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Financial Literacy and Households' Consumption Behavior: An Empirical Study amid the COVID-19 Pandemic

SEKITA Shizuka¹

Abstract

Since 2020, the COVID-19 pandemic has impacted economic activity, and it is assumed that unexpected declines in income affected people's consumption behavior. The full-insurance hypothesis indicates that if insurance markets in a broad sense are developed sufficiently, changes in the level of consumption can be avoided. This paper tests this hypothesis, using the micro data from "a survey on households' financial behavior and perception amid the COVID-19 pandemic" conducted by Japan's Financial Services Agency in March 2021 following a statement issued by the Organisation for Economic Cooperation and Development (OECD), "Supporting the financial resilience of citizens throughout the COVID-19 crisis." This paper also analyzes how people deal with income declines, such as dissaving, borrowing, and/or income transfer. In performing analysis of these two aspects, we focus on the difference in the level of people's financial literacy (i.e., the level of knowledge, behavior and attitude regarding finance and the economy). This is because people with higher financial literacy tend to have more savings and pass loan screening more easily when borrowing is needed, and therefore it is considered that they can avoid cutting consumption even when their income declines. As such, by recognizing the important role financial literacy plays, this paper then examines how financial education is being promoted in Japan, and makes policy recommendations for the future by outlining financial education policy in other countries.

Keywords: Financial literacy (the level of knowledge, behavior and attitude regarding finance and the economy), full-insurance hypothesis, coping mechanisms, financial and economic education, and behavior changes.

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Part 1: Empirical Analysis Using Micro Data

1. Research Background

Economic activity has been hit by the COVID-19 outbreak since 2020. As of 0:00 on April 25, 2022, the number of people tested positive for COVID-19 in Japan was approximately 7,660,000, which is not much higher than other developed countries. In the meantime the real GDP growth rate in fiscal 2020 was -4.5% from the previous year, which was more than the -3.6% recorded in fiscal 2008 at the time of the Lehman shock. According to the data on people on leave² from the Labour Force Survey, the number of people on leave was 1,610,000 in November and 1,860,000 in December 2019, before the spread of COVID-19. However, the number started to increase due to the spread of COVID-19. In April 2020, when the first emergency declaration was issued, 5,970,000 people were out of work. Although the number has decreased significantly since then, it remains at 2,420,000 as of February 2022, which is higher than the level before the spread of the infection. According to data from the Labour Force Survey, the number of unemployed people was 1,570,000 in November and 1,550,000 in December 2019. However, the number has increased due to the spread of the virus. The highest number of unemployed people was 2,150,000 in October 2020. As of February 2022, 1,800,000 people were unemployed, a level higher than that before the spread of the virus. Furthermore, looking at the year-on-year rate of total payments for employees according to the Monthly Labor Survey, 2020, was a drop of 1.2% (survey industry total), which is not so marked compared to the 3.8% drop during the Lehman shock (2009). However, the rate of change varied by industry, and industries such as “food service industry (-5.9%),” “transportation and postal services (-4.8%),” and “manufacturing industry (-3.4%) were hit hard.

In the event of such an unexpected decrease in income, the full insurance hypothesis³ states that consumption fluctuations can be avoided if the insurance market in the broad sense is sufficiently developed. In this paper, the following analysis is carried out.⁴

- 1) What is the consumption of households whose incomes have fallen due to the spread of COVID-19 like?
- 2) What measures are being taken by households whose incomes have fallen due to COVID-19 outbreak?

For each of the analyses 1) and 2) above, the differences in financial literacy levels are taken into consideration. Since Bernheim (1995) pointed out the importance of financial literacy, research on the

² In the Labor Force Survey, “people on leave” are those who have a job but did not work at all during the survey week, including

1) Employed people who are receiving or are to receive salary/wages (including absence allowance).

2) Self-employed people who have their own business and have been absent from work for less than 30 days.

Note that family employees who did not work at all during the survey week are not considered absent from work and are either totally unemployed or in the non-working population.

³ If households can buy insurance against various risks (e.g., unemployment, illness, accidents, etc.), then buying enough insurance would allow them to maintain a certain level of consumption regardless of what shocks may occur. Note that insurance here is not limited to insurance products traded as commodities in the market, but also includes informal insurance, such as financial assistance provided by family members, relatives, etc.

impact of financial literacy on household behavior has been actively carried out. For example, it is known that people with higher financial literacy have more precautionary savings in preparation for future contingencies. In addition, because they have more assets, including real assets, it may be easier for them to pass loan screening when borrowing is needed. In other words, it is expected that people with higher financial literacy will be able to cope with a decline in income and avoid a decline in consumption. This paper examines this and analyzes the effects of financial literacy.

The questionnaire used for the analysis was the “Survey on Household’s Financial Behavior and Perception amid the COVID-19 Pandemic”⁵ conducted by the Financial Services Agency, which was conducted in March 2021 in response to the statement “Supporting the financial resilience of citizens through the COVID-19 crisis” issued by the OECD to the world in April 2020.

The composition of the paper is as follows. Chapter 2 introduces previous research on the full insurance hypothesis (the hypothesis that insurance covers everything to avoid future fluctuations in consumption), on how to cope with various shocks, and on the impact of financial literacy on household behavior and explains the contribution of this paper. Chapter 3 presents an overview of the micro data used in this paper, while Chapter 4 presents descriptive statistics on changes in income and consumption and coping strategies. Chapter 5 presents a test of the full insurance hypothesis and an analysis of the impact of income shocks on coping strategies, each of which analyzes the differences in outcomes by level of financial literacy. Chapter 6 presents its conclusions and considerations.

2. Prior Study

First, we introduce some previous studies on the formulation of the consumption function. The Keynesian consumption function is a model in which consumption becomes a linear function of income at the same point in time. However, it was shown that actual consumption cannot be explained by the Keynesian consumption function. Friedman (1957) and Modigliani and Brumberg (1954, 1980) developed the Life Cycle/Permanent Income Hypothesis. The Life Cycle/Permanent Income Hypothesis, in which consumption is determined by lifetime income rather than current income, has become the standard for analyzing household consumption. However, the Life Cycle/Permanent Income Hypothesis model does not consider the insurance market for future income fluctuations. Many empirical studies have tested the full insurance hypothesis, which states that if households can buy insurance against various risks, they can avoid fluctuations in consumption by buying enough insurance. Mace (1991) is a pioneering study of testing the full insurance hypothesis. As a result of testing using the Consumer Expenditure Survey (CEX), the existence of the perfect insurance hypothesis cannot be denied because the null hypothesis cannot be rejected in many cases, such as total consumption and consumption items other than Nondurables and Clothing. Cochrane (1991), which treated the Panel Study of Income Dynamics (PSID) as cross-section data and estimated it using simple OLS, analyzed the correlation between changes in various risk indicators and changes in

⁵ See Attachment 1 for a report on the implementation of the survey. Please note that only the Japanese version is available.

consumption. As a result, whether consumption is insured or not depends on the difference in the risk index. Another study using PSID was carried out by McCarthy (1995). This paper is the first to test the full insurance hypothesis in groups. Analysis using a sub-sample divided by asset level shows that the full insurance hypothesis is valid for households with abundant assets. The interpretation is that wealthy households are coping with falling incomes by having sufficient savings and borrowing. A previous study using data from Japan was conducted by Kohara (2001), who tested the full insurance hypothesis using the “The Japanese Panel Survey of Consumers (JPSC)” of the Institute for Research on Household Economics. The full insurance hypothesis is rejected when all samples are used and when samples are divided according to assets and educational background. However, when samples are divided according to city size, income shocks are pooled for people living in urban areas.⁶ One possible reason is that people living in urban areas have easier access to insurance markets than people living in rural areas. On the other hand, as far as I know, only Zhang, Jia, and Chen (2021) have examined whether the full insurance hypothesis holds depending on the level of financial literacy. Using panel data from the China Household Finance Survey, this paper examines whether financial literacy has reduced the negative impact of the sharp decline in Chinese stock prices in 2015 on household financial income and contributed to consumption smoothing. As a result, contrary to expectations, even among people with high levels of financial literacy, the loss of financial income from the stock market crash was not mitigated. As possible reasons, he said, diversification was not helpful because most stocks had fallen, and people with higher financial literacy tended to invest in risky assets, resulting in larger losses. Financial literacy, on the other hand, played an active role in smoothing consumption, and using a sample of people with high financial literacy, there was no statistically significant difference in consumption before and after the stock market plunge. It suggests that financial literacy contributes to better coping with external shocks.

In fact, many studies have demonstrated the benefits of financial literacy. For example, people with higher levels of financial literacy are more likely to have precautionary savings (de Bassa Scheresberg (2013), Babiarez and Robb (2014))⁷ and accumulate more assets, including real assets (Behrman, Mitchell, Soo, and Bravo (2012), van Rooij, Lusardi, and Alessie (2012)⁸ and Sekita (2020)). In other

⁶ Other previous studies using data from Japan include Kohara, Ohtake, and Saito (2002). Using panel data from the Ministry of Internal Affairs and Communication’s Family Income and Expenditure Survey, they tested the full insurance hypothesis. They concluded that the full insurance hypothesis is rejected, but idiosyncratic shocks are insured relatively well for the consumption of necessities. Also Sawada and Shimizutani (2007), using microdata from the “Research Report on Changes in Lifestyles and Consumption Behavior Following the Disaster,” tested the full consumption insurance hypothesis and concluded that households affected by negative income shocks and damage to their homes and household goods tend to change their consumption behavior.

⁷ Babiarez and Robb (2014) provide the following explanation of why financial literacy encourages people to build up precautionary savings: In theory, households should build up precautionary savings, preparing for unexpected or uninsured financial risks (Deaton (1992)). However, it is likely that precautionary savings are built up if households are aware of the exact probability and severity of an emergency. Since people with high financial literacy have a strong ability to identify and assess emergency savings needs, they are more likely to have precautionary savings, compared to people with low financial literacy.

⁸ van Rooij, Lusardi, and Alessie (2012) assume two channels through which financial literacy promotes asset accumulation. The first channel is through participation in the stock market. With high levels of financial literacy,

words, it is expected that people with higher levels of financial literacy will be able to rely more on their savings. In addition, since people with higher financial literacy have more assets, including real assets, they may be more likely to pass loan screening if they need to borrow money. Therefore, people with high financial literacy are more likely to mitigate income shocks and to avoid a decline in consumption than people with low financial literacy.

Next, I present the results of empirical analysis on coping with various shocks, such as unemployment and sickness. Horioka, Murakami, and Kohara (2002), using micro data from “The Japanese Panel Survey of Consumers (JPSC)” of the Institute for Research on Household Economics, showed that unexpected shocks were dealt with mainly by dissavings, and to some extent by insurance,⁹ economic assistance, borrowing, and reducing consumption. In addition, Iwamoto, Kohara and Saito (2001) analyzed the loss of economic welfare in the event that a household member becomes dependent on long-term care or bedridden, using the micro data from “Comprehensive Survey of Living Conditions.” As a result, when a household member becomes bedridden or needs long-term care, household income decreases, consumption decreases and savings are drawn down, but the decrease in consumption is more pronounced. The results are consistent with theoretical predictions made when households judge the damage from long-term care to be sustained or permanent. Sawada and Shimizutani (2005) analyzed the coping strategies of households damaged by the Great Hanshin-Awaji Earthquake, using the micro data from “Research Report on Changes in Lifestyles and Consumption Behavior Following Disasters.” As a result, public and private transfer are ineffective against damage caused by earthquakes. This is particularly true for cohabiting households. In addition, the results show that the damage to houses was covered by borrowing, while the damage to smaller household goods was covered by dissavings. In addition, dissavings and borrowing (income transfer¹⁰) are alternatives, suggesting the existence of an insurance hierarchy from dissavings to borrowing. Sawada and Shimizutani (2008), as well as Sawada and Shimizutani (2005), analyzed the coping strategies of households damaged by the Great Hanshin-Awaji Earthquake, focusing on borrowing and private transfer, which play an important role in disaster situations.¹¹ As a result, before the earthquake, households that were under borrowing constraints did not rely on borrowing, but households that were not under borrowing constraints and whose houses were either completely destroyed (half destroyed) or completely burned (half burned) relied on borrowing. With regard to private transfer, the results show that households whose houses were either completely destroyed (half destroyed) or completely burned (half burned) depended on it, regardless of the

they are more likely to invest in the stock market. And consequently there is an opportunity to benefit from the equity premium, and assets are accordingly accumulated. The second path is through savings plan for post-retirement old age. If financial literacy is high with more economic and financial knowledge, they can make savings plans that require complex work, and accordingly they can accumulate more assets.

⁹ Insurance here means “receiving benefits from private insurance” and “claiming social insurance benefits, such as worker's compensation insurance.”

¹⁰ Income transfer means financial assistance without repayment.

¹¹ Sawada and Shimizutani (2008) focused only on private transfers and excluded public transfers from their analysis. They described the reasons for this as “income transfers by the government are automatic, and are not requested by the affected families. And the amount of government income transfers is relatively small.”

borrowing constraints before the earthquake. Based on the micro data from the National Institute of Population and Social Security Research's 2012 Survey on Life and Mutual Support, Kureishi (2014) analyzed the impact of the Great East Japan Earthquake on savings of falling income, unemployment, and job changes. As a result, it was recognized that people were coping with the decrease in income due to the Great East Japan Earthquake by dissavings, and consumption was rather increasing. This suggests that in response to the decline in income caused by the Great East Japan Earthquake, they may be trying to maintain their livelihood by making use of their savings to cover increased expenditures. Iwaisako (2021) analyzed savings and financial investment behavior during the COVID-19 pandemic, using data from original questionnaires. The results show that the decline in savings due to the negative income shock is concentrated in some households, and that individuals whose income has declined significantly have significantly reduced their assets. The survey also revealed that individuals whose income changes remain within a certain level are greatly affected by their surrounding environment other than themselves, such as increases and decreases in their family income, while for individuals whose income increases significantly, personal intention to save is the most important factor of savings.

Based on the results of previous studies, it is considered that the first way to cope with income shocks is to draw down savings, and if it is not possible to cope with them, it depends on coping methods, such as borrowing and income transfer. Also, people with higher levels of financial literacy tend to have more savings than those with lower levels, so it can be expected that they will not have to rely on other coping strategies (such as borrowing and income transfer).

Gathergood and Wylie (2018) have analyzed how different ways of coping differ according to the level of financial literacy. Using data from YouGov Tracker Surveys (August 2013), this paper shows that people with higher financial literacy have plans to make unexpected payments equivalent to their monthly household income. Specifically, the results show that people with higher financial literacy are less likely to think that they cannot raise money or do not know how to raise money, while they plan to draw down their savings or borrow money when they have to make unexpected payments equivalent to their monthly household income. (There is no difference according to financial literacy when it comes to support from family and friends and other means.) Their analysis, however, is about planning how to deal with unexpected expenses, not what households actually did in the event of an actual unexpected shock.

The contribution of this paper is that although many studies have been conducted on changes in consumption and coping strategies on income shocks, this paper is the first to my knowledge to consider differences in the level of financial literacy in terms of the impact of income shocks due to the spread of COVID-19 on changes in consumption and how to cope with them. For the first time, the study will examine whether people with higher financial literacy are able to insure consumption against income shocks due to the spread of the virus and analyze the difference in coping strategies across financial literacy. Zhang, Jia, and Chen (2021) showed that financial literacy played a positive role in smoothing consumption but did not clarify the mechanism by which financial literacy

contributed to reducing consumption volatility. This paper is also important for supplementing the point.

3. Data

In order to analyze the impact of the decline in income due to the spread of COVID-19 on changes in consumption and coping strategies, this paper uses the micro data from the “Survey on Household Financial Behavior and Perception amid the COVID-19 Pandemic” (hereinafter referred to as the “FSA data”). This survey was commissioned to Macromill Inc. by the Financial Services Agency with the aim of analyzing how the COVID-19 has changed financial behavior and attitudes among households and individuals, and whether financial literacy has led to differences in responses to such changes. It also aims to promote financial literacy more effectively in the future. Responses to this survey were sought from men and women aged 18 to 79 nationwide who are monitors registered with Macromill Co., Ltd., with the goal of collecting a sample suitable for the population composition ratio obtained from the statistics bureau of the Ministry of Internal Affairs and Communications.¹² The survey was conducted between 1 March and 4 March 2021,¹³ and 6,217 samples were collected.

As already mentioned, the FSA data are responses from monitors registered with Macromill Inc.,¹⁴ and responses are made via the Internet. Therefore, it is difficult to say that they are precise representative samples of people living in Japan. In order to clarify the characteristics of the FSA data, I compared it with the “Population Census (15-79 years old)” as of 2015. There was no significant difference in the male ratio between the Population Census and the FSA data (49.47% and 50.64%, respectively). In terms of age, the national census shows that 18-29 years old account for 15.35% of the total, 30s 16.21%, 40s 19.10%, 50s 16.04%, 60s 18.79%, and 70s 14.51%, while the FSA data shows 18-29 years old account for 14.12%, 30s 15.51%, 40s 18.93%, 50s 16.09%, 60s 24.68%, and 70s 10.67%. In other words, there was no significant difference between the two surveys for people in their 20s and 50s. However, the FSA data shows that there were more people in their 60s and less people in their 70s.¹⁵ A comparison of the educational background distribution between the 2017 Employment Status Survey (15-79 years old) and the FSA data was as follows. For the Employment

¹² As for the actual surveying process, monitors were asked to complete the survey via random distribution with the goal of collecting 6,000 questionnaires. The monitors were able to respond to the survey when they logged in to Macromill’s “My Page,” so they were able to respond at any time during the available response period. In addition, monitors are notified in advance of the name of the survey and the amount of the reward, so they are expected to select the survey to answer based on this information. Therefore, the specification is such that they do not know that this survey is an FSA project until they start answering. However, once you start answering, you will see a statement at the beginning of the survey form that says, “This survey is conducted at the request of the Financial Services Agency.” This is the first time they will find out that the survey was created by the FSA. There is no reward for responding to this survey. The “FSA data” is data from respondents who answered all the questions; the response withdrawal rate is not disclosed, and the time between starting to answer and submitting a response is also unknown.

¹³ It should be noted that the survey was conducted only about one year after the COVID-19 outbreak.

¹⁴ Responses can be made on any computer, smartphone, or tablet.

¹⁵ The survey conducted by Macromill basically aims to collect samples in accordance with the population composition ratios obtained from the data of the Statistics Bureau of the Ministry of Internal Affairs and Communications, but since the survey is conducted via the Internet, it is difficult to collect a sample of respondents in their 70s. Therefore, samples were collected for the 60s and 70s by treating them as the same age group, resulting in a sample with more people in their 60s and fewer people in their 70s compared to the Census.

Status Survey, 14.63% were junior high school graduates, 40.52% high school graduates, 11.60% vocational school graduates, 8.77% junior college/specialized vocational high school graduates, 22.21% university graduates, and 2.26% graduate school graduates. On the other hand, the FSA data shows 2.26% were junior high school graduates, 32.03% high school graduates, 11.26% vocational school graduates, 10.41% junior college/specialized vocational high school graduates, 40.10% university graduates, and 3.93% graduate school graduates. Since the percentage of people with a university degree or higher is higher in the FSA data, those in the FSA data seem more educated than those in the Employment Status Survey. Comparing “annual income and profits from major jobs” in the Employment Status Survey with “income including tax (including bonuses and business income)” in the FSA data, the distribution of income for each survey was as follows. In the Employment Status Survey, 17.04% were “less than one million yen,” 17.87% were “from one million yen to less than two million yen,” 32.72% were “from two million yen to less than four million yen,” 17.08% were “from four million yen to less than six million yen,” 8.33% were “from six million yen to less than eight million yen,” 3.58% were “from eight million yen to less than 10 million yen,” and 3.39% were “ten million yen or more.” The FSA data shows 12.04% for “less than one million yen,” 13.96% for “from one million yen to less than two million yen,” 31.17% for “from two million yen to less than four million yen,” 22.05% for “from four million yen to less than six million yen,” 11.63% for “from six million yen to less than eight million yen,” 4.90% for “from eight million yen to less than 10 million yen,” and 4.25% for “ten million yen or more.” Although the definitions of the two surveys do not completely coincide, the FSA data appear to have a higher percentage of high income.¹⁶

To explain the sample selection for analysis, in this paper, I am interested in whether the behavior varies according to the level of financial literacy, so I have omitted information on people who chose “I don’t want to answer” as an option for the quiz to measure financial literacy (= 377). In addition, the FSA data are collected for 18 to 79 years of age, but data are also omitted if the age of the response is not within the range of 18 to 79 (= 4). They also dropped “Other” when asked about their final education (= 15). Finally, the FSA data asked the respondents who are household decision makers about household consumption, borrowing, savings and investment, but also omitted information on respondents who were not decision makers (= 492). As a result, the number of samples used in the analysis was 5335.

4. Descriptive Statistics

This chapter presents descriptive statistics on the data used in the estimates. First of all, as shown in Table 1, with regard to changes in income of respondent households¹⁷ due to the spread of COVID-19, households with no change were the largest (64% = 3393/5335), followed by decreasing

¹⁷ The question regarding changes in income was “Has your household income changed as a result of the spread of the novel coronavirus?” and the options were “increased,” “decreased,” and “remained the same.” It is regrettable that there is no information on the amount of income change.

households (34% = 1822/5335) and increasing households (2% = 120/5335).¹⁸

Table 1: Changes in income and consumption

| | | Changes in consumption | | | |
|-------------------|-----------|------------------------|-----------|----------|-------|
| | | Decrease | Unchanged | Increase | |
| Changes in income | Decrease | 809 | 649 | 364 | 1,822 |
| | Unchanged | 624 | 2,379 | 390 | 3,393 |
| | Increase | 30 | 56 | 34 | 120 |
| | | 1,463 | 3,084 | 788 | 5,335 |

(Note 1) Calculated by the author using the FSA data.

In addition, in order to investigate the characteristics of people whose income decreased, I conducted a simple regression analysis, in which a dependent variable is a dummy variable equal to one if household income decreases. As shown in Table 2, the income of self-employed people tends to decrease in comparison with that of company employees, public servants, business owners, and executives. By industry, the income of people working in travel, hotel, laundry, hairdressing, beauty and bath, restaurants, other lifestyle-related services, transportation, postal services, manufacturing, and other professional and technical services is on the decline. On the other hand, those who work in the take-home and delivery services are less likely to see their incomes fall, suggesting that the pandemic has led people to refrain from eating out and choose to eat at home.

Table 2: Determinants of income decline

| | Decrease in Income |
|----------------|------------------------|
| Age 30-39 | 0.0038 (0.0233) |
| Age 40-49 | -0.0084 (0.0230) |
| Age 50-59 | -0.0093 (0.0240) |
| Age 60-64 | -0.0533** (0.0244) |
| Age 65 or over | -0.1669*** (0.0225) |

¹⁸ Looking at responses related to unexpected events that occurred after the spread of COVID-19 infection other than income, the majority of households had no unexpected events (85%). Regarding changes in employment, 4% of households had a person who resigned, 3% had a person who changed jobs, and 1% had a person who found a new job. Regarding changes in health status, 0.4% of households had a person whose health status had improved, and 5% had a person whose health status had worsened. The number of household members increased in 2% of households and decreased in 1% of households. And 0.4% of households had a person infected with the novel coronavirus.

| | |
|---|------------------------|
| Male | -0.0054 (0.0145) |
| Vocational school or junior college graduates | 0.0171 (0.0177) |
| Graduates of university or higher degree | 0.0010 (0.0152) |
| Before-tax income | -0.0001*** (0.0000) |
| Self-employed | 0.2443*** (0.0300) |
| Contract, temporary, part-time workers and other | 0.0165 (0.0209) |
| Homemakers, students, and unemployed | 0.0206 (0.0327) |
| Agriculture, forestry, fishery, and mining industry | 0.0234 (0.0910) |
| Construction industry | 0.0331 (0.0435) |
| Manufacturing industry | 0.1729*** (0.0340) |
| Electricity, gas, heat supply, and water industry | 0.1271* (0.0743) |
| Information and communication industry | 0.0177 (0.0457) |
| Transportation and mail industry | 0.1996*** (0.0483) |
| Wholesale and retail industry | 0.1096*** (0.0365) |
| Finance and insurance industry | -0.0127 (0.0458) |
| Real estate industry | -0.0194 (0.0577) |
| Leasing industry | -0.1077 (0.1468) |
| Academic and development research institution | 0.2769 (0.1777) |
| Professional and technical services | 0.1453** (0.0578) |
| Advertisement industry | 0.1480 (0.1937) |
| Lodging industry | 0.4389*** (0.0964) |
| Restaurants | 0.2614*** (0.0565) |
| Take-home and delivery services | -0.2980*** (0.0427) |

| | |
|---|-----------------------|
| Laundry, hairdressing, beauty and bath industry | 0.3784*** (0.0981) |
| Travel industry | 0.5009*** (0.0804) |
| Other lifestyle-related services | 0.2210*** (0.0641) |
| Entertainment industry | 0.1840 (0.1326) |
| Education and learning support industry | 0.0464 (0.0470) |
| Medical and welfare industry | -0.0139 (0.0362) |
| Post office | -0.1088 (0.1589) |
| Cooperative association | -0.0260 (0.0885) |
| Other services | 0.0950** (0.0378) |
| Others | 0.1536*** (0.0512) |
| Constant | 0.3291*** (0.0358) |
| <hr/> | |
| No. of observation | 5,335 |
| R-squared | 0.0811 |

(Note 1) Standard errors in parentheses. ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

Looking back to Table 1 and looking at changes in consumption¹⁹ after the spread of COVID-19, 58% (= 3084/5335) of households showed no change, followed by 27% (= 1463/5335) showing a decrease and 15% (= 788/5335) showing an increase.

Furthermore, Table 1 shows a relationship between changes in income and changes in consumption. Among households with decreased income, those with decreased consumption accounted for the largest share (44% = 809/1822). As far as descriptive statistics are concerned, the full insurance hypothesis does not seem to hold. Consumption may also be changing, even if incomes remain the same, as the spread of COVID-19 has made it harder for consumers to eat out and travel. In terms of households with no change in income, 18% (= 624/3393) saw a decrease in consumption, while 70% (= 2379/3393) saw no change. In addition, only 11% (= 390/3393) of households saw their consumption increase while their income did not change.

From Table 3, looking at coping methods households chose after the spread of COVID-19, we can

¹⁹ The question about changes in consumption was “Has there been a change in consumption in your household since the spread of COVID-19?” and the options are “increased,” “decreased,” and “unchanged. It is regrettable that there is no information on the change in consumption by amount or by consumption item.

see that 17% of households (= 897/5335) have reduced their savings, 4% (= 291/5335) have borrowed, and 10% (= 545/5335) have received income transfers.²⁰ In terms of the relationship with changes in income, households with declining income were more likely to take some measures than other households. The most common measure was to reduce savings, followed by income transfer and the least by borrowing.²¹

Table 3: Income Changes and Coping Methods

| | | Coping methods | | | |
|-------------------|-----------|----------------|-----------|-----------------|-------|
| | | Dissaving | Borrowing | Income transfer | |
| Changes in income | Decrease | 638 | 191 | 348 | 1,177 |
| | Unchanged | 247 | 91 | 182 | 520 |
| | Increase | 12 | 9 | 15 | 36 |
| | | 897 | 291 | 545 | 1,733 |

(Note 1) Calculated by the author using the FSA data.

5. Empirical Analysis

In this chapter, I analyze the impact of falling income on changes in consumption and consider how the impact differs according to the level of financial literacy. I then analyze how people tend to cope with a decline in income (dissavings, borrowing, and income transfer) and also consider the differences between levels of financial literacy.

²⁰ Unfortunately, there are no data on the amount of savings withdrawals, borrowing, or income transfers.

²¹ In addition, the survey used by this paper also asked respondents about their intention to build up both precautionary savings and retirement savings. For both questions, there were four options: “I was saving before the spread of COVID-19,” “I started saving after the spread of COVID-19,” “I didn’t save before the spread of COVID-19 and I don’t now, but I plan to do so in the future,” and “I didn’t save before the spread of COVID-19, I don’t now, and I don’t plan to in the future.” Looking at the breakdown of these responses by age group, for both precautionary savings and saving for retirement, a higher percentage of those under 30 years old responded “I started saving after the spread of COVID-19” than in the other age groups. This can be assumed to reflect the fact that the COVID-19 pandemic made the younger age groups in particular aware of the importance of building up both precautionary savings and retirement savings and that they have taken action. For more details, see Appendix 7.2 Respondents’ Intentions Regarding Precautionary Savings and Saving for Retirement.

Table 4 Descriptive Statistics

| Variables | Observations | Mean | SD | Min. | Max. |
|--|--------------|---------|--------|------|------|
| Changes in consumption | 5335 | -0.1265 | 0.6372 | -1 | 1 |
| Income reduction | 5335 | 0.3415 | 0.4743 | 0 | 1 |
| Shocks caused by the spread of COVID-19 | | | | | |
| Increase in household members | 5335 | 0.0154 | 0.1230 | 0 | 1 |
| Decrease in household members | 5335 | 0.0139 | 0.1170 | 0 | 1 |
| Divorced/widowed | 5335 | 0.0028 | 0.0530 | 0 | 1 |
| Married | 5335 | 0.0084 | 0.0915 | 0 | 1 |
| Health improvement | 5335 | 0.0041 | 0.0641 | 0 | 1 |
| Health deterioration | 5335 | 0.0530 | 0.2241 | 0 | 1 |
| COVID-19 infection | 5335 | 0.0043 | 0.0655 | 0 | 1 |
| Four types of financial literacy | | | | | |
| Financially managed | 5335 | 0.4219 | 0.4939 | 0 | 1 |
| Have a life plan | 5335 | 0.4180 | 0.4933 | 0 | 1 |
| Have financial knowledge | 5335 | 0.4769 | 0.4995 | 0 | 1 |
| Utilizing external knowledge | 5335 | 0.3580 | 0.4795 | 0 | 1 |
| Coping methods | | | | | |
| Dissaving | 5335 | 0.1681 | 0.3740 | 0 | 1 |
| Borrowing | 5335 | 0.0545 | 0.2271 | 0 | 1 |
| Income transfer | 5335 | 0.1022 | 0.3029 | 0 | 1 |

(Note 1) Calculated by the author using the FSA data

5.1 Empirical analysis of the impact of income reduction on changes in consumption

Section 5.1 presents an empirical analysis of the impact of declining income on changes in consumption. Specifically, following Sawada and Shimizutani (2007), who tested the full insurance hypothesis.

$$\Delta c_i = \sum_{k=1}^K \delta_k R_k^a + S_i \gamma + u_i(1)$$

In formula (1), c denotes household consumption, while Δ denotes the difference operator, and i denotes the i th household. k is a dummy variable identifying the regional insurance network, and R^a is a dummy variable equal to one if the i th household resides in the k region and is used to control the average change in consumption. The matrix S represents the shock of the COVID-19 outbreak. u is the error term.

The data used in this paper do not include data on numerical changes in consumption. Instead, FSA data includes a questionnaire asking whether consumption has increased, remained unchanged, or declined among respondents' households since the spread of COVID-19. Therefore, the following variables are defined to be 1 if consumption increases, 0 if consumption remains unchanged, and -1 if consumption decreases, and are estimated by the Ordinary Least Squares estimation.

$$\left. \begin{aligned} I_i^c &= 1 \text{ if } \Delta c_i \text{ is positive} \\ &= 0 \text{ if } \Delta c_i \text{ is zero} \\ &= -1 \text{ if } \Delta c_i \text{ is negative} \end{aligned} \right\} (2)$$

Among the S shocks caused by the spread of COVID-19, what I focus most on is the “income reduction dummy.” This variable is 1 if the income of the respondent’s household decreased due to the spread of COVID-19, and 0 if it did not. If the full insurance hypothesis holds, the coefficient of

“income reduction dummy” should not be statistically significant because consumption should not change as income decreases. In addition to the “income reduction dummy,” variables that indicate shock include the increase in household members dummy, decrease in household members dummy, divorced/widowed dummy, married dummy, health improvement dummy, health deterioration dummy, and COVID-19 infection dummy.

The estimated results are shown in Table 5, where the coefficient of the “income reduction dummy” is negative and statistically significant. In other words, households with declining incomes tend to consume less than those without declining incomes. As for the coefficients of other explanatory variables, the coefficient of the increase in household members dummy is significantly positive. This means that households with an increase in the number of household members have increased their consumption compared to households with the same number of household members. Although not shown in Table 5, a region dummy with the Kanto region as the default was also controlled, and only the coefficient for the Tohoku region was statistically significantly positive. The Tohoku region had a relatively low ratio of infection cases to population and was not subject to the declaration of emergency situations or quasi-state of emergency,²² which may have led to an increase in consumption compared to people living in the Kanto region.

Although the results were not consistent with the full insurance hypothesis when the entire sample was used, people with high financial literacy may be able to avoid a decline in consumption by reducing their savings or borrowing when their income declines. Therefore, the sample is divided according to the level of financial literacy, and equations (1) and (2) are estimated. Although various indicators of financial literacy have been used in previous studies, this paper defines financial literacy based on the “Minimum Financial Literacy to be acquired” described in the “Report of the Study Group on Financial and Economic Education”²³ compiled and published in April 2013 by the Study Group on Financial and Economic Education established in the Financial Services Agency’s Financial Research Center. “Minimum Financial Literacy to be acquired” is divided into four areas: “household financial management,” “life planning,” “financial knowledge, understanding of financial and economic conditions and appropriate use and selection of financial products,” and “appropriate use of external knowledge.” Therefore, answers to questions related to each area are used as indicators of financial literacy (for specific questions, see Appendix 7.1 Questions Used to Define Financial Literacy).²⁴

First, regarding “household financial management,” in response to the question of “Do you have a custom of using a household account book in your household?” I defined it as “financially managed” if a person selected the answer “I already used one even before the spread of COVID-19,” and if not, “not financially managed.”

Next, regarding “life planning,” in response to the question of “Do you have a financial plan for your post-retirement old age? (if you are already in post-retirement old age, please tell us whether you have a financial plan for your life going forward), I defined it as “have a life plan,” if the answer was “I had a financial plan since before the COVID-19 outbreak,” and if not, “have no life plan.”

²² Using data on the cumulative number of positive cases as of February 28, 2021, and the population as of October 1, 2020, the percentage of cumulative positive cases by prefecture was calculated to be 0.52% for the Kanto region, while it was as low as 0.09% for the Tohoku region. As a result, the Tohoku region was rarely a target area for the declaration of a state of emergency. In 2020, the Tohoku region was covered only from April 16 to May 14. In 2021, only Miyagi Prefecture was declared an emergency zone from August 15 to September 9.

²³ For more information, visit <https://www.fsa.go.jp/news/24/sonota/20130430-5/01.pdf>, please be noted that the report is in Japanese.

²⁴ It is possible that people’s level of financial literacy may have changed through the spread of the COVID-19 infection, in which case dividing the sample according to the level of financial literacy after the change may cause bias in the results. Yamori and Ueyama (2021) administered a financial literacy test (three questions on compound interest calculation, understanding inflation, and understanding diversified investments) to the same individuals in 2019 and 2021, and using the Bowker test, they analyzed the differences between the options for each question and found no statistically significant differences. The average number of correct answers was 1.58 in 2019 and 1.51 in 2021, which is lower than the number in 2019, at the 10% level, by the Wilcoxon test, but the difference is slight. Thus, while changes in financial literacy before and after the spread of COVID-19 infection cannot be ruled out, it is unlikely that using it as an indicator for sample partitioning would have a serious impact.

Table 5: Analysis of income reduction and changes in consumption (full sample)

| | Changes in consumption |
|-------------------------------|------------------------|
| Income reduction | -0.1886*** (0.0205) |
| Increase in household members | 0.2561*** (0.0933) |
| Decrease in household members | 0.0302 (0.0875) |
| Divorced/widowed | -0.0515 (0.2066) |
| Married | 0.0583 (0.0968) |
| Health improvement | -0.0693 (0.1917) |
| Health deterioration | 0.0688 (0.0496) |
| COVID-19 infection | 0.1031 (0.1642) |
| Constant | -0.0824*** (0.0162) |
| No. of observations | 5335 |
| R-squared | 0.0234 |

(Note 1) Standard errors in parentheses. ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) In addition to the above variables, area dummies (Hokkaido, Tohoku, Chubu, Kinki, Chugoku, Shikoku, and Kyushu) are also controlled.

Regarding “financial knowledge, understanding of financial and economic conditions and appropriate use and selection of financial products,”²⁵ I defined it as “have financial knowledge” if five or more of the eight questions in the economic and financial related quiz were correct, and “do not have financial knowledge” if less answers are correct.

Lastly, with regard to “appropriate use of external knowledge,”²⁶ I defined it as “utilizing external knowledge” if a respondent chose the answer “I’ve been doing it since before the COVID-19 outbreak” in response to the question “Have you collected information on finance, investment, savings, etc. since the spread of COVID-19?” Otherwise, I defined it as “not utilizing external knowledge.”

²⁵ The “Minimum Financial Literacy” defined by the Study Group on Financial and Economic Education includes 12 items in the area of financial knowledge, understanding of financial and economic conditions, and appropriate use and selection of financial products. However, the eight-question quiz used in this paper to define financial literacy does not cover all 12 items. In order to more accurately determine whether respondents have acquired literacy of “financial knowledge, understanding of financial and economic conditions, and appropriate use and selection of financial products,” it would be more appropriate to ask questions on each of the 12 items.

²⁶ In order to determine whether the respondents have acquired literacy of “making appropriate use of external knowledge,” we should observe data on their responses to questions that would allow us to determine whether they are making appropriate use of knowledge obtained from outside sources. Unfortunately, however, such a question has not been asked, so this paper uses data from responses to the question, “Do you collect information on finance, investment, savings, etc.?” to define this question.

**Table 6: Analysis of income reduction and consumption change
(sample split by financial literacy)**

| | Coefficients of income reduction dummies | Test results of the hypothesis that the coefficients in the two groups were the same | Observations |
|----------------------------------|--|--|--------------|
| Full sample | -0.1886*** | | 5335 |
| Financially managed | -0.2015*** | F(1, 5303)=0.35 | 2251 |
| Not financially managed | -0.1793*** | Prob>=0.5570 | 3084 |
| Have a life plan | -0.1447*** | F(1, 5303)=4.21 | 2230 |
| Have no life plan | -0.2228*** | Prob>=0.0402 | 3105 |
| Have financial knowledge | -0.2001*** | F(1, 5303)=0.18 | 2544 |
| Have no financial knowledge | -0.1843*** | Prob>=0.6695 | 2791 |
| Utilizing external knowledge | -0.1402*** | F(1, 5303)=3.87 | 1910 |
| Not utilizing external knowledge | -0.2171*** | Prob>=0.0492 | 3425 |

(Note 1) ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) When the sample is divided according to financial literacy status, and the hypothesis that the coefficient of the income reduction dummy is the same in the two groups is rejected, the coefficients are highlighted.

Table 6 shows the “income reduction dummy” coefficients estimated using the entire sample and the “income reduction dummy” coefficients when the sample is divided according to financial literacy in the four fields. It is negative and significant for all samples, indicating that consumption is decreasing due to a decrease in income. Even in a sample with a high level of financial literacy, the negativity of the income reduction dummy may reflect households’ perception that the decline in income due to the spread of COVID-19 would prolong rather than temporal.

On the other hand, since there appears to be a difference in the size of the coefficients, when the samples were divided according to financial literacy, the hypothesis that the coefficients in the two groups were the same was tested. As a result, the hypothesis was rejected for “life planning” and “appropriate use of external knowledge” (the coefficients for which the hypothesis was rejected are highlighted). In the case of the “have a life planning” sample, the trend of decrease in consumption when income decreases is smaller than that of the “have no life planning” sample. In the case of the “utilizing external knowledge” sample, the trend of decrease in consumption when income decreases is also smaller than that of the “not utilizing external knowledge” sample. This implies that, among financial literacy categories, “life planning” and “appropriate use of external knowledge” seem to have the effect of mitigating income shocks.²⁷

A statistically significant difference in the coefficient of the “income reduction dummy” was observed only when the samples were divided by the presence or absence of “life planning” and “appropriate use of external knowledge” in financial literacy. However, it cannot be concluded that the presence or absence of “household financial management” and “financial knowledge” does not make a difference in the relationship between changes in income and changes in consumption. This is because it would be difficult to make a “life plan” without “financial knowledge” and it would be impossible to make a “life plan” without “household financial management.” Indeed, many previous studies have found that people with higher levels of financial knowledge are more likely to plan for post-retirement old age (e.g., van Rooij, Lusardi and Alessie (2011), Sekita (2011)). This implies that just “doing household financial management” and/or “having financial knowledge” factors are not sufficient enough to avoid a decline in consumption due to an income shock, while it is possible to mitigate the decline in consumption by developing a life plan for the future based on these factors.

²⁷ When I used the sample of “have a life plan” and “utilizing external knowledge,” the coefficient of the income decline dummy was significant at -0.1384, which means that the tendency of consumption to decline when income declines was smaller than in the case of the full sample, as expected.

**Table 7: Analysis of income reduction and changes in consumption
(sample split by income and financial literacy)**

| Low-income group | Coefficients of income reduction dummies | Test results of the hypothesis that the coefficients in the two groups were the same | Observations |
|----------------------------------|--|--|--------------|
| Full sample | -0.1805*** | | 3747 |
| Financially managed | -0.2206*** | F(1, 3715)=2.21 | 1613 |
| Not financially managed | -0.1539*** | Prob>=0.1376 | 2134 |
| Have a life plan | -0.1469*** | F(1, 3715)=1.61 | 1420 |
| Have no life plan | -0.2057*** | Prob>=0.2042 | 2327 |
| Have financial knowledge | -0.1933*** | F(1, 3715)=0.11 | 1602 |
| Have no financial knowledge | -0.1783*** | Prob>=0.7394 | 2145 |
| Utilizing external knowledge | -0.1765*** | F(1, 3715)=0.06 | 1166 |
| Not utilizing external knowledge | -0.1882*** | Prob>=0.8086 | 2581 |

| High-income group | Coefficients of income reduction dummies | Test results of the hypothesis that the coefficients in the two groups were the same | Observations |
|----------------------------------|--|--|--------------|
| Full sample | -0.2070*** | | 1588 |
| Financially managed | -0.1451** | F(1, 1556)=1.85 | 638 |
| Not financially managed | -0.2407*** | Prob>=0.1736 | 950 |
| Have a life plan | -0.1270** | F(1, 1556)=4.44 | 810 |
| Have no life plan | -0.2718*** | Prob>=0.0352 | 778 |
| Have financial knowledge | -0.2018*** | F(1, 1557)=0.00 | 942 |
| Have no financial knowledge | -0.2051*** | Prob>=0.9613 | 646 |
| Utilizing external knowledge | -0.0759 | F(1, 1556)=11.14 | 744 |
| Not utilizing external knowledge | -0.3047*** | Prob>=0.0009 | 844 |

(Note 1) ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) When the sample is divided according to financial literacy status, and the hypothesis that the coefficient of the income reduction dummy is the same in the two groups is rejected, the coefficients are highlighted.

While the results in Table 6 appear to show the effect of financial literacy, previous studies have found that higher income is associated with higher levels of financial literacy, so the results in Table 6 may simply reflect the size of income. Therefore, it is examined whether the effect of financial literacy will appear even if the sample is divided according to income level. Table 7 shows the estimated results when the respondent's annual income including tax is less than 4,000,000 yen in the “low-income group” and 4,000,000 yen or more in the “high-income group.”

First, looking at the estimation results for the low-income group, even when the samples were divided according to financial literacy level, there was no statistically significant difference in the coefficient for the “income reduction dummy.” Those in low-income groups with high financial literacy may not have been able to save so much because they could not afford to save even if they wanted to.

Next, the estimation results for the “high-income group” are the same as those shown in Table 6 (full sample), as we can observe the effects of “life planning” and “appropriate use of external knowledge.” People with high incomes and high levels of financial literacy may be able to reduce income shocks to some extent because they have sufficient savings and are therefore more likely to pass loan screening if borrowing is needed.

**Table 8: Analysis of income reduction and changes in consumption
(sample split by industry and financial literacy)**

| Working in industries vulnerable to the influence of COVID-19 | Coefficients of income reduction dummies | Test results of the hypothesis that the coefficients in the two groups were the same | Observations |
|--|--|--|--------------|
| Full sample | -0.1967*** | | 1183 |
| Financially managed | -0.2108*** | F(1, 1153)=0.07 | 459 |
| Not financially managed | -0.1906*** | Prob>=0.7977 | 724 |
| Have a life plan | -0.1856*** | F(1, 1151)=0.02 | 451 |
| Have no life plan | -0.1976*** | Prob>=0.8803 | 732 |
| Have financial knowledge | -0.1492*** | F(1, 1151)=1.45 | 583 |
| Have no financial knowledge | -0.2415*** | Prob>=0.2291 | 600 |
| Utilizing external knowledge | -0.1751*** | F(1, 1151)=0.11 | 414 |
| Not utilizing external knowledge | -0.2023*** | Prob>=0.7368 | 769 |

| Group other than the above | Coefficients of income reduction dummies | Test results of the hypothesis that the coefficients in the two groups were the same | Observations |
|-----------------------------------|--|--|--------------|
| Full sample | -0.1796*** | | 4152 |
| Financially managed | -0.1968*** | F(1, 4120)=0.31 | 1792 |
| Not financially managed | -0.1723*** | Prob>=0.5769 | 2360 |
| Have a life plan | -0.1304*** | F(1, 4120)=4.50 | 1779 |
| Have no life plan | -0.2242*** | Prob>=0.0340 | 2373 |
| Have financial knowledge | -0.2134*** | F(1, 4120)=1.46 | 1961 |
| Have no financial knowledge | -0.1611*** | Prob>=0.2267 | 2191 |
| Utilizing external knowledge | -0.1265*** | F(1, 4120)=3.59 | 1496 |
| Not utilizing external knowledge | -0.2132*** | Prob>=0.0580 | 2656 |

(Note 1) ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) When the sample is divided according to financial literacy status, and the hypothesis that the coefficient of the income reduction dummy is the same in the two groups is rejected, the coefficients are highlighted.

Furthermore, as shown in Table 2, the degree of impact of COVID-19 seems to vary depending on the industry. Therefore, the industries in which the coefficient in Table 2 was significant and particularly large (travel industry (0.5009), lodging industry (0.4389), laundry, hairdressing, beauty and bath industry (0.3784), restaurants (0.2614), other life-related services (0.2210), transportation and mail industry (0.1996), manufacturing industry (0.1729), other (0.1536), and professional and technical services (0.1453)) were considered to have been significantly affected by COVID-19, and the sample was divided into those who are working in industries vulnerable to the influence of COVID-19 and those who are not. The results are shown in Table 8. Using a sample of people working in sectors vulnerable to the influence of COVID-19, I found no statistically significant difference in the coefficient of “income reduction dummy” by level of financial literacy. People working in industries vulnerable to the influence of COVID-19 may have seen a greater decline in income, and even those with high financial literacy may not have been able to restrain the decline in consumption, even if they held savings. On the other hand, when other samples were used, the effects of “life planning” and “appropriate use of external knowledge“ were observed as shown in Table 6. In a group that was less affected by the influence of COVID-19, the decline in income may have been smaller, and more financially literate people may have been able to mitigate the decline in consumption to some degree by using their savings or borrowing when their savings alone were insufficient.

5.2 Empirical analysis of the impact of income reduction on coping strategies

In Section 5.2, I analyze what coping strategies are more likely to be adopted among households with declining incomes compared to those without declining incomes. For this purpose, the following equations (3) - (5) are estimated.

$$\Delta D_i = \sum_{k=1}^K \beta_{1k} R_k^a + S_i \theta_1 + \varepsilon_{1i} \quad (3)$$

$$\Delta B_i = \sum_{k=1}^K \beta_{2k} R_k^a + S_i \theta_2 + \varepsilon_{2i} \quad (4)$$

$$\Delta T_i = \sum_{k=1}^K \beta_{3k} R_k^a + S_i \theta_3 + \varepsilon_{3i} \quad (5)$$

D represents dissavings, B a borrowing, and T an income transfer. The explanatory variables of Equations (3) - (5) are the same as those of Equation (1).

The surveys used in this paper do not ask about the amount of dissavings, borrowing, or income transfers, but do ask whether people have withdrawn savings, borrowed money, or received income transfers. Therefore, the following dummy variables were defined and estimated by the Ordinary Least Squares: the dummy is 1 if savings were drained after the spread of COVID-19, and it is 0 otherwise; the dummy is 1 if they borrowed money from financial institutions, public organizations such as the government municipalities, and/or their families, relatives, friends, or acquaintances after the spread of COVID-19, and the dummy is 0 if they did not borrow; and the dummy is 1 if they had received financial assistance as no-repayment-required grants from public organizations such as government municipalities, and/or their families, relatives, friends, or acquaintances due to financial difficulties caused by the spread of COVID-19, and it is 0 if they had not received such grants.

$$p_{1i} = 1 \text{ if } \Delta D_i > 0 \text{ and } 0 \text{ otherwise} \quad (6)$$

$$p_{2i} = 1 \text{ if } \Delta B_i > 0 \text{ and } 0 \text{ otherwise} \quad (7)$$

$$p_{3i} = 1 \text{ if } \Delta T_i > 0 \text{ and } 0 \text{ otherwise} \quad (8)$$

Among the estimated results in Table 9, the coefficient for the “income reduction dummy” are significantly positive in all three equations, indicating that households with decreased income tend to take measures such as “dissavings,” “borrowing” and “income transfer” compared with households without decreased income. If we look at the size of the coefficient, we can see that “dissavings” is the most used approach, followed by “income transfer” and finally by “borrowing.” The result that unexpected shocks are dealt with mainly by dissavings is consistent with the result of Horioka, Murakami, and Kohara (2002).

Next, in order to confirm the effect of financial literacy, the analysis was carried out by dividing the sample according to the presence or absence of four fields of financial literacy. As can be seen from Table 10, regardless of the sample used, the most frequently used countermeasure is “dissavings,” followed by “income transfer,” and finally by “borrowing.” In addition, looking at the difference in the coefficient of the “income reduction dummy” according to financial literacy, no statistically significant difference was observed for “dissavings.” With regard to borrowing, on the other hand, those with “household financial management,” “life plan,” and “appropriate use of external knowledge” are less likely to use borrowing than those with “no household financial management,” “no life plan,” and “no utilization of external knowledge.” As for income transfer, people with a “life plan,” “financial knowledge,” and “appropriate use of external knowledge” are less likely to use income transfer than those with “no life plan,” “no financial knowledge,” and no utilization of external knowledge.” In other words, people with high levels of financial literacy are less dependent on borrowing and income transfer than those with low levels of financial literacy. This is consistent with the original expectation. In other words, “dissavings” was used regardless of financial literacy but, people with high financial literacy tended to have more savings, so they did not rely too much on other coping strategies (borrowing and coping strategies).

As for the analysis of coping strategies, the effect of financial literacy will be confirmed by dividing a sample according to income level. Table 11 shows that people with high financial literacy, regardless of income level, are less likely than those with low financial literacy to resort to all kinds of coping

strategies, particularly borrowing and income transfer.

In addition, since coping strategies may differ depending on whether or not people are working in industries that are vulnerable to the impact of COVID-19, the analysis was also conducted by dividing the sample by industry. As can be seen from Table 12, in the case of people who do not work in industries that are relatively susceptible to the impact of COVID-19, the higher the level of financial literacy, the less likely they are to rely on “borrowing” or “income transfer.”

Table 9: Analysis of income decline and coping strategies (full sample)

| | Dissaving | Borrowing | Income transfer |
|-------------------------------|-----------------------|-----------------------|-----------------------|
| Income reduction | 0.2641*** (0.0122) | 0.0735*** (0.0078) | 0.1279*** (0.0100) |
| Increase in household members | 0.0334 (0.0476) | -0.0115 (0.0267) | 0.0205 (0.0392) |
| Decrease in household members | -0.0023 (0.0460) | 0.0266 (0.0358) | 0.1275** (0.0516) |
| Divorced/widowed | 0.1523 (0.1142) | 0.0411 (0.0787) | 0.0135 (0.0990) |
| Married | 0.0243 (0.0611) | 0.0629 (0.0463) | -0.0071 (0.0498) |
| Health improvement | 0.1039 (0.0965) | 0.0996 (0.0729) | 0.1260 (0.0873) |
| Health deterioration | 0.1454*** (0.0287) | 0.0333* (0.0189) | 0.0685*** (0.0243) |
| COVID-19 infection | 0.0745 (0.0814) | 0.0546 (0.0598) | 0.1251 (0.0812) |
| Constant | 0.0693*** (0.0084) | 0.0176*** (0.0048) | 0.0402*** (0.0065) |
| No. of observations | 5,335 | 5,335 | 5,335 |
| R-squared | 0.1339 | 0.0336 | 0.0537 |

(Note 1) Standard errors in parentheses. ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) In addition to the above variables, area dummies (Hokkaido, Tohoku, Chubu, Kinki, Chugoku, Shikoku, and Kyushu) are also controlled.

This is roughly in line with the results estimated from the full sample. Those working in sectors vulnerable to the influence of COVID-19, on the other hand, difference in the level of financial literacy did not affect tendency to borrow. Even those with high financial literacy may have had to rely on “borrowing” to some extent because their income would have declined significantly if they work in industries vulnerable to the influence of COVID-19.

5.3 Robustness check

The estimation results in Table 6 show that among people with high levels of financial literacy, those with a “life plan” and “appropriate use of external knowledge” in particular show a smaller tendency to reduce consumption when their income declines. The estimation results in Table 10 also show that people with high financial literacy are mainly dependent on savings and less dependent on borrowing and income transfer than those with low financial literacy. This suggests that people with a high level of financial literacy are accumulating more assets and using their accumulated savings during periods of declining income to mitigate the decline in consumption. As previous studies have shown that

people with higher levels of financial literacy accumulate more assets (Behrman, Mitchell, Soo, and Bravo (2012), van Rooij, Lusardi, and Alessie (2012), and Sekita (2020)), I examined if the same result could be drawn from FSA data. Table 13 shows how the four financial literacy variables affect household net wealth (financial assets held + real assets appraised value - liabilities balance) estimated by the Ordinary Least Squares.

Table 10: Analysis of income reduction and coping strategies (sample split by financial literacy)

| Coefficients of income reduction dummies | | | | | | | |
|--|-----------|--|-----------|--|-----------------|--|--------------|
| | Dissaving | Test results of the hypothesis that the coefficients in the two groups were the same | Borrowing | Test results of the hypothesis that the coefficients in the two groups were the same | Income transfer | Test results of the hypothesis that the coefficients in the two groups were the same | Observations |
| Full sample | 0.2641*** | | 0.0735*** | | 0.1279*** | | 5335 |
| Financially managed | 0.2640*** | F(1, 5303)=0.01 | 0.0467*** | F(1, 5303)=10.25 | 0.1254*** | F(1, 5303)=0.02 | 2251 |
| Not financially managed | 0.2659*** | Prob>=0.9271 | 0.0894*** | Prob>=0.0014 | 0.1277*** | Prob>=0.8949 | 3084 |
| Have a life plan | 0.2502*** | F(1, 5303)=0.68 | 0.0479*** | F(1, 5303)=7.29 | 0.0934*** | F(1, 5303)=7.65 | 2230 |
| Have no life plan | 0.2676*** | Prob>=0.4105 | 0.0844*** | Prob>=0.0069 | 0.1426*** | Prob>=0.0057 | 3105 |
| Have financial knowledge | 0.2566*** | F(1, 5303)=0.42 | 0.0662*** | F(1, 5303)=0.63 | 0.1041*** | F(1, 5303)=5.91 | 2544 |
| Have no financial knowledge | 0.2791*** | Prob>=0.5171 | 0.0767*** | Prob>=0.4284 | 0.1462*** | Prob>=0.0151 | 2791 |
| Utilizing external knowledge | 0.2504*** | F(1, 5303)=0.75 | 0.0547*** | F(1, 5303)=3.61 | 0.0938*** | F(1, 5303)=6.73 | 1910 |
| Not utilizing external knowledge | 0.2691*** | Prob>=0.3869 | 0.0810*** | Prob>=0.0576 | 0.1412*** | Prob>=0.0095 | 3425 |

(Note 1) ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) When the sample is divided according to financial literacy status, and the hypothesis that the coefficient of the income reduction dummy is the same in the two groups is rejected, the coefficients are highlighted.

Table 11: Analysis of income reduction and coping strategies (sample split by income and financial literacy)

| Low-income group | Coefficients of income reduction dummies | | | | | | Observations |
|----------------------------------|--|--|-----------|--|-----------------|--|--------------|
| | Dissaving | Test results of the hypothesis that the coefficients in the two groups were the same | Borrowing | Test results of the hypothesis that the coefficients in the two groups were the same | Income transfer | Test results of the hypothesis that the coefficients in the two groups were the same | |
| Full sample | 0.2762*** | | 0.0779*** | | 0.1382*** | | 3747 |
| Financially managed | 0.2794*** | F(1, 3715)=0.01 | 0.0474*** | F(1, 3715)=9.70 | 0.1487*** | F(1, 3715)=0.87 | 1613 |
| Not financially managed | 0.2766*** | Prob>=0.9151 | 0.0958*** | Prob>=0.0019 | 0.1287*** | Prob>=0.3517 | 2134 |
| Have a life plan | 0.2807*** | F(1, 3715)=0.10 | 0.0539*** | F(1, 3715)=4.07 | 0.1053*** | F(1, 3715)=4.10 | 1420 |
| Have no life plan | 0.2721*** | Prob>=0.7480 | 0.0864*** | Prob>=0.0437 | 0.1501*** | Prob>=0.0429 | 2327 |
| Have financial knowledge | 0.2859*** | F(1, 3715)=0.46 | 0.0765*** | F(1, 3715)=0.00 | 0.1153*** | F(1, 3715)=2.77 | 1602 |
| Have no financial knowledge | 0.2684*** | Prob>=0.4987 | 0.0763*** | Prob>=0.9895 | 0.1509*** | Prob>=0.0964 | 2145 |
| Utilizing external knowledge | 0.2809*** | F(1, 3715)=0.08 | 0.0578*** | F(1, 3715)=2.55 | 0.1112*** | F(1, 3715)=2.34 | 1166 |
| Not utilizing external knowledge | 0.2729*** | Prob>=0.7741 | 0.0846*** | Prob>=0.1105 | 0.1466*** | Prob>=0.1263 | 2581 |

| High-income group | Coefficients of income reduction dummies | | | | | | Observations |
|----------------------------------|--|--|-----------|--|-----------------|--|--------------|
| | Dissaving | Test results of the hypothesis that the coefficients in the two groups were the same | Borrowing | Test results of the hypothesis that the coefficients in the two groups were the same | Income transfer | Test results of the hypothesis that the coefficients in the two groups were the same | |
| Full sample | 0.2321*** | | 0.0647*** | | 0.1029*** | | 1588 |
| Financially managed | 0.2178*** | F(1, 1556)=0.33 | 0.0497** | F(1, 1556)=0.93 | 0.0721*** | F(1, 1556)=2.25 | 638 |
| Not financially managed | 0.2378*** | Prob>=0.5629 | 0.0749*** | Prob>=0.3352 | 0.1185*** | Prob>=0.1335 | 950 |
| Have a life plan | 0.1951*** | F(1, 1556)=3.08 | 0.0403** | F(1, 1556)=2.50 | 0.0724*** | F(1, 1556)=2.54 | 810 |
| Have no life plan | 0.2543*** | Prob>=0.0793 | 0.0807*** | Prob>=0.1140 | 0.1207*** | Prob>=0.1109 | 778 |
| Have financial knowledge | 0.2064*** | F(1, 1557)=3.16 | 0.0491*** | F(1, 1557)=2.17 | 0.0836*** | F(1, 1557)=2.58 | 942 |
| Have no financial knowledge | 0.2667*** | Prob>=0.0758 | 0.0866*** | Prob>=0.1409 | 0.1327*** | Prob>=0.1085 | 646 |
| Utilizing external knowledge | 0.2002*** | F(1, 1556)=2.44 | 0.0501*** | F(1, 1556)=0.76 | 0.0682*** | F(1, 1556)=2.90 | 744 |
| Not utilizing external knowledge | 0.2528*** | Prob>=0.1186 | 0.0722*** | Prob>=0.3838 | 0.1195*** | Prob>=0.0889 | 844 |

(Note 1) ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) When the sample is divided according to financial literacy status, and the hypothesis that the coefficient of the income reduction dummy is the same in the two groups is rejected, the coefficients are highlighted.

Table 12: Analysis of income reduction and coping strategies (sample split by industry and financial literacy)

| Working in industries vulnerable to the influence of COVID-19 | Coefficients of income reduction dummies | | | | | | Observations |
|---|--|--|-----------|--|-----------------|--|--------------|
| | Dissaving | Test results of the hypothesis that the coefficients in the two groups were the same | Borrowing | Test results of the hypothesis that the coefficients in the two groups were the same | Income transfer | Test results of the hypothesis that the coefficients in the two groups were the same | |
| Full sample | 0.2560*** | | 0.0752*** | | 0.1294*** | | 1183 |
| Financially managed | 0.2672*** | F(1, 1153)=0.19 | 0.0680*** | F(1, 1153)=0.20 | 0.1359*** | F(1, 1153)=0.02 | 459 |
| Not financially managed | 0.2483*** | Prob>=0.6614 | 0.0824*** | Prob>=0.6555 | 0.1301*** | Prob>=0.8817 | 724 |
| Have a life plan | 0.2328*** | F(1, 1151)=0.74 | 0.0540** | F(1, 1151)=0.34 | 0.0980*** | F(1, 1151)=1.35 | 451 |
| Have no life plan | 0.2707*** | Prob>=0.3895 | 0.0732*** | Prob>=0.5584 | 0.1438*** | Prob>=0.2462 | 732 |
| Have financial knowledge | 0.2570*** | F(1, 920)=0.00 | 0.0644*** | F(1, 1151)=0.52 | 0.0787*** | F(1, 1151)=6.72 | 583 |
| Have no financial knowledge | 0.2598*** | Prob>=0.9467 | 0.0873*** | Prob>=0.4694 | 0.1769*** | Prob>=0.0096 | 600 |
| Utilizing external knowledge | 0.2271*** | F(1, 1151)=0.99 | 0.0579*** | F(1, 1151)=0.31 | 0.0896*** | F(1, 1151)=1.49 | 414 |
| Not utilizing external knowledge | 0.2712*** | Prob>=0.3197 | 0.0762*** | Prob>=0.5808 | 0.1383*** | Prob>=0.2226 | 769 |

| Group other than the above | Coefficients of income reduction dummies | | | | | | Observations |
|----------------------------------|--|--|-----------|--|-----------------|--|--------------|
| | Dissaving | Test results of the hypothesis that the coefficients in the two groups were the same | Borrowing | Test results of the hypothesis that the coefficients in the two groups were the same | Income transfer | Test results of the hypothesis that the coefficients in the two groups were the same | |
| Full sample | 0.2750*** | | 0.0700*** | | 0.1276*** | | 4152 |
| Financially managed | 0.2712*** | F(1, 4120)=0.14 | 0.0386*** | F(1, 4120)=11.99 | 0.1261*** | F(1, 4120)=0.00 | 1792 |
| Not financially managed | 0.2804*** | Prob>=0.7068 | 0.0897*** | Prob>=0.0005 | 0.1262*** | Prob>=0.9941 | 2360 |
| Have a life plan | 0.2656*** | F(1, 4120)=0.17 | 0.0441*** | F(1, 4120)=6.76 | 0.0963*** | F(1, 4120)=4.82 | 1779 |
| Have no life plan | 0.2759*** | Prob>=0.6777 | 0.0828*** | Prob>=0.0094 | 0.1409*** | Prob>=0.0281 | 2373 |
| Have financial knowledge | 0.2693*** | F(1, 4120)=0.18 | 0.0627*** | F(1, 4120)=0.44 | 0.1153*** | F(1, 4120)=0.97 | 1961 |
| Have no financial knowledge | 0.2796*** | Prob>=0.6684 | 0.0723*** | Prob>=0.5057 | 0.1349*** | Prob>=0.3241 | 2191 |
| Utilizing external knowledge | 0.2701*** | F(1, 4120)=0.06 | 0.0519*** | F(1, 4120)=3.02 | 0.0990*** | F(1, 4120)=3.74 | 1496 |
| Not utilizing external knowledge | 0.2765*** | Prob>=0.8011 | 0.0785*** | Prob>=0.0825 | 0.1395*** | Prob>=0.0533 | 2656 |

(Note 1) ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

(Note 2) When the sample is divided according to financial literacy status, and the hypothesis that the coefficient of the income reduction dummy is the same in the two groups is rejected, the coefficients are highlighted.

The coefficients for the “life plan,” “financial knowledge,” and “appropriate use of external knowledge” dummies were all positive and statistically significant. In particular, the coefficients for the “life plan” and “appropriate use of external knowledge” dummies were large. This result is consistent with that in Table 6, implying that these two items raise net wealth more strongly and thus mitigate fluctuations in consumption when income declines. Although the coefficient for the “household financial management” dummy is not significant, it cannot be said that household financial management is not necessary to raise net wealth. This is because it is impossible to make a life plan without managing the household budget and grasping the income and expenditure. The results in Table 13 suggest that it is not possible to increase net wealth just by managing the household financials, and that it is important to carry out household financial management and make a life plan.

Table 13: Analysis of Financial Literacy and Net Wealth

| | Net wealth |
|---|-----------------------------|
| Financially managed | -98.4501 (86.0024) |
| Have a life plan | 908.2695*** (93.1344) |
| Have financial knowledge | 408.9629*** (89.6991) |
| Utilizing external knowledge | 858.4117*** (105.6819) |
| Age 30-39 | 58.5867 (112.1048) |
| Age 40-49 | 316.4447*** (115.2636) |
| Age 50-59 | 1,044.5113*** (126.3320) |
| Age 60-64 | 2,129.3344*** (157.6049) |
| Age 65 or over | 2,391.9627*** (170.9756) |
| Male | -354.1837*** (95.9080) |
| Vocational school or junior college graduates | 273.8224*** (97.0630) |
| Graduates of university or higher degree | 676.3532*** (97.2709) |
| Before-tax income | 2.7286*** (0.2725) |
| Self-employed | 821.9300*** (189.9521) |
| Contract, temporary, part-time workers or other | 528.8462*** (131.1429) |
| Homemakers, students, or unemployed | 1,226.8320*** (147.3199) |
| Married | -273.1169*** (96.4930) |

| | |
|--------------------------|------------------------------|
| No. of children | -284.5108*** (51.9985) |
| No. of household members | 337.1249*** (41.4290) |
| Retired | 87.8709 (187.5802) |
| Cognitive test | 133.1208*** (41.0529) |
| Risk averse | -71.8419** (30.4412) |
| Myopic | -117.3468*** (25.5860) |
| Self-control | 132.3425*** (45.5846) |
| Constant | -1,926.9504*** (194.2828) |
| <hr/> | |
| No. of observation | 5255 |
| R-squared | 0.2760 |

(Note 1) Standard errors in parentheses. ***: Significant at the 1% level. **: Significant at the 5% level. *: Significant at the 10% level.

6. Conclusion and Discussion

In order to analyze the impact of income declines caused by the influence of COVID-19 on changes in consumption and how to cope with it, I conducted an empirical analysis using micro data from “a survey on households’ financial behavior and perception amid the COVID-19 pandemic.” As a result, with respect to high-income people and people who do not work in industries vulnerable to the impact of COVID-19, those with high financial literacy are less likely to decrease consumption when their income decreases than those with low financial literacy, and it can be said that income shocks have been pooled to some extent. As for how to cope with income reduction, it was found that people with high financial literacy are mainly dependent on dissavings and are less likely to rely on borrowing and income transfer than those with low financial literacy. It can be interpreted that people with higher levels of financial literacy accumulate more assets and thus do not rely on other coping strategies.

According to the analysis in this paper, it is particularly important to make a life plan and to utilize external knowledge in order to cope with the shock of the spread of COVID-19. However, according to calculations based on the FSA data, only about 42% of people are planning their lives (financial planning) and about 36% are making use of external knowledge (gathering information on finance, investment, savings, etc.). Therefore, it may be necessary to establish a mechanism to encourage behavioral change. Ohtake (2019, p. 66) discusses the decision making, bottleneck and nudges for retirement saving. If we consider the bottlenecks in decision making in preparation for external shocks, it is conceivable that people are unable to plan their lives because they do not know how much they or their families’ employment, income and living conditions will be affected by external shocks such as COVID-19. A nudge to help these people plan their lives could include a guideline on the amount of precautionary savings, or an app that lets them easily calculate precautionary savings. Another bottleneck in utilizing external knowledge is that its importance is not well understood. Therefore, it may be useful to use loss aversion and show the expected level of decline in living standards in the event of external shocks for those who do not utilize external knowledge.

Table 14: Descriptive Statistics on Financial Literacy and Precautionary Savings

| Low income | Have a life plan | Have no life plan |
|---|------------------|-------------------|
| Have or plan to have precautionary savings | 1,316 | 1,551 |
| Do not have and do not plan to have any precautionary savings | 104 | 776 |
| | 1,420 | 2,327 |

| Working in industries vulnerable to the influence of COVID-19 | Have a life plan | Have no life plan |
|--|------------------|-------------------|
| Have or plan to have precautionary savings | 425 | 513 |
| Do not have and do not plan to have any precautionary savings | 26 | 219 |
| | 451 | 732 |

(Note 1) Calculated by the author using the FSA data.

Finally, it should be noted that low-income people and people working in industries vulnerable to the impact of the COVID-19 pandemic, even those with high financial literacy, reduced their consumption as much as those with low financial literacy, making it difficult to mitigate income shocks. Does financial literacy contribute to reducing consumption volatility only when incomes are high or income shocks are low? Does it not help when incomes are low or income shocks are high? I observed the responses regarding precautionary savings among low-income people and people working in industries vulnerable to the impact of COVID-19 (see Table 14). Among low-income people (3747 people), 77% (=2867/3747) of the total have or plan to build up precautionary savings. The higher the level of financial literacy, the higher the percentage. For example, 92% (= 1316/1420) of low-income people with a life plan have or plan to have precautionary savings, while only 67% (=1551/2327) of low-income people without a life plan have or plan to have precautionary savings. Among the 1183 people working in industries vulnerable to the impact of COVID-19, 79% (938/1183) of them currently have or plan to build up precautionary savings. And, looking into the further breakdown, the ratio is higher among people with higher financial literacy measured by “having a life plan”; for example, 94% (425/451) of people working in industries vulnerable to the impact of COVID-19 who have a life plan already have or plan to build up precautionary savings, while only 70% (513/732) of people working in industries vulnerable to the impact of COVID-19 who have no life plan yet have or plan to build up precautionary savings. In order to cope with unexpected shocks in the future, financial literacy is important regardless of income level or the size of income shock, and it is necessary to promote financial and economic education.

However, it is a fact that low-income people have difficulty saving enough because they do not have much money as a source of savings in the first place. Thus, it is also important to guide low-income earners to increase their income. The “Financial Literacy Map” is a systematic and specific description of “Minimum Financial Literacy to be acquired” by age group. The specific content of the “Life Plan” in the “Financial Literacy Map” states that “people understand that there are large differences in lifetime income, etc. depending on how they work and how they add value and understand that various efforts and methods are necessary to earn money and realize their dreams and hopes.” It is also important to show concrete ways to add value, such as obtaining qualifications, in the field of education.

7. Supplement

7.1 Questions Used to Define Financial Literacy)²⁸

“Household financial management”

Q. 40: “Do you have a custom of using a household account book in your household?”

1. Yes, even before the spread of COVID-19
2. Not before COVID-19 spread, but we started to use one after it spread.
3. Not before or even now, but we plan to use one in the future.
4. Not before or now, and we will not use on in the future either.

“Life plan”

Q. 38: “Do you have a financial plan for your post-retirement old age? (If you are already in post-retirement old age, please tell us whether you have a financial plan for your life going forward.)”

1. I had a plan even before COVID-19 spread.
2. I didn’t have a plan before COVID-19 spread, but I made one after the spread.
3. I didn’t have a plan before COVID-19 spread and I don’t have one now, but I will make one in the future.
4. I didn’t have a plan before COVID-19 spread, and I don’t plan to have one in the future.

“Financial knowledge, understanding of financial and economic conditions and appropriate use and selection of financial products”

For all the questions below, the following instructions were presented in advance: “This is a question to confirm your general level of understanding, so please answer without any outside references or consultation,” and, “Even if you don’t answer correctly, there will be no impact on the reward or future questionnaire distribution.” The survey was setup such that it is not possible to return to the previous questions and re-do them.

Q. 16: “Suppose you have 10,000 yen in your bank account and the interest rate is 2% per year. Also, the deposited money and interest will never be withdrawn from your account. How much money will be in your savings account in a year? (Please assume that there is no tax.) Please choose one of the following answers.

- 1) Over 10,200 yen
- 2) Just 10,200 yen (correct)
- 3) Less than 10,200 yen
- 4) I don’t know.
- 5) I don’t want to answer.

Q. 17: “Suppose you have 10,000 yen in your bank account and the interest rate is 2% per year. Also, the deposited money and interest will never be withdrawn from your account. How much money will be in your savings account in 5 years? (Please assume that there is no tax.) Please choose one of the following answers.

- 1) Over 11,000 yen (correct)
- 2) Just 11,000 yen
- 3) Less than 11,000 yen
- 4) I don’t know.
- 5) I don’t want to answer.

Q. 18: “Suppose the interest rate on your deposit account is 1% per year and the inflation rate is 2% per year. How much do you think you will be able to buy with the money in that account in a year? Please choose one of the following answers.”

²⁸ It is important to note that a high percentage of correct answers to financial literacy questions does not necessarily mean that financial competency is present. For example, it is not enough just to have the habit of keeping a household account book, but it will be necessary to keep a household account book to manage income and expenditure, and then work to eliminate deficits and secure surpluses. It should be noted that there are other items to be measured in terms of knowledge, behavior, and attitude in addition to the questions in 7.1 in order to measure financial competency.

- 1) I can buy more things than today
- 2) I can buy exactly the same things as today.
- 3) I can buy less than today (correct)
- 4) I don't know.
- 5) I don't want to answer.

Q. 19: "Do you think the following sentence is correct?" Please choose one of the following answers.

<Item list>

1. "Buying stock of a company usually yields more reliable returns than buying a stock mutual fund" (the correct answer is "wrong").
2. "Stocks are usually more risky than bonds" (the correct answer is "correct")
3. "Investments that are expected to deliver high returns usually have high risks" (the correct answer is "correct")
4. "There is no need to buy insurance for an event with a very low probability of occurrence" (correct answer is "wrong")

<Choice List>

1. Correct
2. Wrong
3. I don't know.
4. I don't want to answer.

Q. 20: "What do you think will happen to bond prices when interest rates fall?" Please choose one of the following answers.

- 1) Go up (correct)
- 2) Go down
- 3) Unchanged
- 4) Other than 1-3
- 5) I don't know.
- 6) I don't want to answer.

"Appropriate use of external knowledge"

Q. 42: Have you collected information on finance, investment, savings, etc. since the spread of COVID-19?

- 1) Yes, even since before the spread of COVID-19
- 2) I didn't before the spread of COVID-19 but started to after the spread.
- 3) I didn't do it before or now, but I will in the future.
- 4) I didn't do it before or now, and I won't in the future.

7.2 Respondents' preferences regarding precautionary savings and retirement savings

Table 15: Precautionary Savings (savings for unexpected revenue losses and expenses)

| | Have had precautionary savings since before the spread of COVID-19 | Have had precautionary savings since after the spread of COVID-19 | Never had precautionary savings but plan to have them | Never had precautionary savings and do not plan to have them |
|----------|--|---|---|--|
| Age18-29 | 43% | 11% | 28% | 19% |
| Age30-39 | 55% | 5% | 25% | 16% |
| Age40-49 | 53% | 3% | 23% | 21% |
| Age50-59 | 51% | 3% | 23% | 23% |
| Age60-69 | 60% | 3% | 16% | 22% |
| Age70-79 | 57% | 1% | 9% | 33% |

(Note 1) Calculated by the author using the FSA data.

Table 16: Retirement Savings

| | Have had retirement savings since before the spread of COVID-19 | Have had retirement savings since after the spread of COVID-19 | Never had retirement savings but plan to have them | Never had retirement savings and do not plan to have them |
|----------|---|--|--|---|
| Age18-29 | 30% | 8% | 42% | 20% |
| Age30-39 | 48% | 4% | 35% | 12% |
| Age40-49 | 48% | 3% | 33% | 16% |
| Age50-59 | 50% | 2% | 30% | 18% |
| Age60-69 | 62% | 2% | 19% | 18% |
| Age70-79 | 61% | 1% | 9% | 28% |

(Note 1) Calculated by the author using the FSA data.

Part 2: Current Financial and Economic Education and Policy Recommendations

In Part 2, Chapter 1 explains the state of financial and economic education in Japan, and Chapter 2 introduces financial and economic education in other countries and makes policy recommendations for future financial and economic education in Japan.

1. Current Status of Financial and Economic Education in Japan

In Japan, the main institutions promoting financial and economic education are the Central Council for Financial Services Information (Secretariat: Public Relations Department, Bank of Japan) and the Financial Services Agency (FSA). In November 2012, the FSA established the Study Group on Financial and Economic Education, whose members include experts in the arena of financial education, relevant ministries and governmental agencies, and relevant private sector organizations. The Study Group discussed future financial and economic education and published its report in April 2013.²⁹ The report states that financial and economic education has three meanings and objectives: “financial literacy as a living skill,” “financial literacy that promotes the supply of sound and high-quality financial products,” and “financial literacy that leads to the effective use of Japan’s household financial assets.” Specifically, it states that “the significance and objectives of financial and economic education are to enable each and every citizen to become economically independent and lead a better life through the improvement of financial literacy, and to contribute to the realization of a fair and sustainable society through the promotion of the provision of sound and high-quality financial products and the effective use of household financial assets.” For this purpose, the “Minimum Financial Literacy to be acquired” includes “household financial management,” “life planning,” “financial knowledge, understanding of financial and economic conditions and appropriate use and selection of financial products,” and “appropriate use of external knowledge.” In order to make this information known and understood by relevant organizations, the Central Council for Financial Services Information (CCFSI) held discussions with relevant organizations and requested them to base the seminars they hold on “minimum financial literacy to be acquired.” Each organization also has implemented such seminars based on this aim. In June 2013, the CCFSI established the Council for the Promotion of Financial and Economic Education, whose members include experts in the arena of financial education, relevant ministries and governmental agencies, and relevant private sector organizations. The council discussed measures to address the issues set out in the Report of the Study Group on Financial and Economic Education. Eighteen meetings have been held since the first meeting on June 7, 2013.

The Council for Promotion of Financial and Economic Education has been working on a wide range of issues. Below, the author summarizes the contents of the nine items, focusing on the status of implementation of the addressed matters written in the meeting materials.

1.1 Materialization and systematization of the content of minimum financial literacy to be acquired

Under the leadership of the CCFSI, the “Financial Literacy Map,”³⁰ which systematically and in detail describes the “minimum financial literacy to be acquired” by different age groups, which is the core of financial and economic education in Japan, and the “Age-Specific Goals for Financial Education in Schools,”³¹ were prepared. They have been translated into English and were introduced at the 3rd OECD/INFE Officials Meeting and provided to the secretariat.

1.2 Development of a system for providing information on financial and economic education

The CCFSI and the FSA are acting as the implementing bodies. In order to make the CCFSI website

²⁹ <https://www.shiruporuto.jp/public/document/container/suishin/pdf/20130607/shiryoku2.pdf> (in Japanese)

³⁰ “Financial Literacy Map” has been regarded as the de facto National Strategy of Financial Education (NSFE) by OECD-INFE and its member countries. <https://www.shiruporuto.jp/public/document/container/literacy/pdf/map.pdf> (in Japanese)

³¹ <https://www.shiruporuto.jp/public/document/container/program/mokuhyo/pdf/mokuhyo000.pdf> (in Japanese)

“Shiruporuto” known as the first access point on the Internet for information on financial and economic education, they are linking to the FSA website and making use of government publicity and symposiums organized by the FSA and the Local Finance Bureaus. “Shiruporuto” and related organizations’ websites are also linked so that users can easily and comprehensively access information on financial and economic education.

1.3 Enhancing financial and economic education for elementary, junior and senior high schools

1.3.1 Approach to Revision of the Courses of Study

The CCFSI, the FSA, the Japan Securities Dealers Association, the Japanese Bankers Association, the General Insurance Association of Japan, and the Life Insurance Association of Japan worked together to submit written opinions to the Ministry of Education, Culture, Sports, Science and Technology on the Courses of Study for Junior High Schools and the Courses of Study for Senior High Schools, and to hold explanatory meetings for textbook publishers to edit textbooks based on the new Courses of Study.

1.3.2 Provision of supplementary teaching materials and guidance materials for teachers

The Japan Securities Dealers Association compiled the results of the Survey on Financial and Economic Education at Junior and Senior High Schools in order to grasp the actual situation of financial and economic education teachers in social studies, civics, and home economics at junior and senior high schools. As a result, it became clear that the number of hours devoted to financial and economic education is extremely limited in the field of school education and that there are many demands for effective supplementary teaching materials. Under these circumstances, relevant organizations such as the CCFSI and the FSA are actively creating and providing new educational materials and updating existing ones.

For example, the CCFSI took various opportunities to disseminate educational materials for junior and senior high school students (brochures, animated videos, and “Now You Are Independent,” which is a self-guided study material) to teachers. The materials encourage them to acquire knowledge about the reduction of the legal age of majority and contracts. It also distributed educational materials for junior high school students (social studies, civics, technology, and family in home economics) at national conferences of school-subject research organizations. In addition, the Japanese Bankers Association provided four types of educational materials free of charge to junior and senior high schools nationwide: “Life Planning/Money Plan Game,” “Your Relationship with Banks,” “First Time with Money,” and “Series Educational Materials: Money Basics.” The Japan Securities Dealers Association provided free hands-on teaching materials to junior and senior high schools, regularly distributed an e-mail magazine for teachers, and provided free simulation teaching materials to junior and senior high schools in cooperation with the Tokyo Stock Exchange. In addition, at the request of high schools, the Japan Institute of Life Insurance provided the following materials free of charge to high schools nationwide: (i) a 50-minute set of class materials titled “Life Planning and Preparation for Risks” (PowerPoint materials that teachers can use in their own classes, student worksheets, and class development plans); and (ii) “You, Your Future and Life Plan” (student workbooks with stickers that can be used to create life plan tables, and teacher manuals). The General Insurance Association of Japan has also created supplementary teaching materials (workbooks for students and manuals for teachers) that teachers can use in their classes to prepare students for the risks around them, created a lecture material for high school students titled “Bicycle Accidents —Did you know?” and used it in various lectures. In addition, Japan Exchange Group provides a teaching material called “Let's Enjoy Learning with Teacher ‘Shares [Equity]’: The Structure of Companies that issue shares (for junior and senior high school students)” and a teaching material called “Let's Learn About and Support Your Company!” The Consumer Affairs Agency released “The Door to Society,” a consumer education textbook for high school students, and prepared a manual for teachers in cooperation with the Consumer Education Promotion Council and the Ministry of Education, Culture, Sports, Science and Technology.

Supplementary teaching materials are also being developed based on the opinions of teachers. For example, the Japan Institute of Life Insurance examined and verified supplementary teaching materials for high schools through meetings with high school teachers and created supplementary teaching materials for school education. In addition, the Life Insurance Association prepared educational materials on social security and insurance for social studies (civics) courses at junior and senior high schools based on the opinions of junior and senior high school teachers, the Ministry of Education, Culture, Sports, Science and Technology, and the Ministry of Health, Labour and Welfare. The materials were posted on the portal site for teachers on the Life Insurance Association website.

In addition, in order to disseminate and promote the use of supplementary teaching materials, a table was prepared that summarizes the relationship between teaching materials prepared by relevant organizations and “Financial Literacy Map,” and PR activities were carried out. For example, the Japanese Bankers Association sent direct mail to junior and senior high schools, universities, boards of education, education centers, consumer affairs centers, and other organizations throughout the country, calling for the dispatch of instructors and the use of teaching materials. The Japan Securities Dealers Association also carried out advertisements in educational newspapers and made announcements through SNS and the Internet.

In recent years, with a view to lowering the age of adulthood from April 2022, relevant ministries and governmental agencies have been working together to promote initiatives based on the “Action Program for Promoting Consumer Education for Young People.” However, due to the impact of COVID-19, opportunities to visit high schools and dispatch instructors to training sessions for teachers have decreased. As a result, class videos were created and distributed online. The Consumer Affairs Agency and the FSA distributed “class videos for students” and “instructional videos for teachers” from “Gacco.”³² From April 2022, in addition to lowering the age of adulthood, the content of financial and economic education was expanded by the revision of the Courses of Study for Senior High Schools,³³ the FSA has prepared and published teaching materials (PowerPoint slides, on-demand videos for high school students and teachers³⁴) while listening to the opinions of senior high school teachers, etc. As a result of these efforts, it became possible for schools to have students watch “class videos for students” first, and then use the remaining time for teachers to explain and answer questions from students.

In addition, the FSA, in cooperation with the Unko Drill series (“Prof. Poo’s Study Drills,” published by Bunkyo-sha), which appeals to children, published online the Unko Money Drill for elementary school students and the Unko Quiz for new adults. Since April 2022, a booklet version of the Unko Money Drill has also been distributed to those who wish to use it.³⁵

1.3.3 Implementation of seminars and training for teachers of social studies, civics and home economics

Seminars for teachers have been held across the country and online. For example, the FSA sent instructors to training sessions for home economics teachers to introduce the significance of financial and economic education, methods of guidance on asset formation and financial troubles, and to request the cooperation of local boards of education in these efforts. In addition to introducing practical examples of financial education at elementary, junior high and senior high schools with explanations from teachers in charge, the CCFSI also holds seminars for teachers at “Financial Education Festa,” an event to think about money. The CCFSI also invites educational institutions to submit practical reports on financial education, commending excellent research results, suggestions, and practices, and posting them on the website of the CCFSI. The Japanese Bankers Association also sent instructors to teacher training sessions and study groups to introduce teaching materials that can be used in classes and practical examples, and to hold workshops to experience teaching materials. The Japan

³² <https://gacco.org/syotyoyou/>

³³ According to hearings with the FSA, schools have been inundated with information and educational materials related to financial and economic education from financial institutions and related organizations since the start of the new curriculum guidelines, which seems to have confused schools and teachers to some extent.

³⁴ <https://www.fsa.go.jp/news/r3/sonota/20220317/20220317.html>

³⁵ <https://www.fsa.go.jp/news/r3/sonota/20220322/20220322.html>

Association for Financial Planners also held a “Personal Finance Education Seminar” to introduce teaching materials and lesson examples using textbooks for high school students. The Japan Institute of Life Insurance held seminars for teachers, mainly for those in home economics, social studies, and civics courses at junior and senior high schools. It also introduced keynote lectures and supplementary materials for school education, and held information exchange meetings. In addition to holding seminars for teachers, the Japan Securities Dealers Association collaborated with the Study Group for Promotion of Financial and Economic Education to produce “An Introduction to Financial Literacy for Children,” one of the contents of the teacher license renewal courses conducted by the Talent Development Education Research Foundation. The General Insurance Association of Japan held seminars mainly for teachers in home economics, social studies, and civics courses at junior and senior high schools. In cooperation with the Japan Institute for Social and Economic Affairs, the General Insurance Association of Japan also carried out “Private Sector Training for Teachers” for elementary and junior high school teachers. Japan Exchange Group also held seminars mainly for social studies teachers at junior and senior high schools.

1.3.4 Promotion of on-site lectures

Lectures on finance and economics education are actively conducted by relevant organizations. For example, the CCFSI provides lectures by financial services information advisers and commissions financial and monetary education and research schools to schools nationwide, subsidizes education and research expenses, provides materials and teaching materials, and dispatches instructors. In addition, the FSA is expanding the number of lectures given by its staff to schools. In addition, the Japanese Bankers Association continues to conduct its signature dispatch of lecturers to any school anywhere, and in cooperation with the local boards of education, it designates certain schools as “designated schools for financial and economic education and research,” supports the implementation of classes related to financial and economic education, and continues to implement the “designated school system for financial and economic education and research,” which aims to disseminate financial and economic education classes to neighboring schools. In addition, the Japan Institute of Life Insurance held lectures on life planning and risk management for junior and senior high school students nationwide. The General Insurance Association of Japan gave lectures on bike safety education to elementary school students, lectures titled “Bike Accidents and Related Responsibilities” to junior high school students, and lectures titled “Bike and Car Accidents and Related Responsibilities” to high school students. In addition, the Consumer Affairs Agency dispatched instructors to lectures delivered to high school students (young people) for the purpose of practical consumer education utilizing the “Door to Society” developed by the Consumer Affairs Agency. The Japan Association for Financial Planners also provides high schools with lectures on personal finance education (financial and economic education).

1.3.5 Development of environment for lowering the age of adulthood

The “Action Program for the Promotion of Consumer Education for Young People” was decided by four related ministries and agencies: Consumer Affairs Agency, Ministry of Education, Culture, Sports, Science and Technology, the FSA, and Ministry of Justice. Therefore, the CCFSI took up lowering the age of adulthood as one of the themes at the plenary session of the seminar for teachers and gave lectures and conducted exercises at seminars for teachers at prefectural financial public relations committees and education centers. The CCFSI also took up the subject at the Financial Public Information Advisor training session and improved the skills of on-site lectures by introducing teaching materials and group discussions and presentations by participants. In addition, the CCFSI disseminated to teachers educational materials for junior and senior high school students (brochures and animated videos and “Now You Are Independent”) that encourage them to acquire knowledge about issues relating to lowering the age of adulthood and legal contracts. In addition, educational materials for junior high school students (in the fields of civics in social studies, and technology and home economics) were distributed at national conferences of academic research groups to promote dissemination. The Japan Association for Financial Planners also revised the “Personal Finance Education Standard,” which summarizes the knowledge and skills related to personal finance education that must be acquired by different age groups and life stage, in view of the lowering of the

age of adulthood and the revision of the Courses of Study.

1.3.6 Other

The CCFSI holds the “Essay Contest on Money Management” for junior high school students and the “Essay Contest on Finance and Economy” for high school students. The aim is for students to think about money.

1.4 Enhancement of financial and economic education for universities

The CCFSI, in cooperation with cooperating organizations (the FSA, Consumer Affairs Agency, Japanese Bankers Association, Japan Securities Dealers Association, Investment Trusts Association, Japan Institute of Life Insurance, General Insurance Association of Japan, Japan Association for Financial Planners, Japan Exchange Group, and Trust Companies Association of Japan), holds Financial Literacy Map-based collaborative lectures. In addition, constituent organizations of the Council for the Promotion of Financial and Economic Education prepared a common teaching material for financial literacy titled “Core Contents for Financial and Economic Education.” It was created as an entry material that touches on the whole picture of financial literacy, recalls its basic concepts, and raises interest in the relationship between life and money. It is freely downloadable from “Shiruporuto” (the CCFSI) website. Subsequently, with the COVID-19 pandemic as a turning point, the promotion of educational activities using digital technology has become increasingly necessary. The constituent organizations of the Council for the Promotion of Financial and Economic Education created an e-learning course (free video).³⁶ It is mainly for university students and young adults, but anyone can take the course free of charge by completing registration on the “gacco” website, which showcases popular e-learning contents and is operated by one of the biggest mobile carriers. Starting with introductory videos that motivate students to take the course, there are content videos related to each theme. There is also a proficiency check to take after watching the videos. Each video is about 10-15 minutes long, and the screen is designed for viewing on a smartphone.

In addition, various lectures are offered by the FSA, the CCFSI, the Japan Securities Dealers Association, the Japan Association for Financial Planners, the Japan Exchange Group, the General Insurance Association of Japan, the Japan Institute of Life Insurance, and the Trust Companies Association of Japan.

1.5 Enhancement of financial and economic education for adults

1.5.1 Organizing the basic concept of financial and economic education for adults

At the Council for the Promotion of Financial and Economic Education, the “Basic Concept of Financial and Economic Education for Adults” was organized, and it stated that it is desirable to provide financial and economic education through various channels in accordance with the “Financial Literacy Map” with cooperation among related organizations. It also stated that it is vital to ensure neutrality and fairness in efforts. Details are shared among relevant organizations and published in the minutes and materials of the Council for the Promotion of Financial and Economic Education.

1.5.2 Provision of Teaching Materials

The CCFSI prepared and distributed brochures for young adults and families. In addition, the Japan Institute of Life Insurance distributed free booklets and held explanatory lectures for young adults, such as families with children and graduates of vocational schools.

1.5.3 Better Dissemination of Information via the Internet

Relevant organizations promoting financial education use the Internet to provide new information or to update existing content. For example, the FSA tries to stimulate interest among potential individual

³⁶ Anyone can register and take the course for free in the webpage of https://lms.gacco.org/courses/course-v1:gacco+ga167+2022_04/about.

investors who are interested in investment but are hesitant to take the next step for action, FSA holds round-table meetup discussion sessions called “Speak up frankly!! Tsumitate (Accumulate-type) NISA³⁷ Round-table Discussion” with investment bloggers and FSA officials who are investment beginners. They are posted on the FSA website one by one. In addition, the Trust Companies Association of Japan has set up a special website, “Learn from Scratch,” which explains the function and mechanism of how the legal entity of a “trust” works in the financial arena in plain language on the webpages titled “What is a trust?” and “How is it used?” and has also set up a “Fun Learning About Trusts Quiz” page, which enables users to check their level of understanding of trusts through a quiz. The Japan Securities Dealers Association has released a website called “Investment Time” for people who want to learn about asset management and securities investment. As part of the expansion of this content, the website includes stories from the experiences of those who have tried securities investment, as well as articles from the “Securities Investment Seminar Starting from Scratch” in which popular individual investors and fund managers are invited as lecturers. It has also added and updated a page related to “Attractiveness of Shareholder Benefits and Dividends,” a glossary, and Q&A on investment. It also posted a “Securities Investment Experience Report” on its MyNavi Women’s website, which showcased first-time investors’ experience with opening investment accounts and choosing products. The Investment Trusts Association updated its “Investment Trust General Search Library” to improve the search function and released interactive videos in which users not only view videos but also develop stories in an interactive format according to their choice, in order to promote understanding and utilization of investment trusts (mutual funds). In addition, General Insurance Association of Japan updated its website “Facts of General Insurance,” which teaches consumers about the structure and types of non-life insurance policies and important notes about contracts, to a site compatible with smartphones, and updated the contents of its website “Bike Accidents and Insurances.” In addition, the Japanese Bankers Association updated its website “Tell me! Lifestyle and Banks” with the content of articles (preparation for retirement life, the adult guardianship system, inheritance (right of residence of spouses, etc.) and reports on people involved in schooling and consumer education.

1.5.4 Providing comparative information on individual investment trust products

The Japan Association for Financial Planners launched the “FP explains useful information about Investment Trusts” website (which ended on March 31, 2020) to provide information on how to use investment trusts according to life stages and how to compare them by product. In addition, the Investment Trusts Association’s “Investment Trust General Search Library” added a function to enable the viewing and downloading of investment reports from the fund list screen of each fund and posted a guide on use explaining how to search and display screens of the “Investment Trust General Search Library.” They also conducted a survey of users of the “Investment Trust General Search Library” and listened to their opinions on future improvements. Japan Exchange Group (JPX) has established the “Tokyo Stock Exchange Money Club!” website, which explains and searches listed investment trusts.

1.5.5 Improving investment education for defined contribution pension plans

From May 2018, firms that provide defined contribution pension plans have obligation to make efforts on continuous investment education of employers, and they must include information about the status of “continuous investment education” in their business reports. In response to this, fund management institutions of defined contribution plans started explaining the importance of continuous education to employers, and each institution continues to provide effective contents not only through traditional face-to-face seminars but also through e-learning and DVDs. In addition, as stated in the Report of the Expert Committee on Defined Contribution Pension Fund Management dated June 6, 2017, given that there are subscribers who can choose investment products by themselves and those who cannot, the Liaison Council of Management and Administration Institutions is working to enhance content that is easy to understand for subscribers at any level in terms of their interest in and knowledge of asset

³⁷ NISA, a nickname of Nippon (Japan) Individual Savings Account, is a tax exemption program for small investments. <https://www.fsa.go.jp/policy/nisa2/about/index.html>

formation. Subsequently, from the viewpoint of reducing the burden on employers, the business report for defined contribution pension plans was reviewed, and from March 2022, the description of continuing investment education in the business report was deleted. However, the Regional Offices of Health and Welfare checks implementation of continuous education by firms and encourage them to provide it.

In addition, in cooperation with the NISA Promotion and Liaison Council, the FSA, supported by the CCFSI, the Liaison Council of management institutions of defined contribution plans, and other related organizations, produced and published an educational video clip titled “For Your Future: Life, Money, and Asset Formation” mainly targeting people in the young working generation. These teaching materials are actively used in lectures at universities and various seminars. At the same time, related organizations are requested to use them at seminars at workplaces for NISA program and firm-operated defined contributions plans and/or iDeCo (individual defined contribution plans)³⁸.

1.5.6 Organizing seminars by industry groups and financial institutions

Seminars based on the Financial Literacy Map were actively held by relevant organizations promoting financial literacy. For example, the Japanese Bankers Association sent direct mail to junior and senior high schools, universities, boards of education, education centers, consumer affairs centers, and other on, calling for the dispatch of instructors and the use of teaching materials. In addition, the Japan Securities Dealers Association held seminars for working people by financial and securities instructors. The Japan Association for Financial Planners held life plan seminars and consultation meetings. In addition, the Investment Trusts Association held NISA and iDeCo seminars mainly for working generations. It also co-hosted the “J-REIT Debut Course for Beginners” with Japan Exchange Group. It also held seminars mainly for working women. It also held lectures on investment trusts and defined contribution pensions at the request of lecturers from Consumer Affairs Centers, labor unions, and universities. Japan Exchange Group held “Tokyo Stock Exchange Money Club!” on site sessions for executives and employees of listed companies, “JPX Academy” for individual investors, and held “+YOU” seminars nationwide for investment beginners. In addition, the Trust Companies Association of Japan sent instructors to social welfare councils and consumer centers, and the Japan Institute of Life Insurance sent instructors to lectures for consumers at the request of government agencies, such as consumer affairs centers nationwide and lectures for employees and officials, at the request of companies and government offices. The General Insurance Association of Japan also held an enlightenment seminar on non-life insurance for general consumers.

Furthermore, the Ministry of Education, Culture, Sports, Science and Technology has asked various private sector companies, organizations, universities, etc. to support (participate in) and register with the “Saturday Study Supporter Squad,”³⁹ and is promoting the consolidation of information on available educational programs and the implementation of such programs at schools and boards of education.

The Japanese Bankers Association, the Japan Securities Dealers Association, the Japan Institute of Life Insurance, the General Insurance Association of Japan, the Japan Association for Financial Planners, and the CCFSI of Tokyo Metropolitan Government, which are registered as “Saturday Study Supporter Squad,” are actively working on the utilization of this system and are calling for the use of the Saturday Study Supporter Squad system.

1.5.7 Raising awareness about fraud

Under the initiative of the FSA, a warning message stating “Be careful of fraudulent solicitation” is presented on the top page of the FSA website, and information such as “Names of Financial Instruments Business Operators without Registration” is also posted there, the revised “Financial Guide to Learn from the Basics” that summarizes actual fraudulent cases is published and sent to

³⁸ iDeCo stands for “individual-type Defined Contribution pension plan.” <https://www.ideco-koushiki.jp/english/>

³⁹ Despite the name “Saturday Study Support Group,” the program is not limited to Saturdays. It promotes educational activities by having companies, organizations, universities, etc. offer classes and facility tours on Saturdays as well as during summer and winter vacations, weekday classes, and after-school hours. For more information, see the following: <https://manabi-mirai.next.go.jp/program/index.html>

whoever asks for it, and leaflets on crypto assets for users are distributed and posted on the website. In addition, due to the frequent occurrence of cases of illegal money transfer related to Internet banking through phishing using e-mail and short messages (SMS and others) and malicious programs such as spyware, the FSA issued alerts through its website. In addition, the FSA and local Finance Bureaus hold symposiums and use the Government Public Relations Online to explain points to be aware of in order to avoid investment fraud. In addition, the Japan Securities Dealers Association, in cooperation with police, consumer administration, and banking associations, carried out “warning campaigns” on the streets in major cities in all 47 prefectures across Japan, distributing awareness-raising tools; posted videos on the Association’s website introducing the methods of fraud and raising awareness of financial products; and distributed flyers at seminars on preventing fraud damage related to financial products. In addition, the Consumer Affairs Agency posted on its website a warning to businesses that have engaged in conduct that may unjustly harm the interests of consumers in the purchase of corporate bonds and other financial instruments. In addition, the Japanese Bankers Association held lectures on financial crime, including specific types of fraud, such as the “It’s me, It’s me” scam utilizing deceptive communication techniques. It also commissioned Saitama Prefectural Koshigaya General Technical High School as a “School to Conduct Educational Activities to Prevent the Asking-for-Remittance Scam.” Through activities such as the home economics club at the school, the Association worked on educational activities to prevent the Asking-for-Remittance Scam, such as producing and distributing videos and educational goods, and participating in local events with exhibition of those materials that students themselves can use for practice in their local communities (subsequently, each year, it commissioned other high schools to do the same activities). In addition, the General Insurance Association of Japan posted warning on its website about companies that deceive by saying they provide free earthquake damage diagnosis under the banner of “official procedures for certification by the General Insurance Association.” The Association also created flyers to alert consumers about house repair companies (malicious repair companies) that solicit for home repair (renovation) services after natural disasters by saying “insurance money can be used.” The flyers were also disseminated on the Association’s website. The Japan Securities Dealers Association distributed leaflets on the damage caused by fraud on financial products, and with the cooperation of prefectural police departments, conducted campaigns to prevent fraud in all prefectures. The CCFSI published a research paper entitled “A Study on the Prevention of Consumer Fraud by Applying Behavioral Economics.” In doing so, it received cooperation from police officers and the National Consumer Affairs Center of Japan and provided information through the media.

1.5.8 Building system for provision of preventive and neutral advice

The FSA accepts questions and opinions, and provides consultations about its financial administration operation and financial services available in Japan at the “Financial Services User Consultation Office,” where consultants respond by phone and/or other means. The Japan Association for Financial Planners also promotes the dispatch of financial concierges (CFP is dispatched to hospitals and nursing homes to provide free consultation to patients and their families), develops asset allocation software that can be used for neutral advice and provides it to member FPs, dispatches “School Support Advisors” for vocational school students, and provides neutral advice through “Family Counseling Services” and “Living Improvement Services for Single-Parent Families” under the act on support for independent livelihood of people in need . The Association also holds a “Scholarship Advisor Training Program” to certify “Scholarship Advisors,” who are dispatched by the Japan Student Services Organization. In addition, the Consumer Affairs Agency has set a national common phone number of 188 as “Consumer Hotline” to provide information about local counseling services for consumers.

1.6 Promoting financial and investment literacy for stable asset formation

In order to encourage people who have even been little interested in investment to build up their assets, the FSA has introduced “Workplace Based NISA” in cooperation with the iDeCo from the viewpoint of creating an easy-access and familiar environment in which there are opportunities to learn and start investment. At the same time, the FSA is promoting to permeate workplace NISA in other ministries and agencies, local governments, and private companies. In addition, together with the NISA Promotion and Liaison Council, the Agency prepared “Tsumitate (Accumulate-type) NISA Quick

Understanding Guidebook” as an investment teaching material for beginners. Together with the NISA Promotion and Liaison Council, in cooperation with the CCFSI, the Council for Management and Administration, and other related organizations, FSA prepared and published a video clip teaching material mainly for members of the young working generation titled “For Your Future: Life, Money, and Asset Formation.” In addition, FSA jointly organized a symposium on the theme of stable asset formation with Regional Finance Bureaus. With the cooperation of related organizations, FSA also organized “Tsumitate (Accumulate-type) NISA Meetup” as a forum for exchanging opinions with individual investors and bloggers who are providing useful opinions and information for investment beginners. In addition, FSA, together with the NISA Promotion and Liaison Council, has decided to create the mascot character “Tsumitate Wanisa (Accumulate-type NISA promoting crocodile)” for the purpose of promoting NISA through public offering and popular voting, and disseminates information on asset formation through the Twitter account of “Tsumitate Wanisa.” The Japanese Bankers Association has developed mass advertisements mainly on the website to promote the necessity and method of asset formation to young people (young adults, university students, etc.). It has also developed and provided “Life Plan Study,” a free smartphone app that people can use to learn about life plans and asset formation through quizzes and stories. In addition, the Japan Association for Financial Planners has continued to provide “Money Quiz for Living” on its website and smartphone application. The quiz will help people learn about money for living. The CCFSI publishes articles on asset formation using iDeCo and Tsumitate (Accumulate-type) NISA as well as on the management of retirement funds for the elderly in its public relations magazine (“Kurashi Juku, Kinyu Juku,” which means “School of Living and Finance”) on the Committee’s website “Shiruporuto.”

1.7 Development of education leaders in relevant organizations

1.7.1 Utilizing former employees of financial institutions and strengthening staffing system of instructors

Under the leadership of the CCFSI, the Japanese Bankers Association, the Japan Securities Dealers Association, the Japan Institute of Life Insurance, the General Insurance Association of Japan, the Japan Association for Financial Planners, and the Japan Exchange Group, information about a roster of retired personnel who can provide financial literacy information from a neutral and fair standpoint is maintained; e.g., a contact point has been established for relevant private sector organizations to dispatch lecturers, and a mechanism has been established for actual dispatch of lecturers. For example, the Japanese Bankers Association uses officers and employees of the Japanese Bankers Association and Regional Bank Associations as instructors and holds training sessions for officers and employees of Regional Bank Associations (FSA lectures on topics such as FinTech and cashless transactions). In addition, the Japan Securities Dealers Association prepared “Examples of Financial and Economic Education Activities by Members (Case Studies)” in order to share examples of financial and economic education efforts by member securities companies and to further promote financial and economic education activities by each company. It also dispatched “financial and securities instructors,” who serve as instructors, to train employees of national and local governments, employees of private companies, and lecturers for local residents at public halls and other places. The General Insurance Association of Japan also provides training for retired instructors and dispatches them throughout the country.

1.7.2 Instructor development through mutual participation in internal training of relevant organizations

Under the initiative of the CCFSI, relevant organizations participate in training sessions and dispatch training instructors to each other, in order to develop leaders in financial and economic education more efficiently and effectively. For example, some of the courses offered by the CCFSI were opened to the public, and lecturers were received from other organizations. The Japanese Bankers Association asked the CCFSI of Tokyo to dispatch a financial public relations adviser as a lecturer at the training sessions.

1.8 Periodic performance measurement

Based on the Financial Literacy Map, the CCFSI revised the “Financial Capability Survey,” renamed

it “Financial Literacy Survey,” and conducts it every three years. The results were also widely explained to relevant organizations and presented at the Global Financial Literacy Excellence Center. In addition, the CCFSI has also conducted an ex ante/ex post survey at universities where financial literacy courses jointly taught by constituent organizations of the CCFSI are implemented. The Japan Securities Dealers Association also conducted a post-seminar questionnaire on changes in attitudes and behavior among seminar participants. The General Insurance Association of Japan conducted a survey on the level of understanding of the university-linked courses and compiled the results of measuring their effectiveness.

1.9 Other

1.9.1 Promotion of financial and economic education based on the Consumer Education Promotion Act

Financial and economic education is placed in the “Basic Policy” formulated by the government based on the “Consumer Education Promotion Act” under the leadership of the FSA, the Consumer Affairs Agency, and the Ministry of Education, Culture, Sports, Science and Technology. Financial and economic education is also included in the “Promotion Plans” formulated by all prefectures. In almost all of these plans, cooperation between consumer education and financial and economic education, and activities undertaken in cooperation with the CCFSI are clearly stated.

1.9.2 Understanding of actual situation of citizen group initiatives

Through interviews with Nippon Association for Consumer Specialists (NACS) and other organizations by the FSA, it was confirmed that consumer groups and other citizens’ groups mainly engage in consumer affairs consultations and dispatch of lecturers to local governments and companies.

In Japan, financial and economic education based on “Minimum Financial Literacy to be acquired” has been implemented through various settings and opportunities, such as schools and workplaces, mainly by constituent organizations of the Council for the Promotion of Financial and Economic Education. These facts can be interpreted as meaning that the financial and economic education environment in Japan is steadily advancing. According to the OECD (2015) Table1.1 “Status of national strategies (NS) in 2015,” Japan’s national strategy is ranked among the top 11 countries among the 64 countries in the table, i.e., there is an international perception recognizing that Japan’s promotion of financial and economic education is highly evaluated.

2. Policy Recommendations on Financial and Economic Education in Japan

As we have seen in Chapter 1, financial and economic education in Japan is making steady progress. However, the results of the survey indicate that there is still room for improvement in financial and economic education in Japan. For example, according to the “Financial Literacy Survey” conducted by the CCFSI in 2019, one of the questionnaires asked, “Did you have an opportunity to receive financial education, such as classes on life planning and financial management, at your school, university or workplace?” Only 9% of the respondents said they had had the opportunity. Looking at whether there is a gender difference in financial education, only 9.2% of men and 5.2% of women have received financial education. It appears that there is a slight gender difference in financial education. By age group, the age group with the most financial education was 18-29 years regardless of gender, with 14.2% of men and 10.7% of women having financial education. For age groups other than 18-29 years old, it was about 4-10%.

According to the “Public Opinion Survey on Household Financial Behaviors (Households with Two People or More)” conducted by the CCFSI in 2021, 9.2% of respondents answered that they were able to manage their households more comfortably financially than expected. 32.1% of respondents answered “I was able to manage my household as I expected.” 31.2% of respondents answered, “Household financial management was more difficult than I expected.” 27.5% of the respondents answered, “I have never thought about household financial management.” In addition, only 38.2% of the respondents have thought of life planning with their future in mind, and only 68% of those who have thought of life planning actually setup their financial plans. Based on these facts, it is considered

necessary to further promote financial and economic education. Therefore, I would like to propose the following three policies.

The first policy is “Shaping methods for evaluating national strategies.” Since 2005, the OECD has shown good practices in financial education (OECD (2005, 2008a, 2008b, 2009)). Since 2010, it has also focused on guidelines and good practices on evaluation of financial education programmes (OECD (2010a, 2010b, 2012, 2013, 2022)). In line with these guidelines, the United Kingdom, which has an advanced national strategy for financial literacy, has set numerical targets and specific strategies to achieve them. Specifically, in the United Kingdom, MAPs (Money & Pensions Service) has set up a national strategy for 2020/2030 called “The UK Strategy for Financial Wellbeing,”⁴⁰ which sets numerical targets for five agenda items. The first is Financial Foundations, which aims to increase the number of children and young people getting meaningful financial education by two million from the current 48% of children and young people by 2030. The second agenda is the Nation of Savers, which aims to increase the number of “working-age” people who save regularly by two million from 14.7 million adults (57%) by 2030. The third agenda is Credit Counts, which says that 9 million adults (17%) are using credit for food and bills, but that it aims to reduce that number by two million by 2030. The fourth agenda is Better Debt Advice, which aims to increase the number of adults accessing debt advice by two million from the current 1.7 million (32%) by 2030. The fifth agenda is Future Focus, which aims to increase the number of adults who understand enough to plan for their future lives from 23.6 million (45%) to 28.6 million by 2030. By presenting such specific indicators and their current value and target values, it can be expected that relevant organizations will act in unison toward clear goals.

What is the evaluation of the national strategy of financial education in Japan? In the above-mentioned Report of the Study Group on Financial and Economic Education, the significance and objectives of financial and economic education in Japan were described as “financial literacy as a living skill,” “financial literacy to promote the supply of sound and high-quality financial products,” and “financial literacy leading to the effective utilization of Japan’s household financial assets.” The achievement status is shown in Appendix 2-1-1 of the 15th Council for the Promotion of Financial and Economic Education (held on July 21, 2020), and the status of the three objectives is confirmed by observing the aggregate data on the “Public Opinion Survey on Households Financial Behavior” and the “Financial Literacy Survey” conducted by the CCFSI. Unfortunately, however, it does not indicate target levels of indicators. It is also necessary to set important indicators and show their current value and target values. For example, it may be advisable to set indicators on necessary knowledge, behavior and attitudes for each of the 15 items in the four fields of “Minimum Financial Literacy to be acquired.” The European Commission and OECD/INFE jointly developed a framework for enhancing the financial capacity of adults in the EU, the European Union/OECD (2022), and this may serve as a reference for setting indicators. If possible, it would be ideal to request outside experts to conduct monitoring and evaluation from an objective viewpoint. It should be noted that due to the current emergency situation of the pandemic, it is necessary to carefully consider whether or not to set the target year like the national strategy of the United Kingdom.

The second policy is to improve the way financial and economic information is provided. Regarding the system for providing financial and economic information, the first meeting of the Council for the Promotion of Financial and Economic Education (2013) stated that the CCFSI’s website “Shiruporuto” should be made known as the first access point on the Internet. It also aims to establish a system where users can easily and comprehensively access the websites of relevant authorities and organizations by linking them with “Shiruporuto.” In fact, “Shiruporuto” contains a lot of content useful for improving the well-being of household finances. For example, the “Life Planning Diagnosis” is a very convenient tool that allows you to know your future lifestyle by inputting information such as current income and expenditure, savings, and borrowings. The “Financial Learning Navigator” provides financial and economic information provided by various related ministries and organizations. It is very convenient because it can be narrowed down according to the target audience, field, type, difficulty, and whether it is free or not. In addition, various related

⁴⁰ <https://moneyandpensionsservice.org.uk/wp-content/uploads/2020/01/UK-Strategy-for-Financial-Wellbeing-2020-2030-Money-and-Pensions-Service.pdf>

ministries and agencies and organizations provide information on the “Consultation Desks,” which indicates that a detailed support system is in place.

However, the “Public Opinion Survey on Household Financial Behaviors (Households with Two or More Members)” conducted in 2021, asked “Do you know about the Central Council for Financial Services Information (nicknamed “Shiruporuto”; secretariat within the Bank of Japan’s Information Services Department), which provides financial knowledge and information from a neutral and fair standpoint?” In response to this question, 78 percent of the respondents answered, “This is the first time I heard about it.” In other words, it means that “Shiruporuto” is not known to most people. Currently, “Shiruporuto” is advertised on the FSA website with its logo and links, and disseminated through government PR Internet TV, but it may be necessary to consider other ways to disseminate information. For example, the Central Bank of Brazil publicized the new digital payment scheme called Pix by working with influencers, creating YouTube videos and posting to many social media outlets explaining the features of Pix. The “Shiruporuto” also needs to work with influencers in further dissemination activities, such as having them use the lifestyle design diagnoses, distribute videos on their use, and advertise through social media. Also, in order to make the site more user-friendly for general users, it may be necessary to improve the layout and design of the site, for example, by conducting a survey among users of “Shiruporuto.”

The third policy is more appropriate measurement of the effects of financial and economic education. According to the materials of the Council for the Promotion of Financial and Economic Education in 2017 and 2018, the effectiveness of financial and economic education was measured by conducting a survey at the institutions where university courses were offered. Specifically, students are asked to answer the same questions at the beginning of the first lecture and after the end of the 15th lecture to measure changes in their attitudes and behavioral judgments. The questions asked in the survey are about jobs the respondents want to get after graduation, effective ways to review their savings, interest calculation, their impression of stock and bond investment, their willingness to invest, how to use money in an era of low interest rates, the impression of life after retirement, their frequency of collection of economic and financial information, risks related to transactions on the Internet, travel insurance for overseas travel, their willingness to work after marriage, asset formation with a small amount of savings, social security system, their participation in the public pension system, and opportunities to learn about money management. According to the results of the survey conducted in the second half of fiscal 2017, as a result of taking financial and economic education, the percentage of respondents who answered “I collect information on economic and social conditions more frequently now,” “My level of understanding of compound interest calculation has improved,” and “With regard to my impression of stock and bond investment, I think I could invest myself if I studied a little bit.” increased. It seems that education has been effective to some extent.

However, there are several problems in measuring the effects of financial and economic education as described above. For example, university courses are elective courses, so they are taken only by the people who are willing to take them, and so there is a problem of selection bias. In addition, since the survey was conducted only immediately after receiving financial and economic education, there is a problem in that the long-term effects are unknown. Furthermore, although the results of the survey show some changes in the respondents’ attitudes, they do not analyze changes in their actual savings or asset selection behavior.

Therefore, I would like to propose the implementation of a randomized controlled trial (RCT) in order to more appropriately measure the effects of financial and economic education. Many RCTs have already been conducted outside Japan to analyze the impact of financial education on financial literacy and behavior (e.g., Ambuehl, Bernheim, and Lusardi (2014), Barcellos, Carvalho, Smith and Yoong (2015)). Based on the knowledge obtained from the previous research, I would like to propose to conduct an RCT in Japan as well to search for a financial education method suitable for people living in Japan.

In addition, when conducting an RCT, it is also important to fully consider who will receive financial and economic education (gender, age, academic background, income), whether the content is suitable for the target audience, the length of time for financial and economic education (e.g., within 90 minutes, 91 to 180 minutes, greater than 180 minutes), the method of financial and economic education (e.g., face-to-face or online, text only or with video), and the cost of financial and economic

education.

It is also important to conduct a follow-up survey of the same individuals to measure not only short-term effects but also long-term effects after conducting an RCT. This is because only a limited number of previous studies have analyzed whether the effects of financial education on financial literacy and financial behavior are sustained over the long term. For example, Kaiser, Lusardi, Menkhoff, and Urban (2021) attempted to draw conclusions about the effects of financial education by integrating the results of previous studies that conducted RCTs and analyzed the effects of financial education through meta-analysis. Of the 67 previous studies that analyzed the effects of financial education on financial behavior, only 10 analyzed the effects 18 months or more later. Also, of the 52 previous studies that analyzed the impact of financial education on financial knowledge, only one analyzed the impact 18 months or more later. Further examination of the long-term effects of financial education is needed.

Furthermore, in order to analyze the impact of financial and economic education on actual financial behavior, it would be useful to conduct an analysis using account information in cooperation with financial institutions and related companies. There is a problem that data such as the amount of assets held, which is answered in a survey as used in ordinary empirical analysis, lacks reliability. Therefore, if data on account balances in financial institutions can be directly used for analysis, the reliability of the analysis results will increase. In Japan as well, Kubota, Onishi, and Toyama (2021) analyzed data on deposit and withdrawal records of accounts of Mizuho Bank, while Kaneda, Kubota, and Tanaka (2021) analyzed data on income and expenditure and assets of Money Forward ME, after making it impossible to identify individuals. When analyzing the impact of financial and economic education on financial behavior, the accuracy of data on financial assets held is important. Therefore, I would like to propose partnerships with financial institutions and related companies so that account information can be used for analysis.

Finally, I would like to emphasize the importance of research on the environment and mechanisms that encourage people to receive financial and economic education. Since education up to high school is basically conducted based on the Courses of Study, students can receive financial and economic education at school up to high school in Japan. On the other hand, it is basically up to the people to choose whether or not to receive financial and economic education after high school graduation. Therefore, even if there is an opportunity to receive financial and economic education, it is limited to those who are interested in or need financial and economic education. It will be necessary to study mechanisms and develop an environment that will encourage all people to receive financial and economic education after graduation.

References

- Ambuehl, S., Bernheim, B. D., and Lusardi, A. (2014), "The Effect of Financial Education of the Quality of Decision Making," NBER Working Paper Series no. 20618 https://www.nber.org/system/files/working_papers/w20618/visions/w20618.rev1.pdf
- Babiarz, P. and Robb, C. A. (2014), "Financial Literacy and Emergency Saving," *Journal of Family and Economic Issues*, Vol. 35, pp. 40-50
- Barcellos, S. H., Carvalho, L. S., Smith, J. P., and Yoong, J. (2015), "Financial Education Interventions Targeting Immigrants and Children of Immigrants: Results from a Randomized Control Trial," *Journal of Consumer Affairs*, Vol. 50, Issue 2, pp. 263-285
- Behrman, J. R., Mitchell, O. S., Soo, C. K., and Bravo, D. (2012), "How Financial Literacy Affects Household Wealth Accumulation," *American Economic Review*, Volume 102, Number 3, pp. 300-304
- Bernheim, B. D. (1995), "Do Households Appreciate Their Financial Vulnerabilities? An Analysis of Actions, Perceptions, and Public Policy," In *Tax Policy and Economic Growth*, pp. 1-30, Washington, DC: American Council for Capital Formation
- Cochrane, J. H. (1991), "A Simple Test of Consumption Insurance," *Journal of Political Economy*, Volume 99, Number 5, pp. 957-976

- Deaton, A. (1992), "Understanding Consumption," New York: Oxford University Press.
- de Bassa Scheresberg, C. (2013), "Financial Literacy and Financial Behavior among Young Adults: Evidence and Implications," *Numeracy*, Volume 6, Issue 2, Article 5. DOI: <http://dx.doi.org/10.5038/1936-4660.6.2.5>
- European Union/OECD (2022), "Financial Competence Framework for Adults in the European Union" <https://www.oecd.org/finance/financial-competence-framework-for-adults-in-the-European-Union.htm>
- Fernandes, D., Lynch Jr., J. G., and Netemeyer, R. G. (2014), "Financial Literacy, Financial Education, and Downstream Financial Behaviors," *Management Science*, Vol. 60, No. 8, pp. 1861-1883
- Friedman, M. (1957), *A Theory of the Consumption Function*, Princeton and Oxford: Princeton University Press
- Gathergood, J., and Wylie, D. (2018), "Why are Some Households so Poorly Insured," *Journal of Economic Behavior and Organization*, Volume 156, pp. 1-12
- Horioka, C. Y., Murakami, A., and Kohara, M. (2002), "How Do the Japanese Cope with Risk?" *Seoul Journal of Economics*, Volume 15, Number 1, pp. 1-30
- Iwaisako, T. (2021), "Korona Kansen Sho (COVID-19) Kakudaika deno Chochiku / Kinyu Toshi Kodo to Kojin no Shukanteki Ninshiki no Yakuwari (Savings and Financial Investment Behavior and the Role of Individual Subjective Perception under the Spread of COVID-19)," *Keizai Kenkyu (Economic Research)*, Vol. 72, No. 4, pp. 363-379 (in Japanese)
- Iwamoto, Y., Kohara, M. and Saito, M. (2001), "Setai Koseiin no Choki Ryoyo ni kiin suru Keizai Kosei no Sonshitsu ni tsuite (Loss of Economic Welfare Caused by Long-Term Medical Treatment for Household Members: Economic Cost of People in Need of Long-Term Care and Bedridden People)" *Kikan Shakai Hoshu Kenkyu (Quarterly Social Security Research)*, Vol. 36, No. 4, pp. 547-560 (in Japanese)
- Kaiser, T., Lusardi, A., Menkhoff, L., and Urban, C. (2022), "Financial Education Affects Financial Knowledge and Downstream Behaviors," *Journal of Financial Economics*, Vol. 145, pp. 255-272
- Kaneda, M., Kubota, S., and Tanaka, S. (2021), "Who Spent their COVID-19 Stimulus Payment? Evidence from Personal Finance Software in Japan," *Japanese Economic Review*, Vol.72, pp. 409-437
- Kohara, M. (2001), "Consumption Insurance between Japanese Households," *Applied Economics*, Volume 33, pp. 791-800
- Kohara, M., Ohtake, F., and Saito, M. (2002), "A Test of the Full Insurance Hypothesis: The Case of Japan," *Journal of the Japanese and International Economies*, Volume 16, pp. 335-352
- Kubota, S., Onishi, K., and Toyama, Y. (2021), "Consumption Responses to COVID-19 Payments: Evidence from a Natural Experiment and Bank Account Data," *Journal of Economics Behavior and Organization*, Vol. 188, pp. 1-17
- Kureishi, W. (2014), "Higashinihon Daishinsai ni yoru Shotoku no Teika ya Shitsugyo, Tenshoku ga Chochiku ni Ataeru Eikyo (The Impact of Falling Income, Unemployment and Changing Jobs Caused by the Great East Japan Earthquake on Savings)," *IPSS Discussion Paper Series, 2014-J01*, National Institute of Population and Social Security Research (in Japanese)
- Lusardi, A. and Mitchell, O. S. (2008), "Planning and Financial Literacy: How Do Women Fare?" *American Economic Review: Papers & Proceedings*, 98:2, pp. 413-417
- Mace, B. J. (1991), "Full Insurance in the Presence of Aggregate Uncertainty," *Journal of Political Economy*, Volume 99, Number 5, pp. 928-956
- McCarthy, J. (1995) "Imperfect Insurance and Differing Propensities to Consume across Households," *Journal of Monetary Economics*, Volume 36, pp. 301-327
- Modigliani, F. and Brumberg, R. (1954), "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," In *Post Keynesian Economics*. Kenneth K. Kurihara ed., pp.388-436. New Brunswick: Rutgers University Press
- Modigliani, F. and Brumberg, R. (1980), "Utility Analysis and the Consumption Function: An Attempt at Integration," In *The Collected Papers of Franco Modigliani: The Life Cycle Hypothesis of Saving*, Vol. 2, Andrew Abel ed., pp.128-197. Cambridge and London: Cambridge University Press.

- OECD (2005), “Recommendation on Principles and Good Practices for Financial Education and Awareness” <https://www.oecd.org/finance/financial-education/35108560.pdf>
- OECD (2008a), “Recommendation on Good Practices for Financial Education Relating to Private Pensions”
<https://www.oecd.org/finance/private-pensions/40537843.pdf><https://www.oecd.org/finance/private-pensions/40537843.pdf>
- OECD (2008b), “OECD Recommendation on Good Practices for Enhanced Risk Awareness and Education on Insurance Issues” <https://www.oecd.org/finance/insurance/40537762.pdf>
- OECD (2009), “Recommendation of the Council on Good Practices on Financial Education and Awareness Relating to Credit” <https://www.oecd.org/finance/insurance/46193051.pdf>
- OECD (2010a), “Guide to Evaluating Financial Education Programmes”
<https://www.oecd.org/daf/fin/financial-education/EvaluatingFinEdEN.pdf>
- OECD (2010b), “Detailed Guide to Evaluating Financial Education Programmes”
<https://www.oecd.org/finance/financial-education/49994090.pdf>
- OECD (2012), “INFE High-Level Principles for the Evaluation of Financial Education Programmes”
<https://www.oecd.org/daf/fin/financial-education/49373959.pdf>
- OECD (2013), “Evaluating Financial Education Programmes: Survey, Evidence, Policy Instruments and Guidance”
https://www.oecd.org/daf/fin/financial-education/G20-Evaluating_Fin_Ed_Programmes_2013.pdf
- OECD (2015), “National Strategies for Financial Education: OECD/INFE Policy Handbook”
<https://www.oecd.org/daf/fin/financial-education/National-Strategies-Financial-Education-Policy-Handbook.pdf>
- OECD (2022), “Evaluation of National Strategies for Financial Literacy”
<https://www.oecd.org/finance/financial-education/evaluation-of-national-strategies-for-financial-literacy.htm>
- Ohtake, F. (2019), “Kodo Keizaigaku no Tsukaikata (How to use behavioral economics),” Iwanami Shoten (in Japanese)
- Sawada, Y. and Shimizutani, S. (2005), “Are People Insured Against Natural Disasters? Evidence from the Great Hanshin-Awaji (Kobe) Earthquake in 1995,” CIRJE Discussion Papers, CIRJE-F-314
- Sawada, Y. and Shimizutani, S. (2007), “Consumption Insurance Against Natural Disasters: Evidence from the Great Hanshin-Awaji (Kobe) Earthquake,” Applied Economics Letters, Vol. 14, pp. 303-306
- Sawada, Y. and Shimizutani, S. (2008), “How Do People Cope with Natural Disasters? Evidence from the Great Hanhin-Awaji (Kobe) Earthquake in 1995,” Journal of Money, Credit and Banking, Volume 40, Number2-3, pp. 463-488
- Sekita, S. (2011), “Financial Literacy and Retirement Planning in Japan,” Journal of Pension Economics and Finance, Volume 10, Issue 4, pp. 637-656
- Sekita, S. (2020), “Japanese Asset Formation and Financial Literacy,” Public Policy Review, Policy Research Institute, Ministry of Finance Japan, Volume 16, pp. 1-19
- van Rooij, M. C. J., Lusardi, A., and Alessie, R. J. M. (2011), “Financial Literacy and Retirement Planning in the Netherlands,” Journal of Economics Psychology, Volume 32, pp. 593-608
- van Rooij, M. C. J., Lusardi, A., and Alessie, R. J. M. (2012), “Financial Literacy, Retirement Planning and Household Wealth,” Economic Journal, Volume 122, Number 560, pp. 449-478
- Yamori, N. and Ueyama, H. (2021), “Koronaka no Koreisha no Kinyu Kodo eno Eikyo to Kinyu Riterashi—2019 nen Chosa to 2021 nen Chosa no Hikaku- (Impact of COVID-19 Pandemic on Financial Behavior of Elderly People and Financial Literacy - Comparison between the 2019 and 2021 Surveys),” RIEB Discussion Paper Series, 2021-J13, Kobe Daigaku. Keizai Keiei Kenkyujo (in Japanese)
- Zhang, Y., Jia, Q., and Chen, C. (2021), “Risk Attitude, Financial Literacy and Household Consumption: Evidence from Stock Market Crash in China,” Economic Modelling, Vol. 94, pp. 995-1006



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