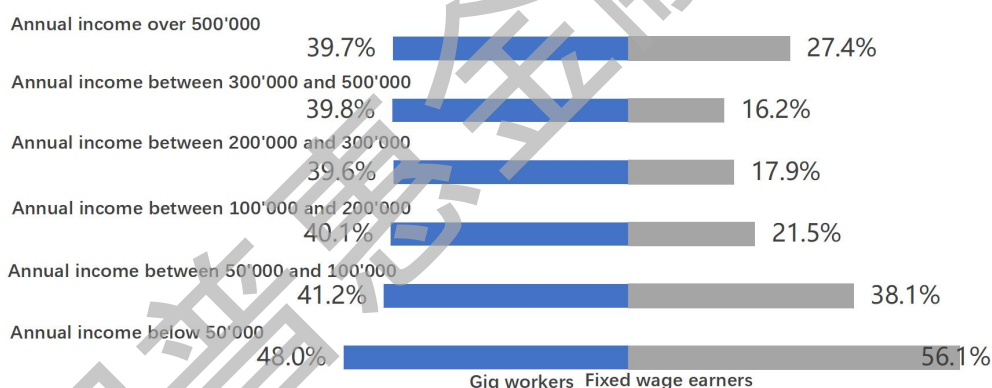


Figure 3.15: Percentage of "spending > income" (CNY)

Source: CAFI "Financial Health" survey (N=140211)

People usually think that a family fails to make ends meet because it runs short of money. According to the data of CAFI financial health survey, nearly 35.9% of the fixed-wage group and even 44.4% of the flexibly-employed group would see their income not enough to cover expenditure. Even among the medium and high income group, 40% would have the same situation (their

income is slightly or far less than spending). As shown in Figure 3.15, although the proportion of people that cannot make ends meet is indeed the highest among low-income groups, the figure hits 40% among flexible employees with an annual income of over CNY100,000, and even a quarter among the fixed-wage group with an annual income of above CNY500,000.

It can be seen that the way of spending is also an important part of determining a family's financial health. In this section, we will focus on the spending characteristics of families in our financial diary project, hoping to find out the problems that harm family's financial health, and explore the financial needs of low- and middle-income households in terms of spending.

At the end of the interview, Ms. Zhu said to us, "I want to thank this financial diary activity. I never knew I could spend so much money before. I felt I didn't splurge and all my payments were reasonable."

— Recorded by CAFI team in Shanghai in November 2021

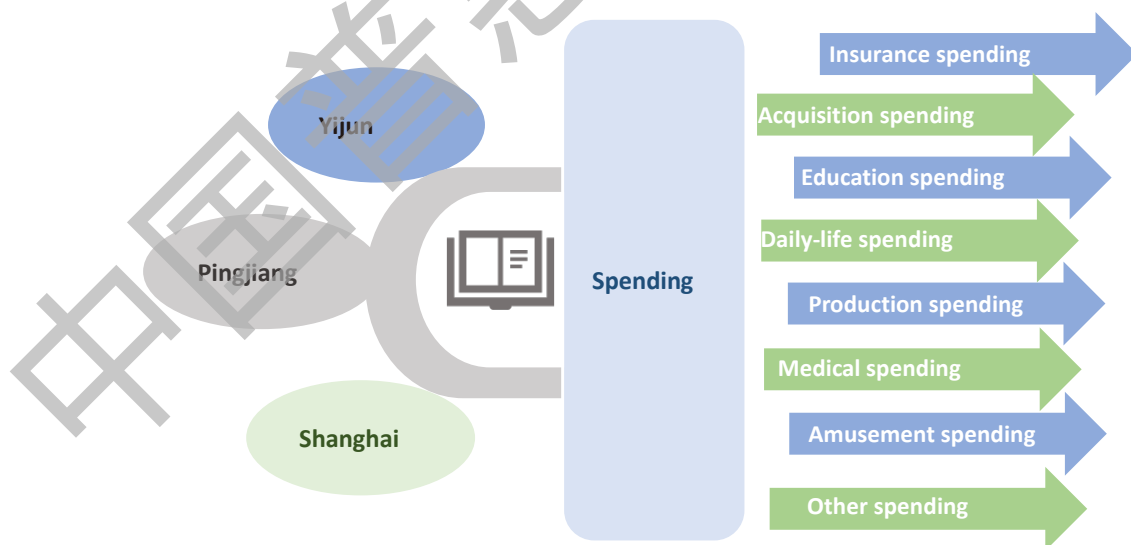


Figure 3.16: Spending classification

Before we delve into spending, we will make a rough classification for the recorded expenses. The spending can be divided into the following categories: (1) Insurance spending, which is indemnificatory expenses, including all insurance expenses, such as property insurance and life insurance (excluding financial insurance); (2) Acquisition spending, including the cost of purchasing assets such as household appliances, furniture, automobiles and farm tools; (3) Education spending, including school tuition, childcare expenses, after-school class tuition, stationery, books and miscellaneous expenses, etc.; (4) Daily-life spending, including daily necessities, food, transportation and other basic living expenses; (5) Production spending, including the cost of production and operation such as purchasing fertilizer, seeds, production tools, and purchasing goods; (6) Medical spending, including the cost of medical services such as medicine, outpatient services and hospitalization; (7) Amusement spending, including consumption of tobacco and alcohol, tourism, recreational activities, etc. and (8) Other spending, including expenses for other unspecified or unclassified consumption.

By classifying and counting the specific expenses, combined with the stories heard in face-to-face interviews, we found the following characteristics of the spending of low- and middle-income families.

■ **The spending patterns of rural and urban families are heterogeneous in time, while small towns show dual characteristics of both rural and urban areas.**

In the last section, we found that the income of rural and urban families is heterogeneous in time, while small towns have the dual characteristics of both rural and urban areas. Is such a phenomenon also applicable to spending? After drawing the following figure about the average monthly household expenses in the three places, we find that:

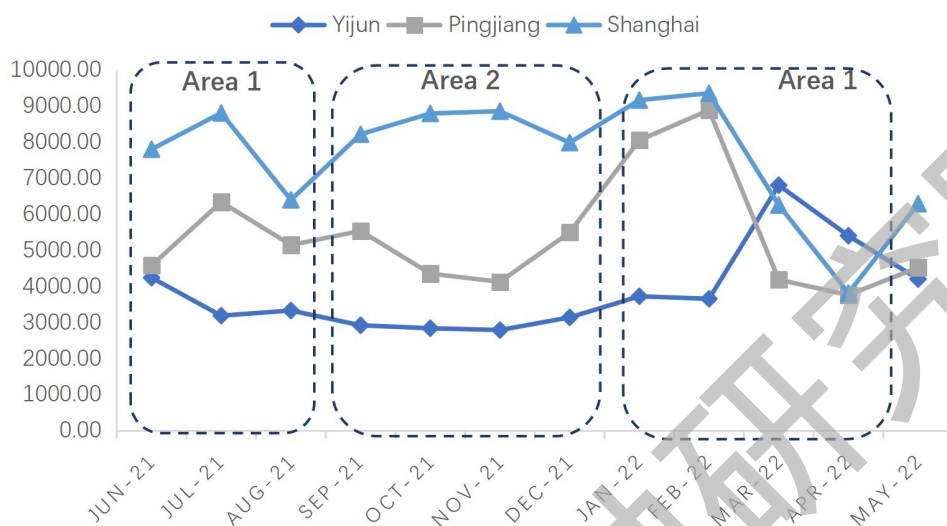


Figure 3.17: Average household total spending in 3 places

Source: CAFI financial diary

In terms of spending, the three places have the same characteristics. There are significant differences between Shanghai and Yijun, while Pingjiang has the characteristics of both the two places. The above figure shows that in Area 1 (from spring to summer), the changes in spending in Pingjiang was basically the same as that in the city of Shanghai, while in Area 2 (from autumn to winter), the changes in spending in Pingjiang were basically the same as those in Yijun, a rural area. It can be concluded that the small towns represented by Pingjiang have the dual characteristics of both urban and rural areas. The spending in cities usually peaks in October and February, mainly due to the commercially busy seasons in September and October (the so-called "golden September and silver October"), and the most important traditional festival in China - Spring Festival, respectively. Yijun, on the other hand, sees a different picture, with the spending peak coming in March (which varies from place to place, depending on the agricultural solar terms), because March is an important timing for the spring ploughing in China. A lot of production spending will be incurred, such

as seeds, fertilizers, agricultural machinery and manpower. This change is very similar to the change in income, which we infer is due to the increase in overall income during the "spring farming economy". Therefore, in rural areas with needs for agricultural production, the financial services to support the spending in crucial agricultural busy seasons are particularly important. Achieving a balance between agricultural expenditure and income and filling in the time difference to support farmers' lives, as well as preventing emergency risks from harming family well-being during this period will be one of the key points of inclusive financial services in rural areas.

■ **The spending structure in rural areas is different from those of cities and small towns**

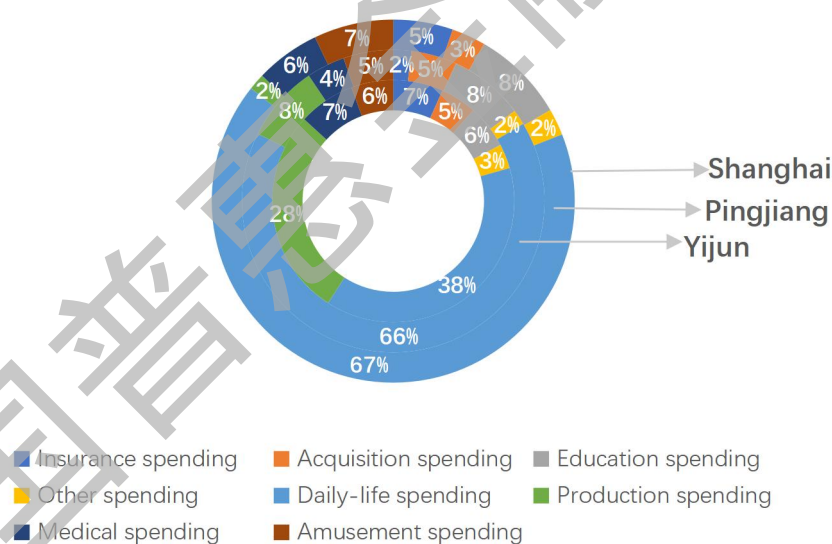


Figure 3.18: Spending structure

Source: CAFI financial diary

"Our expenses are mainly daily expenses at the usual time, but production spending will surge during the busy season. The prices of seeds,

fertilizers and manpower have all gone up, especially in our village where there are few young people now, which causes higher labor costs." Mr. Chen spoke to the researchers with a strong Shaanxi accent.

—— Recorded by CAFI team in Yijun, Shannxi in November 2021

We also found obvious urban-rural heterogeneity in the spending structure of the three places. Pingjiang (representing small towns) is very similar to Shanghai (representing cities) in terms of the spending structure, and the proportions of the components of spending are also alike, such as daily-life spending and education spending. Among them, the proportion of daily-life spending was about two-thirds, from which we estimate that the proportion of the daily-life spending of low- and middle-income group in cities and small towns was about two-thirds. In rural areas represented by Yijun, the ratio dropped to 38%, while the proportion of production spending rose to 28%, becoming the second largest source of spending. Insurance spending took up 7% of the total spending in Yijun due to a large amount of agricultural insurance, while in Shanghai, the figure came in at 5%, mainly due to the spending on property and life insurance. In contrast, Pingjiang's insurance spending is very low, which is noteworthy, in our view. For Shanghai, the largest city in China with developed businesses, its amusement spending ratio was the largest among the three places, hitting 7%.

We observe opportunities for financial services from the differences in the spending structure. For cities and small towns, financial institutions could provide personal credit for daily consumption, while for rural areas, they should pay attention to granting productive credit other than daily consumption credit.

■ Rural spending has high volatility, and the cause for the volatility vary in the three places.

Federal Reserve data show that only a little more than half of Americans report steady month-to-month spending while 44 percent say their spending bounces up and down from month to month.

—— Board of Governors of the Federal Reserve System (2015)

In the last section, we found that the income of households in rural areas tend to greatly fluctuate, which could largely affect a family's financial situation. So, will spending, as another important factor, fluctuate with the same characteristics? Morduch and Schneider (2017) indicate that the dips and spikes of spending and one thing after another have been common in the financial-diary families in the US, which is one of the important drivers of family's tight financial situation. In order to explore whether low- and middle-income households in China also face such problems, we counted the different types of spending in the three places, see Table 3.4:

Table 3. 4: Coefficient of variation(CV) for different spending in 3 places

Coefficient of variation (CV) for different spending in 3 places				
	Pingjiang	Shanghai	Yijun	Average
Total	0.28	0.21	0.30	0.26
Insurance spending	0.58	0.70	0.64	0.64
Acquisition spending	1.13	0.63	1.34	1.03
Education spending	1.00	0.75	0.56	0.77
Other spending	0.94	0.62	0.86	0.80
Daily-life spending	0.37	0.19	0.23	0.26
Production spending	0.78	0.81	1.01	0.87
Medical spending	0.50	0.73	0.62	0.62
Amusement spending	0.26	0.65	0.46	0.46
Note: $CV = \text{Std}(\text{Monthly spending}) / \text{Ave}(\text{Monthly spending})$ Monthly spending is the spending of every month in financial-diary year				

After analysing the fluctuations in all kinds of spending of families in the three places respectively, we found that Yijun remains the area with the largest volatility. Its CV value reached 0.3, which implies a weaker fluctuation in spending than that in income with a 0.61 CV value (Table 3.3). Yijun's daily-life spending CV was 0.23, lower than the total income CV value. Given the proportion of daily-life spending in Yijun's household total expenditure, we can infer that the largest contributor to Yijun's spending fluctuation is not daily-life spending, rather production spending, which took up the second largest proportion of the total. Yijun had a 1.01 CV value for production spending. For Pingjiang, the CV of its daily-life spending was 0.37, the highest compared with those of the three places and also higher than the CV of total spending of 0.28.

Therefore, considering Pingjiang's high proportion of daily-life spending, we believe the major source of Pingjiang's spending volatility is daily-life spending. We also think the reason why the CV of total spending was lower than that of daily-life spending, and was basically lower than those of all segmental expenses, is that all kinds of spending achieved a good balance in the book-keeping month. This means a relatively stable total amount has been formed, where the rising expenses for some items would decrease the expenses of the remaining items. The total spending CV of Shanghai arrived at 0.21, higher than the 0.19 of daily-life spending, which suggests that Shanghai's spending fluctuation was mainly contributed by other spending. Shanghai also saw the highest CV of insurance spending, medical spending and education spending among the three places, with the CV of education spending reaching as high as 0.75. We thus conclude that the medical, education, amusement spending would mainly contribute to the fluctuations in Shanghai's household spending.

■ The spending structure of families with different characteristics in age are notably different

"We are old and won't spend much money, but once we have to go to the hospital, especially being hospitalized, we come under great financial pressure." Mr. Zhao told the researchers.

—— Recorded by CAFI team in Shanghai in March 2022

"My family doesn't like to cook - we like to eat out. This cost is handsome. We also travel from time to time, take kids to Disney or shopping malls, or sign up for some after-school classes for kids. Then there comes the jumping spending." Ms. Zhu sighed, "Following the 'double-reduction policy', the tuition fees of interest-oriented classes surge, but they are necessary."

—— Recorded by CAFI team in Shanghai in November 2021

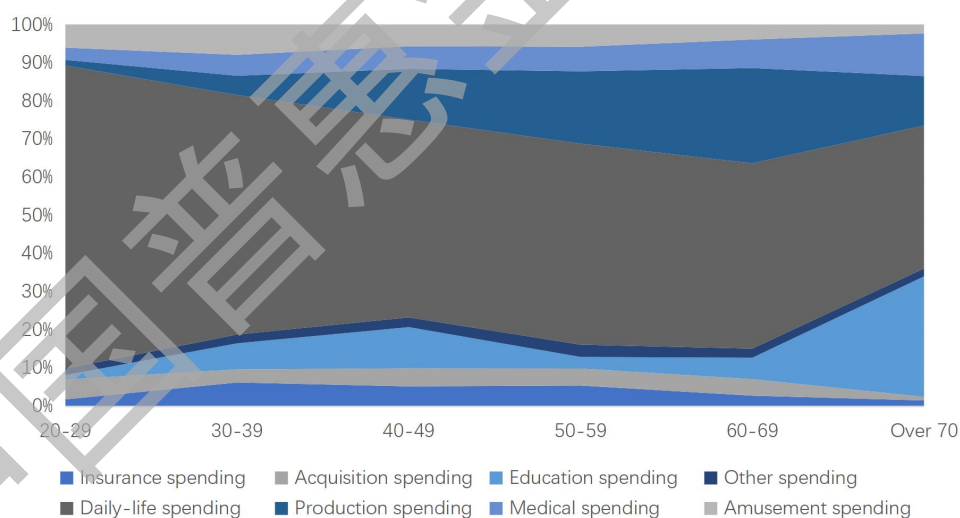


Figure 3.19: Spending structure for different family types

Source: CAFI financial diary

During our face-to-face interviews, we met all kinds of families, some

are seniors living alone, are young couples who just got married, are happy families of four with parents in their prime, and are big families of seven or eight. They show different age features, so we mainly consider the age of the householder (who contributes the major source of income or is in charge of accounts in the financial-diary families). From the spending structure of families of all ages in Figure 3.19, we find that insurance spending has taken up the highest proportion among families aged 30-39, and then remained stable among families aged 40-49 and 50-59. We are told that in families aged 30-39, insurances are mainly bought for younger kids. It is possible that families aged 30-39 have a stronger spending power in terms of insurance, especially life insurance, annuity insurance and education insurance.

"My boy is still in his early age, so raising him doesn't really cost much now. I choose to buy education insurance for him, which I see as a solid measure to save money for his future education." Ms. Dong told the researchers: "We have medical insurance for urban residents, and the supplementary insurance for workers. I don't really feel strong needs for insurance since we are still young."

—— Recorded by CAFI team in Shanghai in October 2022

The proportions of acquisition spending in households aged 20-60 had no significant different, but this kind of spending plummeted in households of seniors. Education spending peaked in households aged 40-49, as such families often have high school or college students, and the spending was not any lower in the 30-39 aged families, mainly due to the tuition fees of interest classes and after-school classes for their kids during the nine-year compulsory education. However, the dramatic increase in the proportion of education

spending in families aged over 70 should be caused by: (1) the existence of atypical samples when the sample size is relatively small; and (2) the lower other spending relative to education spending in such families, given that many elderly people help take care of their grandkids. The proportion of daily-life spending trended down from families aged 20-29 to families aged over 70. The share of production spending peaked in households aged 60-69. Considering production spending mainly comprises the purchase of agricultural materials and tools, we can infer that the middle-aged and elderly people over 60 has been the main population engaged in agricultural production in the sample. The proportion of medical spending trended up from families aged 20-29 to families aged over 70, with a notable increase in the families aged over 60, which echoes with very what we learned from our face-to-face interviews.

The story of Mr. Zhao who lived in Shanghai reflects the characteristics of the data. Mr. Zhao is a retired employee of state-owned enterprises. He lives alone and suffers from chronic diseases such as diabetes and hypertension. He complained that he had to spend a large share of his monthly income of over CNY5,000 on medical care. Although his financial pressure has not gone beyond the limit as he owns his own place and didn't spend much at the usual time, he still found it difficult to afford the medical expenses when he is hospitalized.

Mr. Zhao said: "I'm slow in response and understanding capability as an old man, so I'm definitely not going to seek help from commercial institutions even if I'm short of money. I will only ask for a favor from my family or friends."

—— Recorded by CAFI team in Shanghai in November 2021

In our view, we should pay attention to the high medical spending of elderly families, especially those seniors who live alone. How to make use of the inclusive financial ecosystem to make financial services creditable to the elderly and benefit them is a key consideration for inclusive financial development in the future.

The proportion of amusement spending was the highest in families aged 20-29 and 30-39, which we think implies that the cultural and amusement spending has become a significant part of household expenses among young people.

■ **The time features of medical and education spending are different in the three places, and families with children in cities tend to come under greater education pressure.**

Housing, medical care and education are generally regarded as the main sources of financial pressure facing China people. Many experts claimed that housing, education and medical care are the new three mountains in modern China¹, which have weighed on the consumption of China people. As most of our financial-diary families have their own housing, we pay more attention to their education and medical spending. In Figure 3.20, medical spending surged in the three places from October to November, especially in Shanghai. The period corresponds to the autumn when temperature dropped sharply. Medical spending peaked at the time. We think it is in particular necessary for families to watch their financial situations during this period so as to cope with unexpected medical expenses. In winter, there was also a small increase from January to February, but not as significant as that seen from October to November.

1 Vice president of CCEF (China Chief Economist Forum). <https://baijiahao.baidu.com/s?id=1717957159818490795&wfr=spider&for=pc>

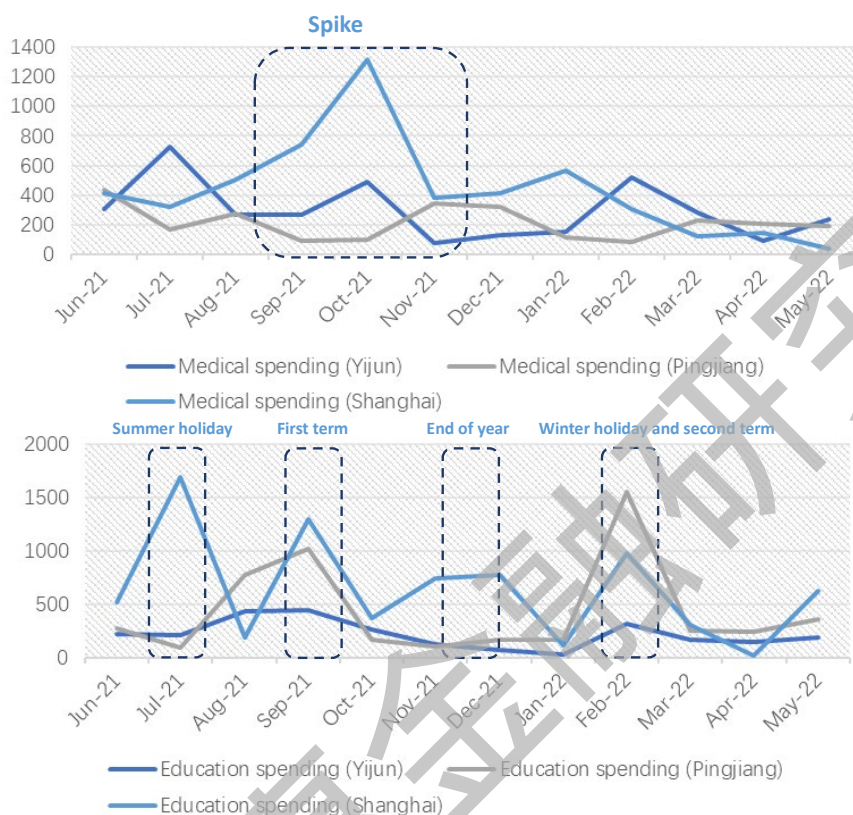


Figure 3.20: Household average Medical and education spending

Source: CAFI financial diary

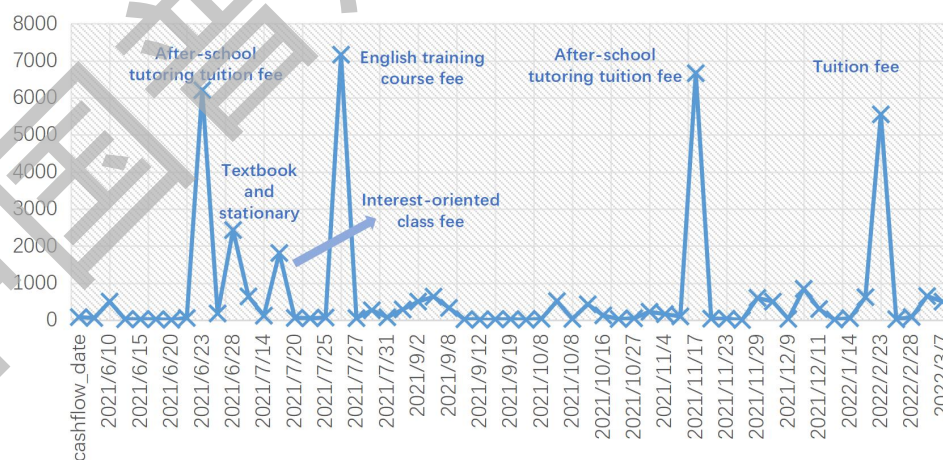


Figure 3.21: Shanghai Zhu's Family education spending

Source: CAFI financial diary

Education spending jumped during four periods of time in a year in Shanghai, namely, summer holiday, the start of the first semester, the end of the year, and winter holiday coupled with the beginning of the second semester. The spending mainly includes childcare spending and interest-oriented class fees during the summer holiday. The increase was significant in Shanghai but less notable in Pingjiang and Yijun. Similarly, education spending grew during the winter holiday, with the same case seen in Yijun and Pingjiang, which we think could be driven by school tuition fees considering that the second semester starts in February. We conclude that childcare spending and interest-oriented class fees of low- and middle-income families in big cities during summer and winter holidays result in the peak of education spending in a year, but this may not be the case in small towns and rural areas. Another high point appeared in September, which is the start of first semester, and all the three places saw education spending increase of varying degrees, especially Pingjiang and Shanghai. Education spending peaked at the end of the year in Shanghai, and the specific reason remains to be studied.

For further research, we selected Ms. Zhu's family in Shanghai as a typical family with educational burden and recorded all of its education spending during the accounting period. Ms. Zhu's family basically conforms to the pattern of education spending (Figure 3.20). There were two after-school tutoring tuition fees before and at the end of the summer holiday, both of which cost around CNY7,000. In the summer, there were additional tuition fees of interest-oriented class and the stationery and textbook expenses. Meanwhile, the English training courses arranged during the summer vacation in order to improve her kid's English cost CNY8,000. Her kid had just started elementary school, but the spending on interest-oriented and after-school tutoring fees during the holiday beat the expectations of the researchers.

"Although with the introduction of 'double-reduction' policy, my kid still takes after-school classes, only with higher tuition fees." Ms. Zhu complained.

—— Recorded by CAFI team in Shanghai in November 2021

In cities, tiger parenting is still common even after the introduction of the "double reduction" policy, which leads to a considerable spending for low- and middle-income households with children. Whether the parenting style is correct or not still subjects to discussion, in our view.

■ **Household spending plummeted amid COVID lockdowns, with notable changes in spending structure.**

"We are not allowed to leave home during the lockdown. We have no choice but to cook. Two meals a day is enough anyway. Fortunately, the landlord of the apartment we rented has a small courtyard and grew some vegetables, so we only need to buy meat via group purchase, which even helped save a lot of money." Ms. Huang told us in the video. The researchers were unable to interview with Ms. Huang face to face due to the pandemic lockdown.

—— Remotely recorded by CAFI team in Beijing in October 2022

The Figure 3.22 shows that the average monthly spending of low- and middle-income households in Shanghai plunged under COVID lockdowns.

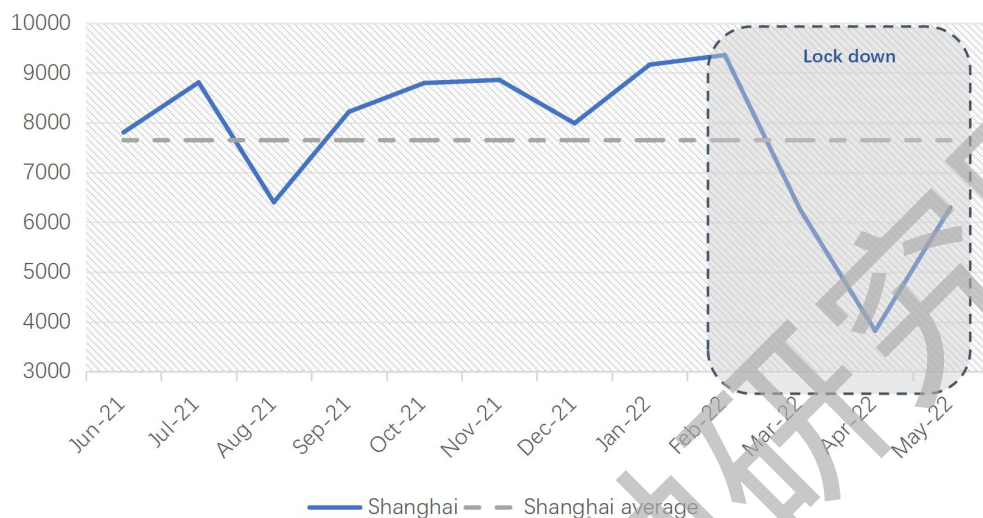


Figure 3.22: Shanghai household average monthly spending under lock down

Source: CAFI financial diary

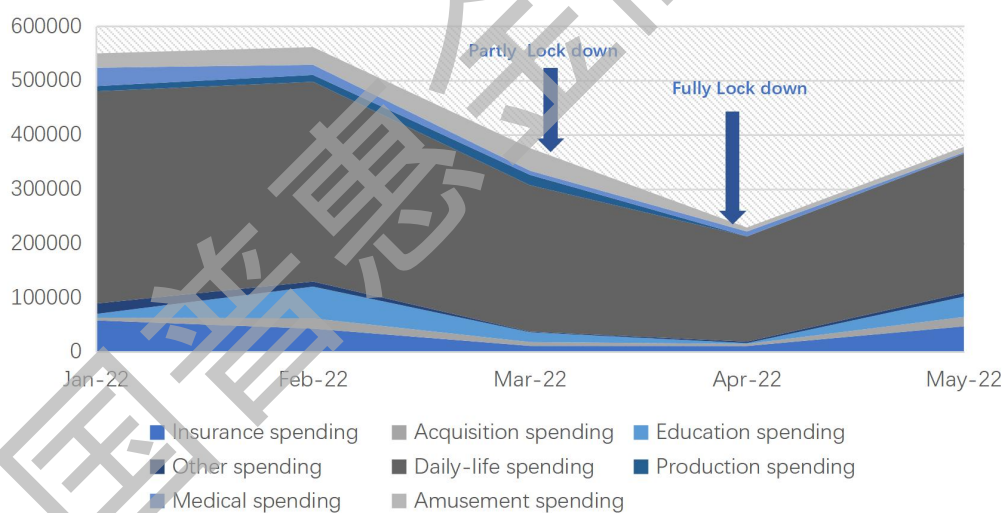


Figure 3.23: Shanghai Spending structure under lock down

Source: CAFI financial diary

In order to understand the impact of the pandemic on the spending and spending structure of low- and middle-income group, we carefully studied all the relevant data of Shanghai since January 2022. Some areas in Shanghai had

been under lockdown since mid-March 2022, followed by a citywide lockdown since early April 2022, which we think could be a natural experiment for studying the impact of COVID-19 lockdowns on consumption. We counted the expenses and the spending structure of all financial-diary families in Shanghai in Figure 3.23. We found that the sporadic pandemic outbreaks and partial lockdown since March led to a decline in household spending in Shanghai. Meanwhile, the proportion of other spending except for daily-life spending began to fall. After citywide lockdown kicked off in April 2022, household spending plummeted, and the structure became simple, with other spending except for daily-life spending basically disappearing. In May 2022 when the pandemic situation improved, although the lockdown continued but goods and materials were smoothly circulated, insurance spending, acquisition spending and education spending began to return to the pre-lockdown level, but other spending, such as amusement spending, remained at very low levels. Therefore, we estimate that the citywide lockdown could lead to changes in the spending structure of low- and middle-income families, especially the cut in the spending with higher elasticity, such as amusement, tobacco and alcohol, Renqing, travel, dining out, etc. After the lockdown control was lifted, the recovery of these spending remained slow.

■ Families with different income sources greatly vary in changes in spending and recovery resilience under the pandemic lockdown.

Ms. Dong, a social worker who works in a community street office in Shanghai, told us, "My husband and I both work in public institutions, so the lockdown has no effect on our income, nor on food or drinks; instead, we have to work overtime for anti-pandemic control."

Miss Liu, who works in a large foreign company in Shanghai, told to

researchers, "I was really touched that my company delivered food and snacks during the lockdown. I like stocking up at the usual time, and group buying is also very simple for our young people. I feel that (pandemic control) had little impact on me."

"They (job seekers and gig workers who came to Shanghai and lived in youth hostels) have no easy lives. I saw them often have instant noodles, as they cannot cook with limited living conditions and they don't have much money. They basically have nothing to spend." Ms. Dong told us.

"The things bought in group purchase during the lockdown were very expensive, and a bag of vegetables that cost CNY100-200 would soon be finished in two days. And it's very difficult for the elderly who don't know how to engage in group buying with their mobile phones. Then I helped them snap up food. They all appreciated my help." Ms. Shang said with a proud expression.

—— Recorded by CAFI team in Shanghai in September 2022

During the face-to-face interview, we heard opinions about the high costs during the pandemic lockdown. Some taxi drivers complained about the soaring prices of basic daily necessities and food, and some aunts who worked odd jobs complained that the household daily spending nearly doubled. However, there were people who worked in public institutions who felt that the food supply was still sufficient, and there were also some living in high-end residential areas who could buy a wide variety of food and daily necessities. This led to the deep thought of the research team. In order to better understand the situation of low- and middle-income households with different income sources under the lockdown, we selected several interviewed families as representatives to conduct a more in-depth study and drew Figure 3.24.

Dong's family, with the couple working in public institutions, saw a significant drop in spending during the lockdown. According to Dong's statement, the main reason is that food and daily necessities were distributed by their employers and community in an orderly manner, and they do not even need to spend money at the initial stage. After logistics improved in May, the family soon recovered to the pre-lockdown level, showing strong resilience in spending. Huang worked as a cleaner in a private enterprise, and her family spending also declined significantly during the lockdown, but the reason was completely different from that of Dong's family. The property owners of the courtyard rented by Ms. Huang's family grew vegetables by their own. Usually they are not willing to share, but did provide some vegetables to the tenant during the pandemic to help them tide over difficulties. However, different from Dong's family, Huang's household spending did not recover after May, remaining at a low level. Another Liu's family also experienced a significant drop in spending, which she stated was because she likes to stock up; and the foreign company she worked at have good welfare and sent food and daily necessities to employees for several times, which helped decrease the spending. After May, her household spending showed notable recovery momentum.

Shang's family is different from the three families. With a low retirement salary, Shang works as a part-time salesperson in a nursing house, which has no welfare. Amid the COVID lockdown, the spending of Shang's family surged. She said that her family could only depend on group buying to get all food and daily necessities, which was very expensive, reaching two to three times that of usual, which boosted household spending. Liu and her husband worked in private internet enterprises with handsome salaries, but relatively inadequate welfare. Their spending reached a short-term high in April, and began to fall back in May. She said: "During the lockdown, we can only rely on group

purchase, and the prices went up a lot. Given other expenses were saved, the overall effect was okay for my family."

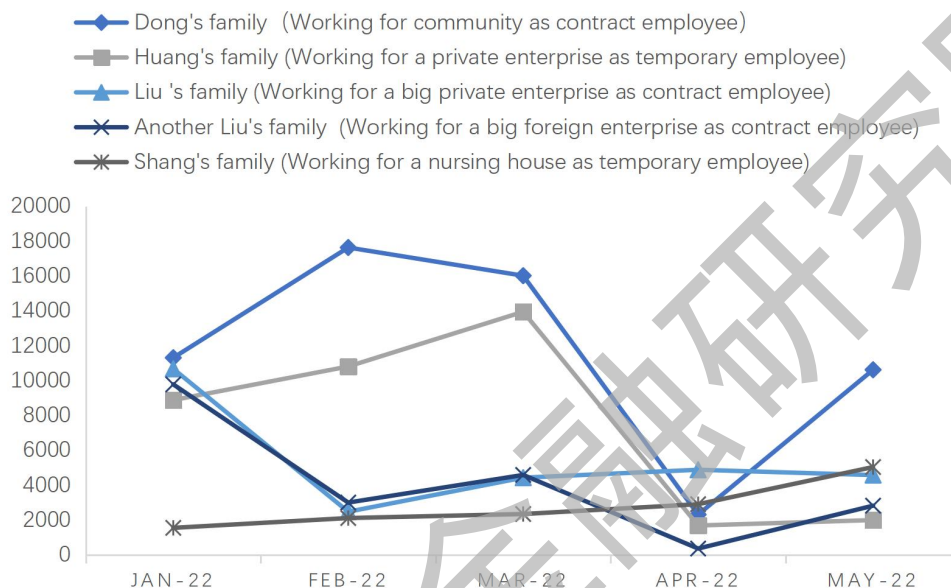


Figure 3.24: Spending change during the lockdown for 5 typical families

Source: CAFI financial diary

Based on these stories and the relevant data, we conclude that the impact of anti-pandemic control measures has been very different in various families, and the resilience of spending recovery of families with different income sources vary. For low- and middle-income households with better security and welfare, such as those who work in public institutions or semi-public institutions, large enterprises and foreign enterprises, their spending declined due to the lockdown, but later recovered rapidly after the reopening, showing high resilience. However, for casual workers, employees of small private enterprises, or self-employed individuals without sound security and welfare, the price hikes during the lockdown would lead to an increase in their spending, and their recovery after reopening was softer than that of groups with good

security.

Summary for section 3.3

1. "Income barely covering spending" problem is not only existing in low-income families but also in high-income families, so spending is also important for financial health.

2. Spending fluctuations also have time features which reveal many possibilities of financial services.

3. In the sample, spending structure in rural families is significantly different from town families and city households.

4. In the sample, the main reason for spending volatility in Yijun is agricultural production. For Pingjiang, it is daily-life spending. For Shanghai, it is education, medical and amusement spending.

5. In the sample, spending structures for families with different age features are significantly different. 30-39 families spend more in insurance than other families. Medical spending is significant for old-age families, which should be paid more attention to. Production spendings are happening most in 60-69 families, indicating the aging trend of rural farmers.

6. In the sample, medical and education spendings are time featured. Financial stress from medical spending is more significant in rural families while financial stress from education spending is more significant in city households.

7. External shocks (such as Covid-19 pandemic) affect spending as well. Pandemic control measures change the spending volume and structure significantly. The resilience and recovery for families with different income sources are quite different.

3.4 Never underestimate Renqing¹ costs

Pingjiang is a small county located in the mountainous area of northern Hunan Province, with rolling hills and crisscrossing rivers. The streets were filled with brand-name shops that can be seen in counties nationwide. Cars and people flowed in an endless stream.

At night, the streets under neon lights would make one feel like being in a city. The research team walked on the road of Pingjiang County, finding that there were many people here, but with less young people. Like other counties in China, Pingjiang is also faced with the "silver tsunami" crisis.

At first light the next day, the research team got on the bus to Fushoushan Town, a subordinate of Pingjiang, looking to interview several financial-diary families. The car ran on the winding national highway, passing by one residential building after another at a rapid speed. Researchers found that every few kilometers, there were a few red or blue inflated arches at the village cross-sections with some Chinese characters celebrating a wedding or a funeral, some even for birthday parties. We asked the locals, "Do hosting a feast a must for social interactions such as weddings, funerals in Pingjiang?" The locals smiled and said in an incomprehensible Hunan accent, "We have to host a feast for everything here. People even wish hosting a feast to celebrate a motorcycle purchase. You can't just go to others' feasts without hosting your own ones, otherwise you are just losing money. Then a vicious circle is formed."

Locals in the county town should at least give CNY500 when attending the banquet of regular friends, while the average salary in Pingjiang was just above CNY2,000.

This caught our attention. Social interactions are a very important part of the lives of human beings who are social animals, and will thus inevitably

¹ Renqing: Chinese people often contribute financial support (Cash, not gift) to relatives and friends for weddings, funerals, moving-in and many other activities.

lead to social transfers accordingly. In order to study the social transfer caused by the social interactions of low- and middle-income families, we dig deep into this kind of book-keeping in the financial diaries, and divide it into three categories: (1) Relatives internal transfer, which is internal transfers between relatives; (2) Social interaction cost, which mainly includes Renqing costs, cash given for weddings and funerals, red envelopes (including electronic red-envelopes), etc.; and (3) Other social transfer, mainly other social transfers not specified. We counted the value of the average household social transfer in the three places, which did not distinguish in or out, with an aim to count the monthly intensity of social transfers in the three places. The Figure 3.25 shows that among the three types of social transfers, social interaction cost took up the largest share, which includes the cash given for attending weddings and funerals, red envelopes between friends, etc. Other two categories had relatively low portions. However, in Yijun, relatives internal transfer still accounted for a certain proportion, which shows that the financial support and interactions between relatives are more often seen in rural areas than in small towns and big cities. Social interaction cost, also as known as the "Renqing" cost in China, took up the largest proportion in social transfers.

"We usually don't spend much, but there is huge pressure from attending a banquet that involves cash giving or Renqing in Pingjiang, especially during holidays, like Chinese New Year, when we usually give red envelope or lucky money. Here, locals will host a feast for everything, ranging from weddings and funerals to all kinds of small things, especially in rural areas." said Mr. Lin, who lives in Fushoushan Town.

—— Recorded by CAFI team in Pingjiang, Hunan in December 2021

In absolute terms, due to the higher income and spending standards, the monthly social interaction costs per household in Shanghai was the highest among the three places, reaching CNY1,702.16. After excluding the excessively high amount incurred in January, the figure would arrive at CNY1,024.15. The numbers in Yijun and Pingjiang was CNY742.25 and CNY933.45 respectively, with higher proportions of the monthly in-out flow volume than that seen in Shanghai. To reduce the influence of the excessively high amount seen during the Chinese New Year on the value of social interaction costs, we exclude the month to count average monthly social interaction costs as percentage of the monthly in-out flow volume, see Figure 3.25. It shows a decreasing trend from Yijun to Pingjiang to Shanghai. Therefore, our conclusion is that the financial pressure from social interactions in rural areas is greater than that in small towns and then cities, which is one of the factors affecting the financial situation of families.

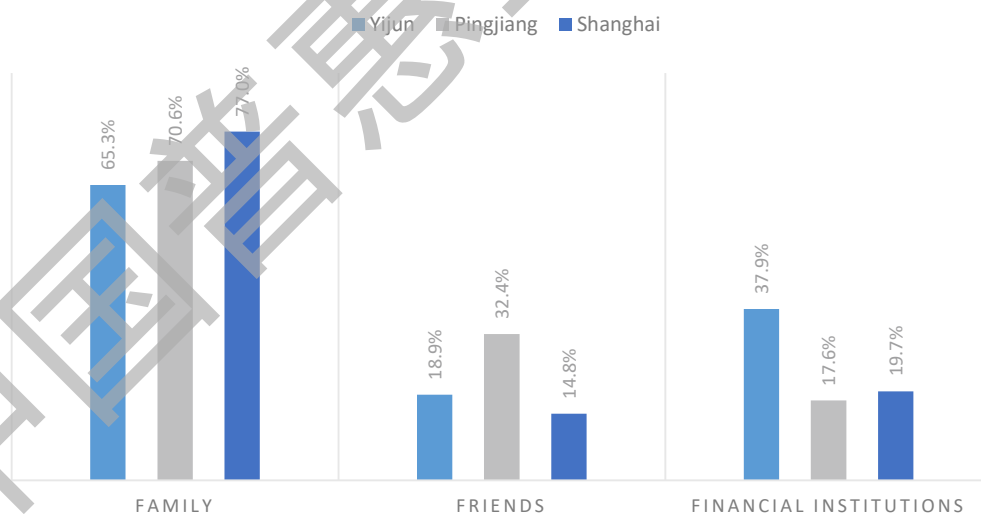


Figure 3.25: Ratio of social interaction costs volume per household accounting for monthly in-out volume per household

Source: CAFI financial diary

In addition, social interaction costs in the three places reached the highest during the Spring Festival, namely January and February. The concentration effect of Shanghai is much higher than that of Pingjiang and Yijun. Therefore, during important holidays, we should pay attention to the impact of Renqing costs on the financial situations of low- and middle-income families; meanwhile, we should advocate a healthy and appropriate way of social interactions.

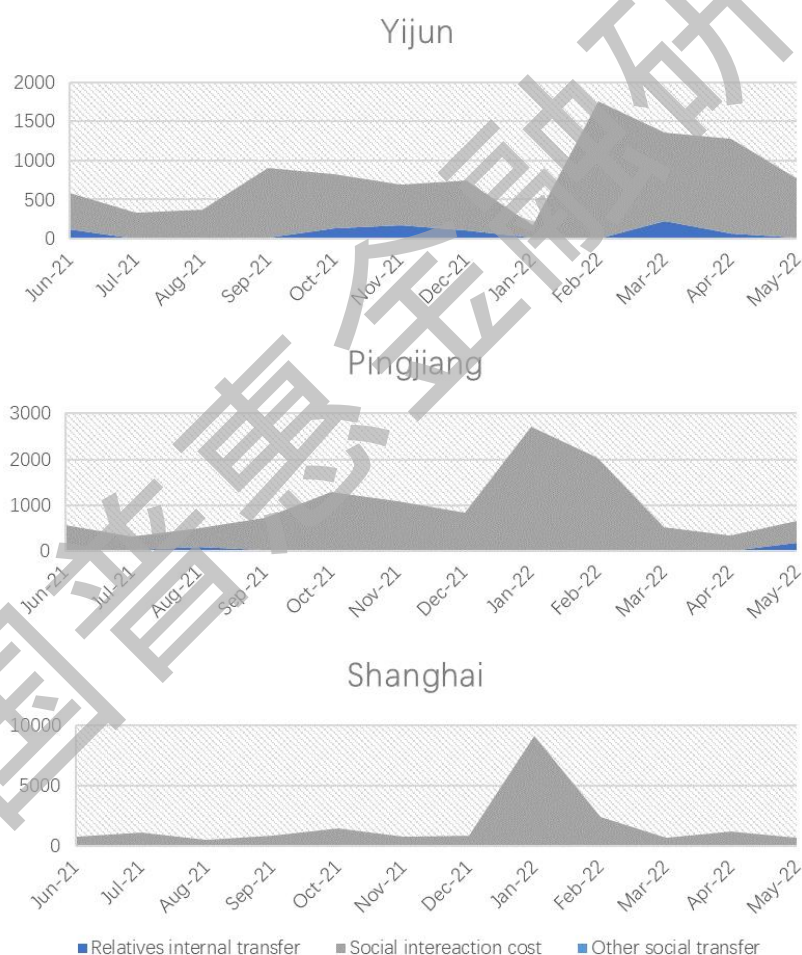


Figure 3.26: Household average social transfer in 3 places

Source: CAFI financial diary

"The cash giving thing for Renqing has gone too far now. Sometimes we have to spend thousands of yuan a month, which is really stressful for us." said Ms. Luo, who lives in Pingjiang County.

— Recorded by CAFI team in Pingjiang, Hunan in December 2021

We can't help but ask, as low- and middle-income households with relatively low social status and social power, does the money exchanges during social interactions benefit families in terms of net flow-in or harm them in terms of the net flow-out? Based on all the book-keeping figures attributed to social transfer, we calculated the proportion of in-flow volume in the total flow.

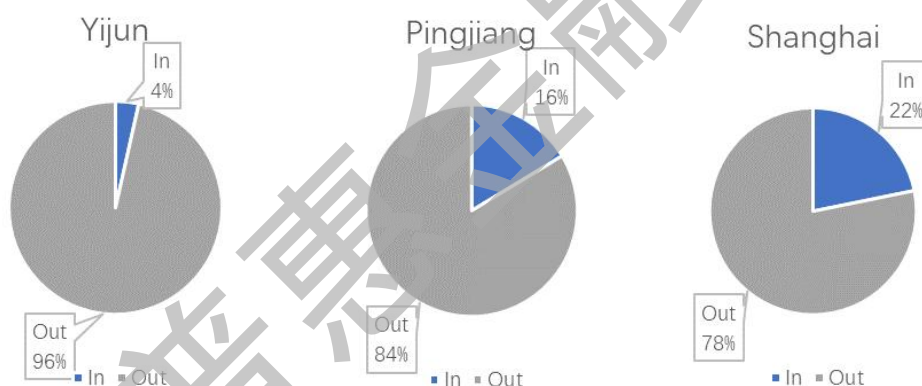


Figure 3.27: In-flow / (in-flow+out-flow) in social transfer

Source: CAFI financial diary

From Figure 3.27, we are surprised to find that the ratio was only 4% in Yijun, while 16% in Pingjiang and 22% in Shanghai. We think there are two reasons: first, technically, because the money giving amount was evenly distributed in several years, while money collection occurred was more concentrated, there may not be a large number of families collecting Renqing money during the financial-diary year; second, in reality, as low- and middle-

income families have lower social status and social power, they are in a weak position during social interactions, which is reflected by higher outflow than inflow. In practice, we found that the poorer the region is, the higher the relative social interaction costs will be after eliminating the absolute income gap. Therefore, eliminating this vicious circle of Renqing costs is also a possible way to ensure the financial stability of low- and middle-income families.

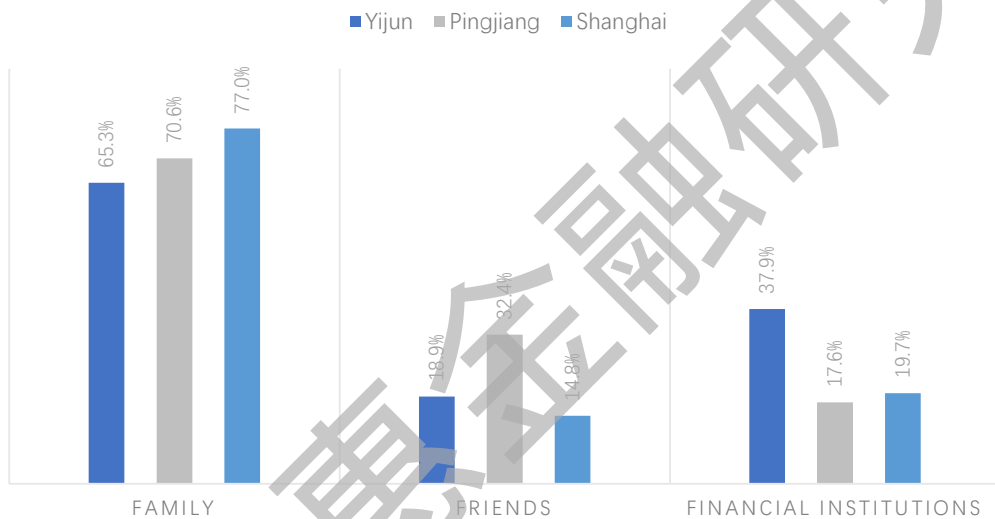


Figure 3.28: "Whose help would you like to ask for when your family members are hospitalized and you don't have enough money?" question answer

Source: CAFI survey

China is a society that values Renqing, where social interactions and transfers are a very important channel for interpersonal communications, so we should not completely resist Renqing costs. According to another survey of all financial-diary families, "Whose help would you like to ask for when your family members are hospitalized and you don't have enough money?", we can see that in China, if running into emergency or difficulties, most people would seek help from family and friends, rather than borrowing money from financial

institutions, and the gap was very notable. Therefore, social interaction is a crucial part of low- and middle-income families in China, which should not be completely rejected, but we need to avoid the vicious circle, which could aggravate the financial difficulties of low- and middle-income families.

Summary for section 3.4

1. low- and middle-income families are facing financial stresses in major holidays due to Renqing.

2. In the sample, because of relatively less social power and social resources, low- and middle-income families are disadvantaged in social interactions. During the observation period, Renqing costs are dominating Renqing income.

3. Avoiding vicious circle in Renqing interaction is essential for low- and middle-income families.

4. External shocks (such as Covid-19 pandemic) affect spending as well. Pandemic control measures change the spending volume and structure significantly. The resilience and recovery for families with different income sources are quite different.

3.5 Immature credit behaviours

The air in March was filled with the fragrance of early spring grass.

It has been the third time that the research team had come to Shanghai to interview the financial-diary families, but the curiosity about the changes of each family's financial situation made us nervous and excited.

At the social work station on Xizangbei Road, we met Ms. Liu who was in her seventies and is very talkative, telling us a lot of stories about her family. Ms. Liu's hometown is in Hubei, and her brothers and sisters are in Shiyang,

Hubei. Several years ago, she sold the house for her mother, and then she was sued by her brother and sister because of misunderstanding.

Ms. Liu said: "They went to the local law enforcement body and sued me in the name of my mother. I know she was coerced by them. I really didn't expect my family would end up being like this just for hundreds of thousands of yuan. I haven't seen my mother for three or four years." She signed.

—— Recorded by CAFI team in Shanghai in March 2022

A few months later after the incident, Ms. Liu was listed as dishonest judgement debtors, or simply defaulters. Ms. Liu had spent more than CNY100,000 in compensation and legal consultation. According to Ms. Liu, she has worked for decades with honesty and duties fulfilled, and her character is well-known, so she cannot accept the loss of credit caused by the misunderstanding. After being listed as an untrustworthy person, Ms. Liu has been greatly impacted – she may not be allowed to take a train or use banking services.

Credit is one of the cornerstones of modern banking system. The use of credit financial services is also one of the crucial means to improve family living standards. At present, with the continuous improvement of credit information system, credit has become an extremely vital asset. Meanwhile, the financial services derived from credit, or the credit and social financial relations, namely the borrowing and repayment, have become a critical means for households to alleviate cash crunch, purchase large items and improve living standards. In this section, we will study the use of credit instruments of low- and middle-income families in our sample¹.

1. Note: Here we will discuss all credit behaviors in formal financial institutions (banks, Internet platforms, etc.) and social networks, including Pay-back, Collect-back, Borrow-in, Lend-out, Sell-on and Buy-on.

■ There are obvious differences between credit behaviours in the three places.

The first issue we want to study is the specific changes in the in-out flows of the credit behaviours of low- and middle-income households in the sample, so as to identify the smoothing behaviours of identical low- and middle-income households. We have counted all the credit behaviours of the three places in the past year, and drew 3D graphs with inflows and outflows respectively, so as to better present the trend. Inflow mainly includes "collect-back" and "borrow-in", and outflow includes "pay-back" and "lend-out". As for sell and buy on credit, they will not be included in the statistics as they do not affect cash flows during the current period. As can be seen from Figure 3.29, the in-out flows corresponding to credit behaviours in the three places have their own features.

In-out flows caused by the credit behaviours of households in Yijun shows agricultural production features. Inflows mainly occurred from October to December, which happens to be the time when households record financial income from selling crops. Outflows were concentrated in March, which we speculate is mainly due to credit behaviors on the needs for purchasing materials and equipment during the agricultural production season. Therefore, we believe that the credit business in rural areas should be designed according to the local agricultural production cycle, in a bid to meet relevant needs of local people.

The in-out flows caused by the credit behaviours of households in Pingjiang show the characteristics of bridge loans, and the credit in-out flows present a parallel trend without lag. Both of Pingjiang's credit in-out flows peaked in September and January, implying the synergistic effect, while the amounts were smooth in other months. We thus estimate that the demand from Pingjiang's households for money rose temporarily due to the concentration of

spending in September and January; and they would borrow money and then try to pay it back as soon as possible. This could be caused by a large number of SMEs in Pingjiang. In this regard, we believe that financial institutions should build a bridge credit service mechanism with a "pay-as-you-go" lending model and interests counted on a daily basis for low- and middle-income households with diversified income sources in small towns, especially for SMEs.

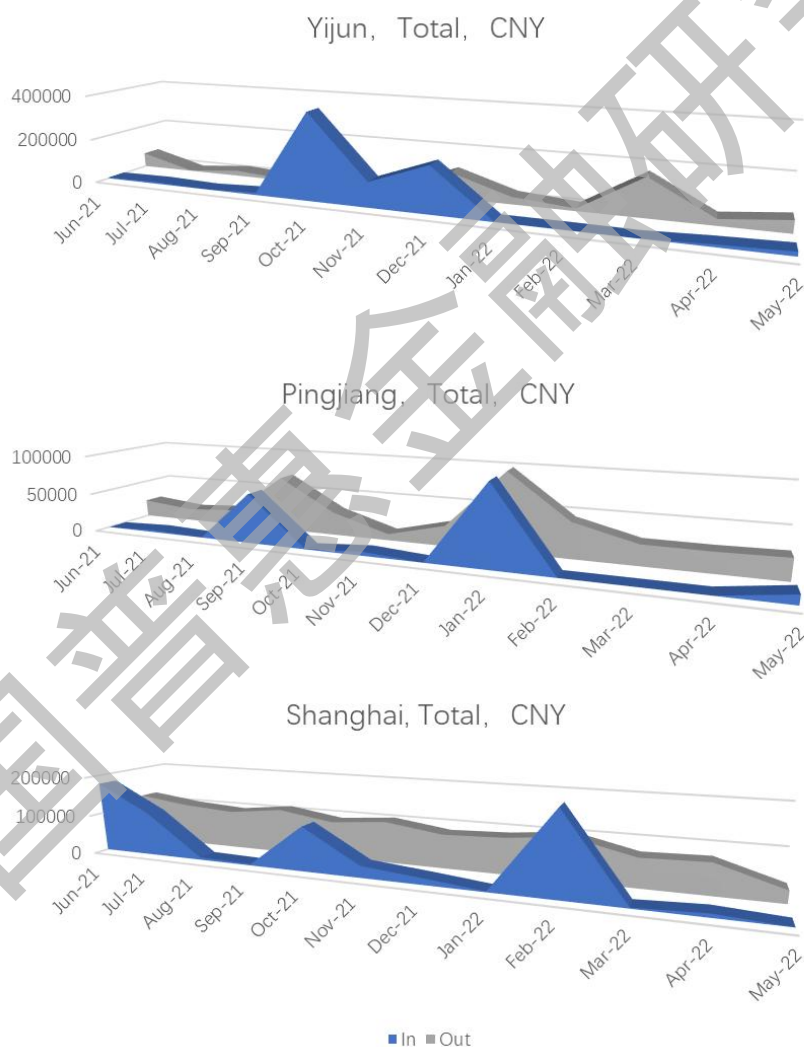


Figure 3.29: In and out flow in credit behaviours

Source: CAFI financial diary

The credit in-out flow of the households in Shanghai is smoother than the other two places. Inflows concentratedly take place in three months: June, October and February, basically corresponding to three periods with the largest spending, namely, summer holiday, the end of summer holiday and the beginning of a new semester, and Chinese New Year. Outflows showed the stability of the whole year, which suggests that the smoothing of spending has been achieved. A relatively stable outflow ensures that low- and middle-income households will not have financial difficulties due to debt concentration. Credit here also plays the role as a stabilizer in family finance, which has not been served in Yijun nor in Pingjiang. The reason we think is that the households in Shanghai have better education and financial literacy than those in Pingjiang and Yijun, and they have a more objective and rational recognition of debt. Therefore, we suggest improving financial education and literacy, and raising appropriate cognition of debt and credit for low- and middle-income households, which we think is a necessary way for them to use credit to improve their well-being. Besides, the relatively stable income structure (see Figure 3.6, with wages as the major source) gives households in Shanghai confidence in keeping long-term stable debts. Therefore, to stabilize the revenue of low- and middle-income households is also an important means to improve household credit use level.

■ The ability of low- and middle-income households to smooth spending by means of credit is relatively weak

The second question to be explored is the relationship between pay-back and spending willingness, that is, if there are more bills to be paid each month, will the willingness to spend in that month be reduced? Through Figure 3.30, we found that in most months, pay-back volume was negatively correlated to spending willingness. That is to say, pay-back does have crowding-out effect on

spending in low- and middle-income households. Moreover, this crowding-out effect has obvious fluctuations every month, which could impact households' smoothing overall spending. How to make good use of credit to smooth family consumption will be a very important course in financial literacy education in the future. Young people tend to have a better use of the credit means.

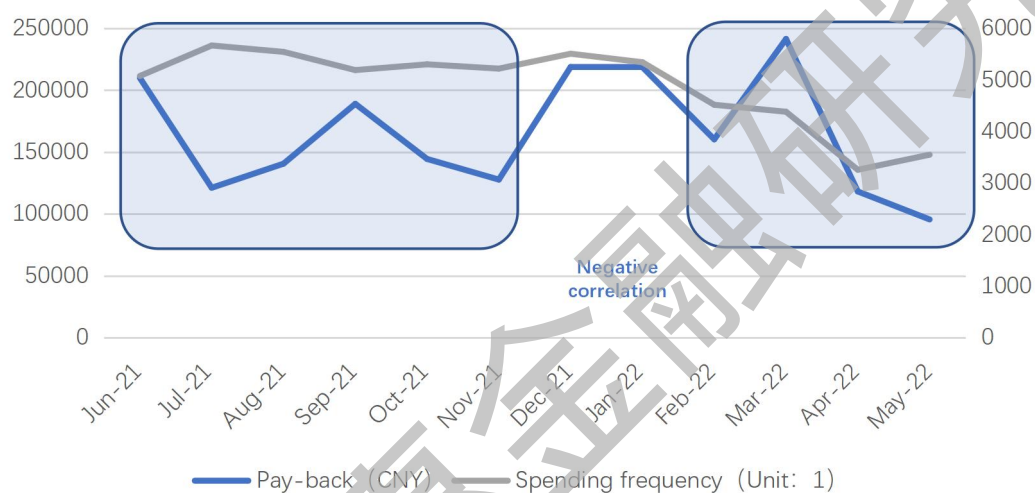


Figure 3.30: Correlation between pay-back volume and spending willingness (whole sample)

Note: Spending willingness is measured by the frequency of spending in that month

Source: CAFI financial diary

"I use credit cards, but it doesn't mean I need money. I think credit cards are easy to use and very convenient. Besides, sometimes there is a time difference between spending and income." Ms. Dong told us.

— Recorded by CAFI team in Shanghai in October 2022

Ms. Dong, who is just in her early thirties, has received good college education.

■ low- and middle-income households are less aware of reasonable debt, and the credit behaviour has crowding-out effect on spending.

We have this finding during our interview process:

"When I borrowed money, I just kept thinking about it and won't feel at ease unless I pay them back. So the first thing I do after I borrowed money is to save and pay it back." Ms. Shang said.

"Last year, we saved more than CNY60,000, and the first thing I did was to pay the money back. I felt uneasy if I didn't pay it back. Although my relatives and friends didn't want me to pay interest, I just felt uncomfortable when I was in debt." Ms. Huang gave a wry smile.

—— Recorded by CAFE team in Shanghai and Beijing in October 2022

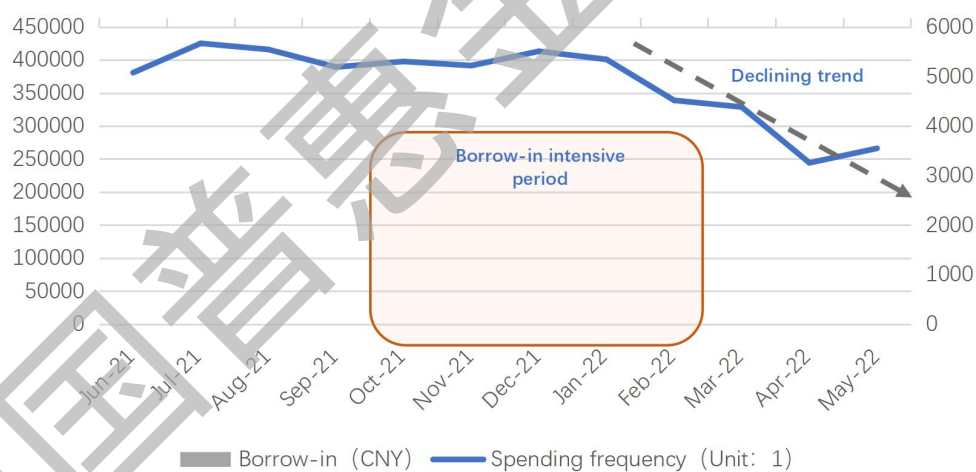


Figure 3.31: Correlation between Borrow-in volume and spending willingness (Whole sample)

Source: CAFE financial diary

In order to verify the hypothesis that debt will lead to the decline in

spending willingness, we have drawn a diagram of the relationship between borrow-in volume and spending willingness as follows:

It can be seen from Figure 3.31 that after a period of borrow-in-intensive period in the orange box, the whole sample's spending willingness shows an obvious declining trend. The debt formed by borrow-in is slowly digested after the lag period, which leads to the decline of spending willingness. That is to say, borrow-in does not have a very significant spending-expanding effect, rather the time-shifting effect. Combined with offline interviews, this phenomenon is more common among middle-aged and elderly people. The discomfort with reasonable debt of low- and middle-income households greatly affects the positive role of credit in spending-expanding. Therefore, we think there is a long way to go to improve the financial literacy of low- and middle-income households and to help them form a reasonable understanding of debt.

To further confirm our findings, we have drawn the in-out flow balance figure of Mr. Lin's family in Pingjiang, Hunan (Lin's family frequently uses credit, which is a good research object) for nearly two years from 2019 to 2021: besides in-out flow balance, we also added spending and pay-back and drew them in the form of pulse, which can reflect both quantity and frequency. It can be seen that in the orange box, the amount and frequency of Mr. Lin's family spending are much higher than those in the green box, while the amount and density of the gray pulse representing pay-back are relatively low. In the green box, with the increase in the amount and frequency in pay-back, it can be clearly seen that the frequency and amount of Mr. Lin's family spending decreased. The figure confirms our assumption once again, that is, for low- and middle-income households, credit behaviour brings rather time-shifting effect than spending-expanding effect.

Ogawa and Wan (2007) confirmed that the debt–asset ratio had negative

effects on expenditures on semi-durable and non-durable goods by empirical model, which is consistent with our findings. Andersen, Duus and Jensen (2014) found that before the financial crisis, families spent less income; instead, they used more leverage (credit), which showed the spending-expanding effect, and this explains why the decrease in their consumption changed more drastically after the financial crisis. However, among the low- and middle-income households in China, we see less spending-expanding effect; on the contrary, the debt-reduction effect is more obvious.

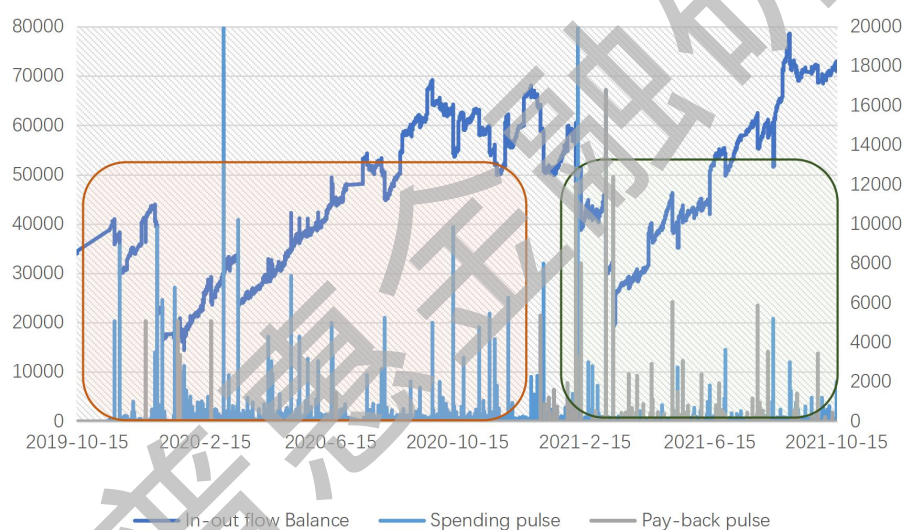


Figure 3.32: Lin's family in-out flow balance chart

Source: CAFI financial diary

■ Weak credit management ability

"My only credit card hurt me badly enough. I borrowed CNY1,200 in total. But I couldn't go out to save money during the lockdown then it was overdue. As a result, the overdue fee plus interest totalled more than CNY400." Ms. Shang told us.

"We don't use those stuff (referring to credit cards, internet platforms, etc.) at

all. Even if we are short of money, I will only borrow from relatives, friends or my children. I will never use those stuff." Mr. Zhao said.

—— Recorded by CAFI team in Shanghai in March and October 2022

The negative attitude of the elderly towards credit exceeded our expectations. During the interview, we repeatedly heard the negative feedback of the middle-aged and elderly interviewees on financial services. This stereotype of financial services leads to the low willingness of middle-aged and elderly people from low- and middle-income households in China to use inclusive finance. Besides stereotypes, the insufficient services of financial institutions for middle-aged and elderly people is also a cause of this impression. Therefore, developing financial products and providing financial services for the elderly is an important means of the penetration of inclusive finance services into lower-tier cities.

Summary for section 3.5

1. In the sample, credit behaviors in three locations are significantly different. In the sample, Yijun's credit behaviors are mostly related with agricultural production. Pingjiang's credit behaviors are more likely to be bridge credit. Shanghai families use credit for spending smoothing, regarded as the healthiest credit behaviors.

2. The sample low and medium income households are not good at credit and debt management. Spending expanding effect generated by credit is not as significant as the time-shifting effect. Crowd-out effect from debt is significant.

3. Sample low and medium income households do not have adequate credit management skills especially older people, causing defaults and mistakes

when using credit services.

4. Older people have low trusts in financial system. Financial services designed for older people should be developed.

3.6 Family risks should not be ignored

"It never rains but it pours; a late ship always encounters headwinds."

—— Lasting Words to Awaken the World , Menglong Feng, Ming Dynasty

Near Sanlin Town at Pudong New Area, we met Ms. Huang, who was dressed in orange cleaning clothes and was waiting for us at the community service station. Her family only has two members – her husband and herself. Her son didn't live with them after he was married. Ms. Huang was in her early fifties. At the age when she should have retired and enjoyed her life, she was still working as a cleaner in a private enterprise.

"After the pandemic outbreaks, the company cut the number of cleaning staff by half in order to reduce expenses. In the past, one person only needed to clean a floor. Now I am responsible for cleaning two floors alone, I feel really tired." Ms. Huang said with a sigh.

—— Recorded by CAFI team in Shanghai in March 2022

The main reason why she was still working is that her family's financial situation was tight. First, her father had stomach cancer, so they faced high medical spending pressure. Besides, her husband had a cerebral infarction. This means they not only lost a source of income but also saw increased expenses, which aggravated their financial burden. Third, her son used to be addicted to

gambling. Although he quit gambling later and his financial situation improved, he still lacked money. Fourth, her family owed a lot of debts.

According to the interview, the biggest risk that Huang's family faced was financial loss. First, there was a colleague in her previous company who borrowed CNY110,000 from the online lending platform in the name of Ms. Huang through false investment opportunities that promise high returns. Finally, the money was swept away by the colleague, so the principal and interest could not be paid back. The platform has a high interest rate, so Ms. Huang had to pay thousands of interest expenses every month. She then borrowed from the bank to pay for the small loan, and now she is still paying for this money every month. In 2021, her family saved over CNY60,000, and they used to repay this debt.

Ms. Huang's family faced many kinds of risks with a deep degree, so the whole family was in a very tight position.

For Ms. Sun's family, some of her relatives lived in rural Jiangxi, and the risks they faced were in agricultural production. There were several acres of land in front of her house, so her father tried to do farm work. In the first year, the family suffered a severe flood, resulting in total crop failure. Because they didn't rely on agricultural production to make a living on a large scale, they hadn't bought agricultural insurance, which means considerable losses. Since then, the land had been handed over to neighbors for farming, and the income has become relatively low.

"It was hard for him to make up his mind to do farm work to increase income. Who knew this kind of thing happened in the first year? It's a waste of a year's time."

—— Recorded by CAFI team in Shanghai in March 2022

There are risks in agricultural production in rural areas and earning money from working in cities. The story of Ms. Sun's family is just one example of agricultural risks affecting household financial situation. In Yijun, we also learned the risks of agricultural production that still exist even under the coverage of agricultural insurance. The main crops in Yijun are corn, apple and walnut, all of which are covered by agricultural insurance. Among them, the corn premium is completely borne by the government. Farmers said that they would not buy insurance if they have to bear the premium. This shows that some farmers' acceptance of agricultural insurance is still not high. In 2018, there was a natural disaster in Walnut planting. Due to the large scope, according to farmers, insurance companies didn't settle the claims but returned the original insurance cost. For apple's insurance, the government will subsidize CNY40, and the farmers bear another CNY40. During 2015-2017, Yijun's apple trees suffered from natural disasters of different degrees for three consecutive years, so farmers received compensation of CNY280/mu in 2016 and CNY1,080 /mu in 2017. However, under normal market conditions, the price of apples could reach CNY10,000 per mu, with a cost of CNY4,000. The payment of agricultural insurance cannot make up for the loss of income caused by natural disasters, and even difficult to cover the planting cost.

According to these examples and stories, we find that low- and middle-income households in rural areas, small towns or big cities, are faced with all kinds of risks. However, in the case of low- and middle-income, any kind of risks may have a fatal impact on the family's financial situation, resulting in financial weakness, sub-health or ill health of families. Therefore, the overall welfare of Shanghai households could be affected, and some of them may even return to poverty. In this section, we will explore the situation of households facing risks and the use of insurance against risks.



Figure 3.33: Risk categories

Source: CAFI research team

Table 3.5: Specific risks

Category	Specific risks
Medical	Temporary disability caused by illness
	Permanent disability
	Chronic disease
	Outpatient treatment
	Hospitalization
Loss of life	loss of family members
Income decrease	Loss of main income source
Family relations	Family relations break
Legal dispute	Theft or robbery
	Legal dispute
Other accident	Fire
	Car accident
	Other damaging accident
	Natural disasters
	Crop failures
	Death of livestock or pet
Financial loss	Fail to retrieve the lend
	Loss in financial investment
	Insurance fraud
	Internet or tele-fraud

With reference to Zollmann (2015) and the questionnaire of CAFI and World Bank's risk research, we classified the risks of low- and middle-income households in China, and divided the risks that families in China are prone to into 7 categories and 20 specific risks. We distributed the questionnaire to all participating financial-diary families and tracked the occurrence of risks in the past five years (March 2017-March 2022), see Table 3.6 for results.

Table 3.6: Statistics for specific risks

		Total				Yijun			
		Frequency (Unit)	Probability (%)	Damages per hit (CNY)	Expectation (CNY/year)	Frequency (Unit)	Probability (%)	Damages per hit (CNY)	Expectation (CNY/year)
Medical	Temporary disability caused by illness	0.61	12.11%	11655.19	1410.98	0.80	16.00%	18000.00	2880.00
	Permanent disability	0.37	7.37%	7213.58	531.50	0.61	12.21%	12697.37	1550.35
	Chronic disease	0.76	15.16%	6651.64	1008.26	0.89	17.89%	14865.85	2660.10
	outpatient treatment	2.37	47.37%	3239.48	1534.48	2.40	48.00%	12006.85	5763.29
	Hospitalization	1.63	32.53%	5549.21	1804.94	2.04	40.84%	13605.63	5556.81
Loss of life	loss of family members	0.63	12.63%	10667.21	1347.48	0.69	13.89%	10550.60	1465.90
Income decrease	Loss of main income source	0.51	10.11%	14834.97	1499.22	0.75	14.95%	11025.25	1648.05
Family relations	Family relations break	0.43	8.53%	8520.71	726.48	0.37	7.37%	5709.21	420.65
Legal dispute	Theft or robbery	0.15	3.05%	6340.91	193.52	0.24	4.84%	6750.00	326.84
	Legal dispute	0.19	3.89%	13660.42	531.94	0.20	4.00%	2393.52	95.74
Other accident	Fire	0.09	1.89%	2350.00	44.51	0.18	3.58%	1777.78	63.61
	Car accident	0.15	2.95%	10394.74	306.44	0.18	3.58%	12694.44	454.21
	Other damaging accident	0.29	5.79%	8971.15	519.43	0.44	8.84%	8187.50	723.94
	Natural disasters	0.45	8.95%	3766.67	337.04	0.84	16.84%	3713.54	625.43
	crop failures	0.60	12.00%	6548.36	785.80	1.05	21.05%	6494.17	1367.15
	Death of livestock or pet	0.39	7.79%	3010.80	234.54	0.58	11.58%	2047.92	237.11

Improve household financial health in an uncertain world

Financial loss	fail to retrieve the lend	0.66	13.26%	9433.62	1251.28	0.65	13.05%	4403.33	574.72
	Loss in financial investment	0.29	5.79%	13425.29	777.32	0.20	4.00%	15444.44	617.78
	Insurance fraud	0.17	3.37%	4486.84	151.12	0.28	5.68%	2046.88	116.34
	Internet or tele-fraud	0.12	2.42%	1777.78	43.06	0.22	4.42%	1777.78	78.61
		Pingjiang				Shanghai			
		Frequency (Unit)	Probability (%)	DPH (CNY)	Expectation (CNY/year)	Frequency (Unit)	Probability (%)	DPH (CNY)	Expectation (CNY/year)
Medical	Temporary disability caused by illness	0.62	12.35%	11041.67	1363.87	0.30	5.90%	14866.67	877.43
	Permanent disability	0.32	6.47%	7166.67	463.68	0.02	0.33%	500.00	1.64
	Chronic disease	0.71	14.12%	5083.33	717.66	0.57	11.47%	7196.43	825.72
	outpatient treatment	2.12	42.35%	2926.14	1239.28	2.46	49.18%	2922.59	1437.33
	Hospitalization	1.68	33.53%	5657.89	1897.09	0.95	19.02%	8301.08	1578.53
Loss of life	loss of family members	0.82	16.47%	7288.46	1200.41	0.43	8.52%	12886.36	1098.43
Income decrease	Loss of main income source	0.38	7.65%	15812.50	1209.34	0.20	3.93%	26625.00	1047.43
Family relations	Family relations break	0.24	4.71%	16625.00	782.37	0.62	12.46%	10270.83	1279.75
Legal dispute	Theft or robbery	0.18	3.53%	4500.00	158.85	0.00	0.00%	0.00	0.00
	Legal dispute	0.21	4.12%	21166.67	871.64	0.18	3.61%	23520.83	848.16
Other accident	Fire	0.03	0.59%	7500.00	44.10	0.00	0.00%	0.00	0.00
	Car accident	0.12	2.35%	10250.00	241.08	0.11	2.30%	7041.67	161.68
	Other damaging accident	0.21	4.12%	12000.00	494.16	0.10	1.97%	11166.67	219.76
	Natural disasters	0.09	1.76%	2500.00	44.10	0.03	0.66%	5250.00	34.44
	crop failures	0.32	6.47%	8250.00	533.78	0.05	0.98%	4500.00	44.28
	Death of livestock or pet	0.38	7.65%	7791.67	595.91	0.10	1.97%	3055.56	60.13
Financial loss	fail to retrieve the lend	0.88	17.65%	7350.00	1297.13	0.56	11.15%	17697.37	1972.90
	Loss in financial investment	0.44	8.82%	10962.96	967.37	0.34	6.89%	13787.88	949.43
	Insurance fraud	0.12	2.35%	11250.00	264.60	0.02	0.33%	30000.00	98.40
	Internet or tele-fraud	0.00	0.00%	0.00	0.00	0.03	0.66%	0.00	0.00

Note: 1. Frequency is the average times of each risk happened in last 5 years;

2. Probability every year is estimated by the frequency. $\text{Probability} = (\text{Frequency} / 5) \times 100\%$

cy/5)*100%;

3. DPH (Damage per hit) is the average financial damage reported by families;

4. Expectation=DPH*Probability

Source: CAFI survey on financial-diary families

As can be seen from the table, various risks have different characteristics. Some risks have a high probability of occurrence, but with damage per hit (DPH), such as outpatient treatment. Some risks have a low probability, but once they happen, they will bring very high financial losses to families, such as car accident. This is determined by the nature of different risks. Understanding such nature could help low- and middle-income households overcome risks.

In order to better understand the characteristics of all kinds of subdivided risks, we set two thresholds, namely, the probability of occurrence of 10% (selected according to the average value) and DPH of CNY7,600 (selected according to the average value). When the probability of a certain risk exceeds 10%, we classify it as "high probability". When the DPH of a certain risk exceeds CNY7,600, we classify it as "high damage". Then we get the feature map as Figure 3.34.

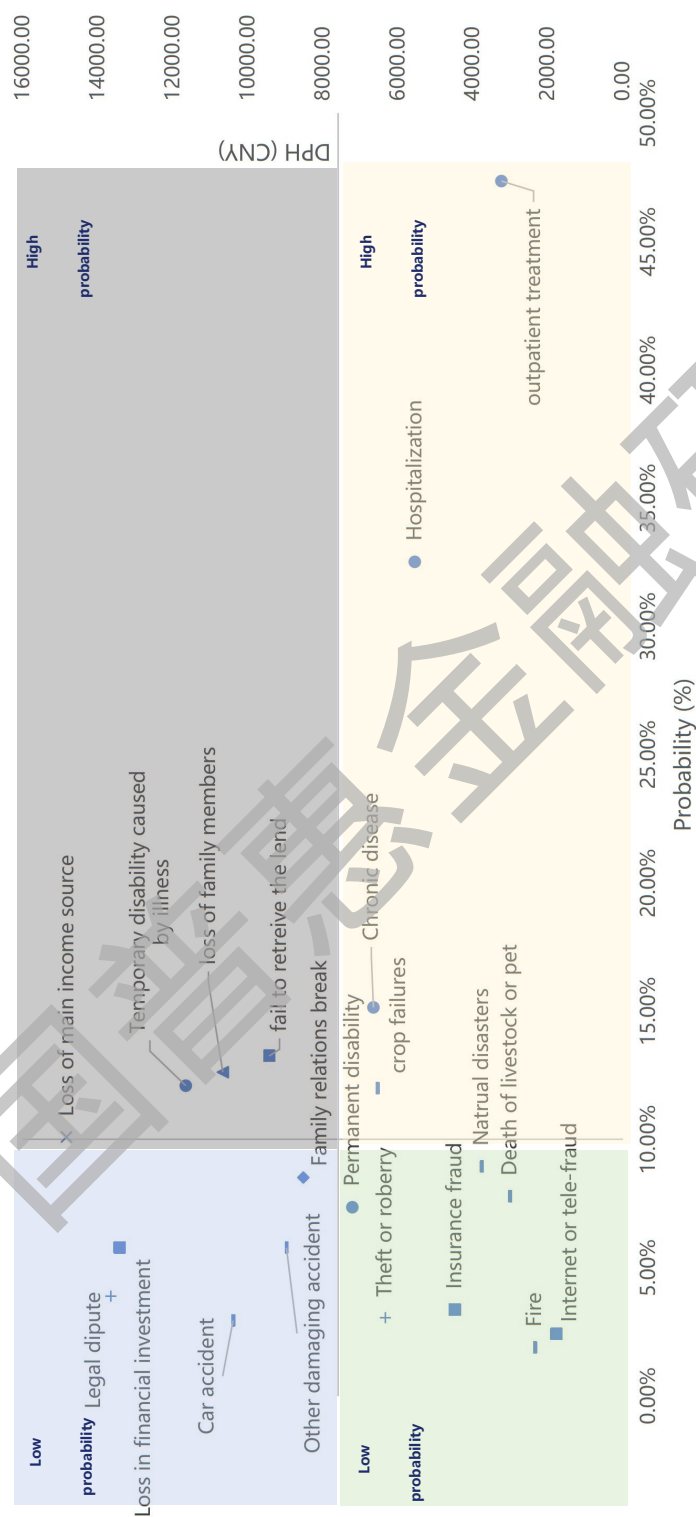


Figure 3.34: Feature map of risks

Source: CAFI survey

■ The characteristics of various risks are quite different

According to the feature map, there are four types of risks: high probability & high damage, high probability & low damage, low probability & high damage, and low probability & low damage, and they contain specific risks. Each specific risk has their own characteristics, which are quite different

■ High frequency risk causes the biggest harm to families

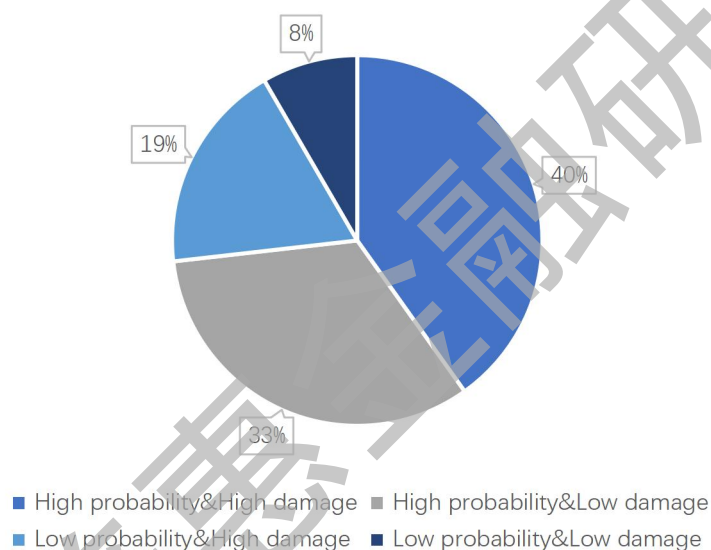


Figure 3.35: Percentage of severity (measured by expectation) on family of 4 risk types

Source: CAFI survey

It can be seen that HH and HL risks, which have the greatest harm to families, account for 40% and 33% respectively. Therefore, the risk of high frequency causes the greatest harm to families, which we think should require our special attention.

"I often go to the hospital many times a month, and almost spent all my pension on this. A few hundred thousand at a time adds up to a lot." Mr.

Zhao said helplessly.

—— Recorded by CAFI team in Shanghai in March 2022

High-frequency risk refers to the family risk with an annual occurrence probability of more than 10% but bringing about 73% of the family's financial losses. It is necessary to set up corresponding hedging mechanisms for such risks. Among them, the medical risk is the most prominent. Supplementary universal health insurance is a good coping mechanism.

■ There are obvious differences in risk distribution among the three places, with notable medical risks in rural areas as well as income and financial risks in urban areas

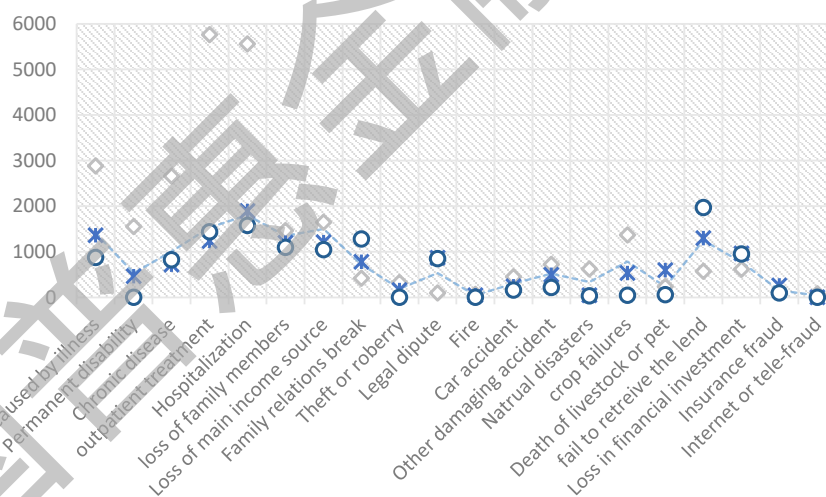


Figure 3.36: Risk expectations in 3 places

Source: CAFI survey

As shown in Figure3.36, from the perspective of loss expectation, among the households in Yijun, the temporary disability caused by illness, permanent

disability, chronic diseases, patient treatment, hospitalization and other indicators are higher than the sample average. It can be seen that the medical risk facing the households in Yijun is far greater than that in Pingjiang and Shanghai, where the economy are relatively developed. If the per capita income is taken into account, the medical risk faced by Yijun's households is much higher than those of Pingjiang and Shanghai. Shanghai, as a representative of cities, is lower than the average in terms of many risks, but the risks related to income and finance such as loss of main income source and loss in financial investment are much higher than the average. The risks facing the households in Pingjiang is basically consistent with the average level.

There are obvious differences in risk distribution among the three places: medical risks in rural areas are significant, while income reduction and financial loss risks in urban areas are notable. Therefore, risk hedging in different regions should have their own focus, such as strengthening the construction of rural medical insurance system, and enhancing the construction of unemployment protection mechanism and financial investment risk hedging mechanism in urban areas.

■ The risk hedging channel is limited, which highlights the needs for establishing a multi-risk hedging system

During our research process, we asked a question about all the risks in our survey for all financial-diary families - when you encounter such risks and fall into a tight financial situation, whom will you seek help from? We found that there was a high consistency among the people seeking help in the three places.

"Family" refers to seeking help from family members and relatives. "Self" refers to self-support, including increasing working hours, increasing income, using savings, or selling assets. "Friends" means asking friends for help. "Financial institutions" refers to seeking financial support from financial

institutions such as banks and Internet platforms. Among them, the number of people who chose to seek help from family members is far higher than other answers. It can be seen that the risk hedging channels of most families remain single, with social assistance as the main way, and financial institutions and insurance played little role in providing help to hedge against risks. We thus think establishing a diversified risk hedging system is an important means to improve the resilience of low- and middle-income households.



Figure 3.37: Answer to Question "Seeking help from?"

Source: CAFI survey

■ The risk gap still exists

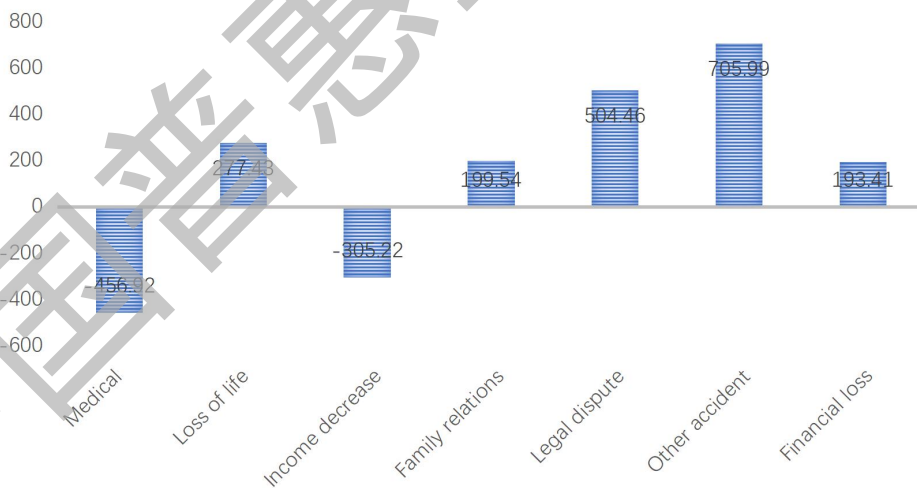


Figure 3.38: Risk gap in risk categories (CNY)

Note: Risk gap = $WTP^1 - \text{Real risk expectation}$

Source: CAFI survey

¹ WTP: Willingness to pay, a financial value to measure the willingness of a specific economic behaviour.

For better understanding of the risk hedging lack situation, we calculate the risk gap to show where exactly the risks are located in the 7 risk categories. As figure 3.38 shows, medical and income decrease are the main risk categories that are facing gaps, which means that the willingness to pay cannot cover the real risk, leaving insurance room to develop.

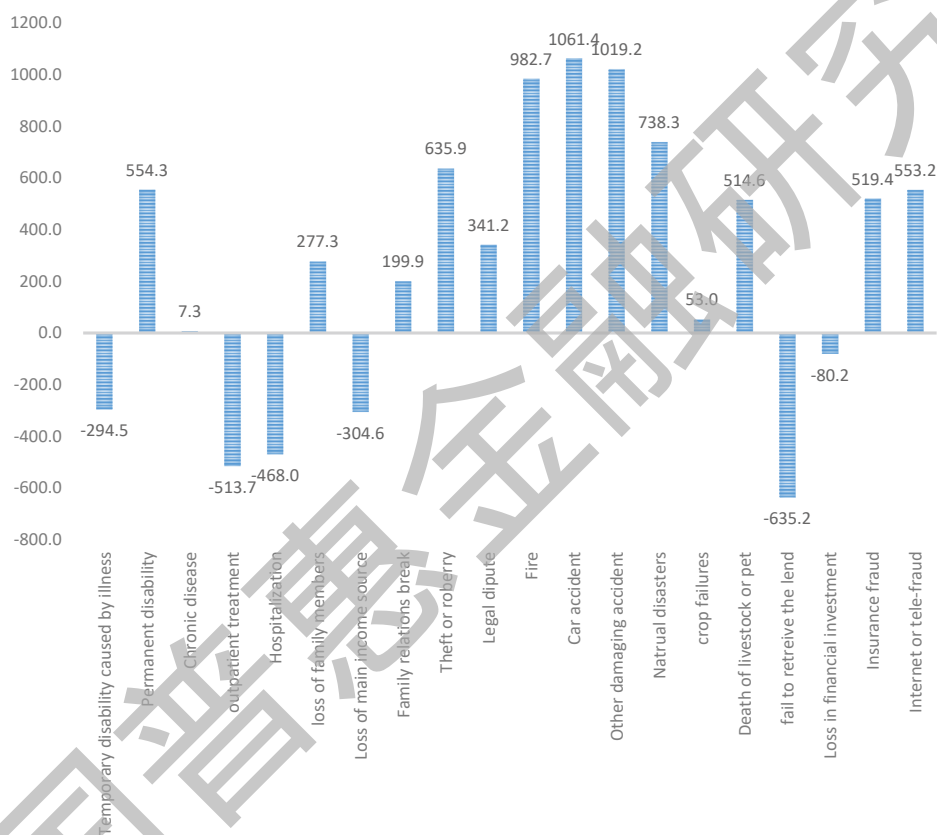


Figure 3.39: Risk gaps for specific risks

Note: Risk gap= WTP-real risk expectation

Source: CAFI survey

Figure 3.38 has shown us where hedging risks are located and Figure 3.39 will show us where the gaps are for every specific risk. The calculation of risk gap is different from risk index. If the risk gap is negative, it means that

this specific risk cannot be covered by WTP and then causes financial stress to the household. If it is positive, it means households are willing to cover this specific risk by themselves, giving insurance no room. Accordingly, failing to receive the lend, outpatient treatment, hospitalization, loss of main income sources and temporary disability are facing risk gaps, where insurance should focus on. The gap is the value that sample households are willing to pay to hedge the specific risk.

■ **The insurance depth and density are low, and the market shows great potential.**

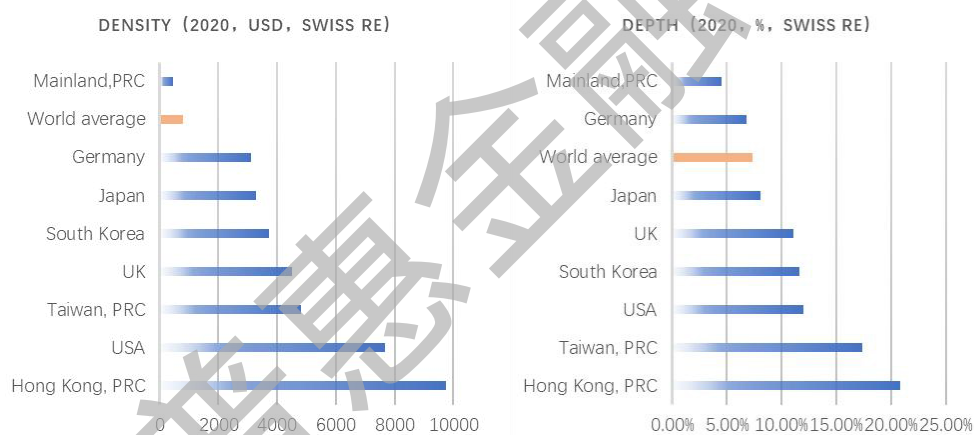


Figure 3.40: Insurance density and depth

Source: Swiss Re Sigma report

As the optimal solution of risk hedging, from the macro data, China's overall insurance density and depth are far lower than the global average. Hong Kong and Taiwan, which have similar cultures, are far ahead of Chinese mainland in terms of these indicators. This result excludes the assumption that the choice for insurance is caused by cultural differences.¹

In terms of social security insurance, about 84.90% of people from

¹ CHFS: China Household Finance Survey. It is conducted every two years.

low- and middle-income households (in CAFI samples) paid for the old-age insurance, lower than the 87% nationwide surveyed by CHFS, and about 96.88% paid for basic medical insurance, slightly higher than the 96.27% in CHFS survey. It can be seen that China has basically achieved full medical insurance coverage across the country. In terms of old-age insurance, the ownership rate of low- and middle-income households remained slightly lower than the national average.

"None of the private enterprises I worked at will pay social security. I would rather have a slightly lower salary in exchange for social security. But as old as I am, I cannot contribute payment to social security." Ms. Huang told us.

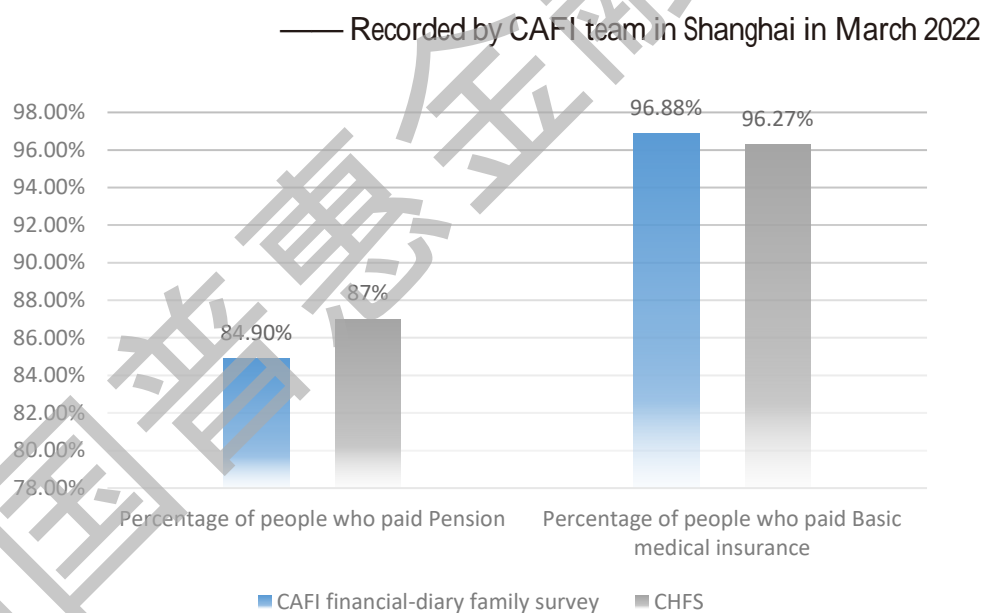


Figure 3.41: social insurance (Pension & Basic medical insurance)

Source: CAFI survey and CHFS

Commercial insurance, as a supplement to social insurance, plays an equally important role in further improving household resilience (Figure 3.42).

Based on the results of the two surveys, the coverage of commercial insurance is basically the same, both in the range of 33%-34%. Therefore, it can be considered that the commercial insurance utilization rate of low- and middle-income households is consistent with the national average, with a coverage rate of about 1/3. In terms of insurance costs, the national average insurance cost counted by CHFS is CNY5,197.73, but the WTP of low- and middle-income households is about CNY3,745.54, which is significantly lower than the average level. It can be seen that the commercial insurance density of low- and middle-income households is low, and the market boasts a great room for development.

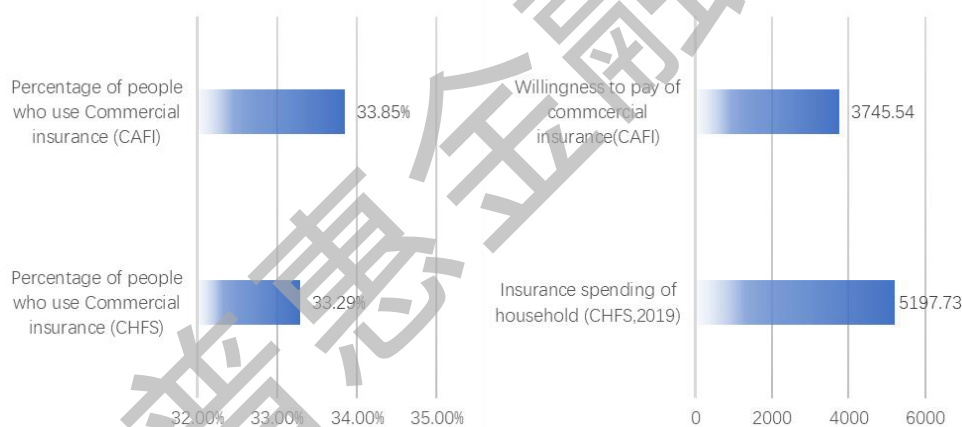


Figure 3.42: commercial insurance coverage and WTP

Source: CAFI survey and CHFS

■ **The coverage of agricultural insurance depth in rural areas is high; insurance is insufficiently used in small towns, and the insurance market in big cities has great growth potential.**

We drew Figure 3.19 by using the ratio of insurance expenses to total expenses in 3.3 as the proxy of insurance depth in the three places. We don't distinguish between commercial insurance and social insurance spending

for convenience. We found that the insurance depth in rural areas (Yijun) is higher than that in the other two places, mainly because of the concentrated agricultural production in Yijun. The demand for agricultural insurance is very strong, and the overall cost is relatively lower than that in the other two places, so the proportion is relatively high. Although the insurance depth of low- and middle-income households in big cities (5% in Figure 3.18 is used as the proxy of insurance depth), exceeded the national average of 4.5% (Swiss Re Institute, 2020), it remains far below the world average of 7.4% (Swiss Re Institute, 2020), suggesting broad room for market growth. Meanwhile, Pingjiang, as a representative of small towns, has insurance depth of only 2%, which means a blue-ocean market compared with Yijun and Shanghai.

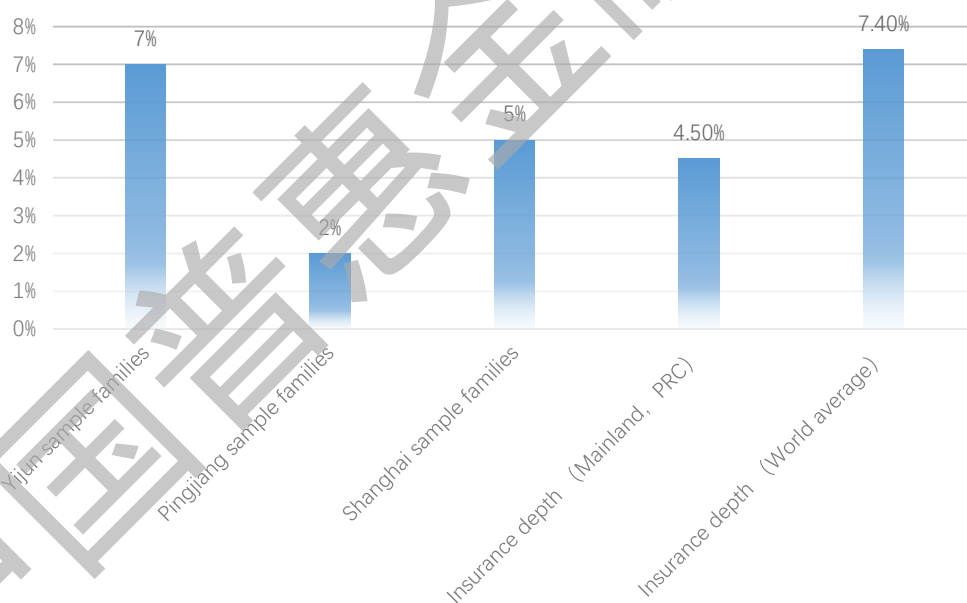


Figure 3. 43: Insurance depth in 3 places

Note: The data for Yijun, Pingjiang and Shanghai is just an estimation according to financial diaries of sample families. It is not representative for the whole region.

Source: CAFI financial diary, SwissRe

■ **Trust in insurance is low.**

Zhao's story: Mr. Zhao, a Shanghai resident, bought the commercial inclusive insurance promoted by the neighborhood committee. But the payment was very limited when he had a foot injury. Only CNY500 was covered by insurance for his foot surgery, especially when the local Disabled Persons' Federation subsidized CNY1,800. Therefore, he thought that commercial insurance has very limited effect, and he became very resistant to contact with insurance salespersons, thinking that the payment mechanism and terms of insurance are very unfriendly to the elderly, and that even if there is a third party, the case will be the same. Besides, Mr. Zhao had the bad experience of being cheated to buy insurance. Mr. Zhao said, "It's very convenient to buy, but it's very difficult to really benefit." He thinks that the cost of seeing a doctor can be affordable with medical insurance, but once being hospitalized or having surgery, there comes the difficulty, which includes both in care and financial power. But there is no suitable insurance product to help deal with these difficulties. Mr. Zhao said, "I have heard of an example - an old man, a beneficiary of insurance, was required to go to the insurance company personally to make a claim, but he was 90 years old and couldn't move freely, so he ended up not getting paid."

Huang's story: Ms. Huang, who lived in Shanghai, is very resistant to insurance due to her own experiences. Her father had an operation on gastric cancer. She had bought the locally promoted inclusive commercial insurance (such as the "Huhuibao"), but when she went to the insurance company, she was told that the rest of the medical expenses could not be reimbursed. Ms. Huang said, "the annual premium of CNY500 per person is also a big expense for our family, but we ended up facing endless disputes and excuses." Besides, she had bought one life insurance product from Taiping Life Insurance in the

bank around the year of 2000, with a cost of nearly CNY30,000. Then in 2014 when the time period of 15 years promised by the insurer was satisfied, she only received CNY3,000 from beginning to end. She thought she was cheated by the insurance company. She thought buying insurance products in a large bank, which is a third party, should be reliable, and she still could not benefit from the insurance. Because of these two unpleasant experiences, she thinks that insurance is deceptive. She indeed has strong demand for insurance, but there is no way for her to believe in insurance again.

We heard these two stories during our research. In general, the evaluation of insurance is relatively negative, which is also reflected in our survey.

It can be seen that nearly 30% of the people in the whole sample chose "refuse to talk to" and "feel uncomfortable", and nearly half of them chose "neutral". Only about 20% of them chose "willing to talk" and "very interested". This low level of trust greatly limits the development of the insurance industry, in our view.

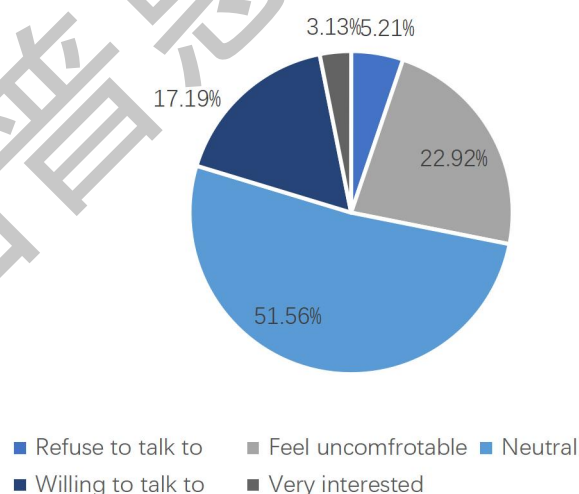


Figure 3.44: Answer to "How do you feel about insurance sales?"

Source: CAFI survey

It can be seen that nearly 30% of the people in the whole sample chose "refuse to talk to" and "feel uncomfortable", and nearly half of them chose "neutral". Only about 20% of them chose "willing to talk" and "very interested". This low level of trust greatly limits the development of the insurance industry, in our view.

"Actually I need insurance, but it's troublesome when it comes to claims. I feel all insurance salespersons tell lies." Huang sighed.

—— Recorded by CAFI team in Shanghai in March 2022

Summary for section 3.6

1. Different risks have different features in probability and damage.
2. Medical risks are more significant in rural households while income-losing and financial risks are more significant in city households.
3. Risk hedging channel is very limited in sample households. Family is the main risk hedging channel. Sample households would rather increase workloads or save to overcome financial difficulties than ask help from financial institutions.
4. Risk exposures are in medical risks and income-decrease risks. Failing to retrieve the lend, outpatient treatment, hospitalization, loss of main income source and temporary disability are where risk gaps are located, leaving insurance enough room to develop.
5. Insurance density and depth are still low.
6. There is strong distrust in insurance, especially among older people. Young households are interested in innovated insurance for education, life and pension.

4. Special concerns: Small businesses under the pandemic

The COVID-19 pandemic has been going on for three years since 2019. As one of the few countries in the world that has managed to put the pandemic under control, China has been under great pressure in terms of personnel mobility and economic development. Especially amid the COVID outbreaks in Shanghai in mid-March 2022, due to the long-term and strict anti-COVID prevention and control measures, over 20 million residents in Shanghai experienced a difficult three months.

Almost all CAFI financial-diary households in Shanghai experienced the whole process from sporadic outbreaks, citywide lockdown, gradual reopening to returning to normal. Against the background of "dynamic zero-COVID policy", the anti-pandemic prevention and control measures could be upgraded at any time. As the staff of the government, public institutions and large enterprises with fixed income, they encounter fewer difficulties, but what about the SMEs, self-employed individuals and flexible employees whose sources of income totally depend on themselves?

We will begin with two stories.

The first story is about Mr. Deng, who lives in Pingjiang County, Hunan Province and is engaged in decoration business. According to Mr. Deng, he set up a decoration team and carried out household decoration business. Because of the heavy financial burden of his family, he was usually short of money. After the pandemic began at end-January 2020 (The data is from the World Bank China Financial Diaries project), Mr. Deng's crew did not receive any orders for nearly four months.

"We were out of business at all after the pandemic started. We often work in our clients' homes, so we almost had no orders since the pandemic, but spending is still there." said Mr. Deng.

— Recorded by CAFI team in Pingjiang in December 2021

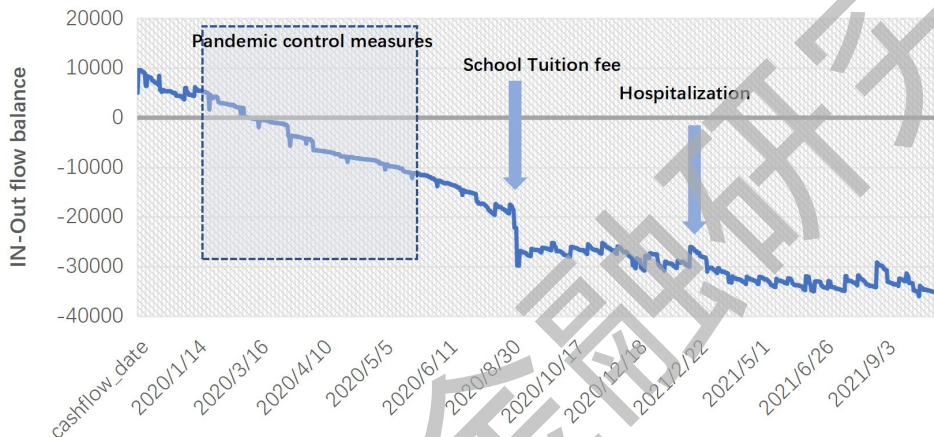


Figure 3.45: Deng's family in-out flow balance

Source: CAFI financial diary

From the in-out balance figure of Mr. Deng's family, we found that the situation was basically in line with what he described. Since February 2020, his family had almost no income, and the situation sustained until end-May 2020. However, the flat daily spending coupled with tuition fees and medical spending put Deng's family into a more difficult position amid the pandemic. We can see that anti-pandemic control measures have a great influence on micro-enterprises and flexibly-employed groups whose income mainly depends on the services sector, which should not be ignored.

In order to explore the impact of pandemic prevention and control on SMEs, we found Ms. Jiang's family in our sample. The family made a living by opening a car repair shop in Shanghai, and experienced the whole process of

lockdown from March to June 2022. Before October 2021, the car repair shop had been closed for nearly five months. Since it was doing very well, the family saved a lot of money and planned to redecorate the shop to expand business. After the shop's reopening in October 2021, its business steadily increased and the family's financial situation improved. But the pandemic outbreak starting from March 2022 in Shanghai had severely hit the business. By April when the citywide lockdown began, the shop was completely out of business. The declining deposits made Ms. Jiang's family feel overwhelmed.

"We really didn't expect a citywide lockdown after three years since the start of the pandemic. Last year, we put a large sum of money in the renovation, and we saw business getting better and better. Who knew this would happen?" Ms. Jiang said.

— Recorded by CAFI team in Shanghai in October 2022

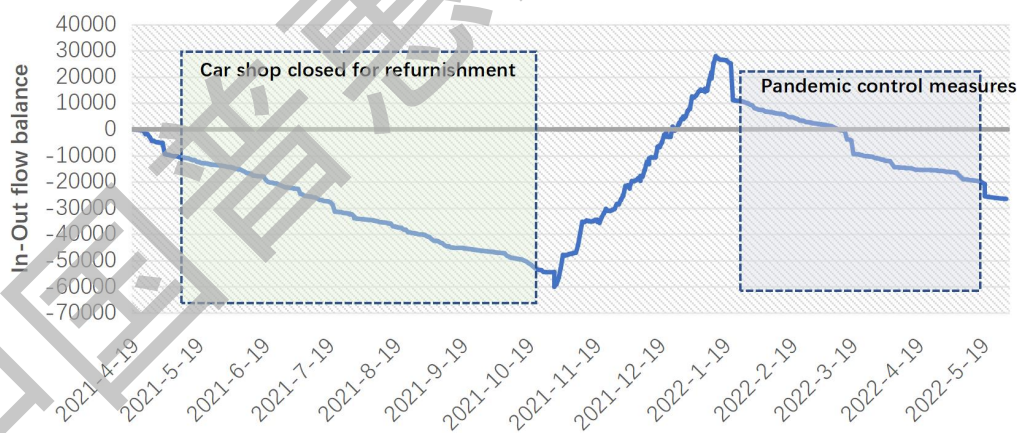


Figure 3.46: Jiang's family in-out balance

Source: CAFI financial diary

The experience of Ms. Jiang's family represents those of numerous SMEs and self-employed individuals in Shanghai. Dampened by the COVID control measures, the service enterprises, SMEs, self-employed individuals and flexibly-employed groups with concentrated low- and middle-income groups have suffered financial pressure that are disproportionate to their abilities.

"The pandemic really hurt us Didi drivers. Many people left their hometowns to make money in Shanghai. They ended up earning no money and even losing their deposits. Until now (referring to October 2022), my business has not fully recovered because few people are on business trips." Xia said.

—— Recorded by CAFI team in Shanghai in October 2022

5. Actions: Gap identification and policy advice

We will summarize the characteristics of and the findings about various financial behaviors we identified in Chapter 3, identify financial gaps, and put forward corresponding suggestions for policymakers. At last, we summarize all financial gaps in Figure 3.47.

We summarize our insights and put forward the following suggestions for policymakers:

Firstly, address the fundamental roles of community and village as "blood capillary" of structural monetary policies. Also, shift the emphasis of credit policy on the productive side only to both productive side and demand side. So that, providing accessible and affordable cash loans to low- and middle-income households will be the most effective way to meet the demand of smoothing expenditure, expanding consumption and expanding production.

Secondly, address the more and more important role of inclusive insurance in the inclusive financial system and put more resources into the development of inclusive insurance, which can be regarded as a new leverage for financial institutions to achieve the Dual Goal. The digitalization of inclusive insurance is the key so insurance companies should develop digital, standardized and smart inclusive insurance products as the most effective tool for inclusive insurance promotion.

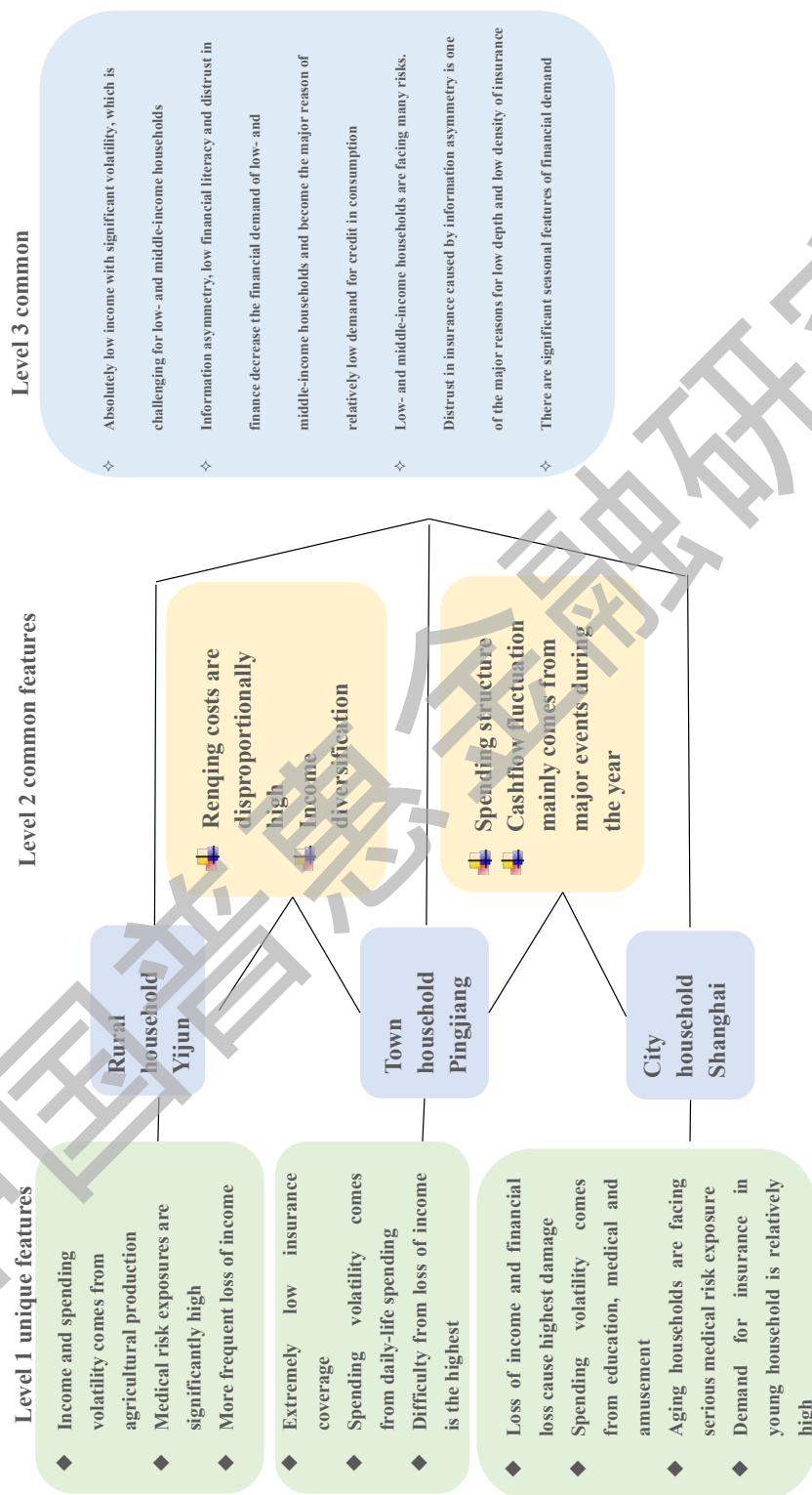


Figure 3. 47: Insights figure

Thirdly, pay more attention to the financial barrier among the society, especially among the vulnerable such as the old. Try to reduce the public distrust on financial institutions, especially insurance companies so the coverage of financial education and promotion of financial health concept are essential. Financial institutions need to integrate consumer protection strategy into the business strategy.

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