NBER WORKING PAPER SERIES

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Working Paper 32838
http://www.nber.org/papers/w32838

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
August 2024, Revised May 2025

We are grateful to Stephen Jenkins, Yoko Niimi, and participants of the General Conference of the International Association for Research in Income and Wealth (IARIW) and the Lecture at the Institute of Economics, Academia Sinica, Taipei, Taiwan, for their valuable comments and discussions. This work was supported by JSPS (Japan Society for the Promotion of Science) KAKENHI Grant Numbers 15H01950, 18H00870, 20H01513, 20H05633, and 23H00831 to Horioka. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

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JEL No. D12, D14, D15, D64, E21, J14

ABSTRACT

We analyze the saving motives of European households using micro-data from the Household Finance and Consumption Survey, which is conducted by the European Central Bank. We find that the rank ordering of saving motives differs greatly depending on what criterion is used to rank them. We find that the precautionary motive is the most important saving motive of European households when the proportion of households saving for each motive is used as the criterion to rank them but that the retirement motive is the most important saving motive of European households if the quantitative importance of each motive is taken into account. Moreover, the generosity of social safety nets seems to affect the importance of individual saving motives, with saving for the retirement motive being less important in countries with generous public pension benefits and saving for the precautionary motive being less important in countries with generous public health systems.

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1. Introduction

Saving is one of the most important macroeconomic aggregates of any economy, and in many, if not most, economies, household saving comprises the largest component of national saving. Excellent estimates of household saving can typically be found in the national accounts as well as in household surveys, and a voluminous amount of research has been done on the determinants of the amount of household saving, but almost no data exist on *why* households save (i.e., the relative importance of the various motives for which households save). Some household surveys ask respondents why (i.e., for which motives) they are saving, but they hardly ever ask respondents about the *amount* of saving for each motive. This paper attempts to fill this gap in the literature by proposing an innovative methodology for imputing the amount of household saving for individual motives and then implementing this methodology using data from the Household Finance and Consumption Survey (HFCS), a large-scale household survey that is conducted periodically by the European Central Bank in a large number of European countries.

To summarize our main findings, we find that the rank ordering of saving motives differs greatly depending on what criterion is used to rank them. For example, we find that the precautionary motive is the most important saving motive of European households when the proportion of households saving for each motive is used as the criterion to rank them but that the retirement motive is the most important saving motive of European households if the quantitative importance of each motive is taken into account (its share of total household wealth is about 50%). Moreover, the generosity of social safety nets seems to affect the importance of individual saving motives, with saving for the retirement motive being less important in countries with generous public pension benefits and saving for the precautionary motive being less important in countries with generous public health systems. These findings suggest that the retirement and precautionary motives are the dominant motives for saving in Europe partly because social safety nets are not fully adequate. However, we also find that saving for the *inter vivos* transfers and bequest motives are of some importance in Europe, with their combined share comprising about 20% of total household wealth.

Our finding that saving motives that are consistent with the selfish life-cycle model (such as the retirement motive) as well as saving motives that are consistent with the altruism model (such as the *inter vivos* transfers and bequest motives) are important in Europe implies that the two models coexist in Europe (i.e., that both types of households coexist and/or that both models coexist within the same household in Europe), as is the case in other parts of the world. However, our finding that the retirement motive, which is the saving motive that most exemplifies the selfish life-cycle model, is of dominant importance in Europe strongly suggests that this model is far more applicable in Europe than is the altruism model. Moreover, our finding that saving for motives relating to intergenerational transfers, which are the saving motives that most exemplify the altruism model, accounts for only about one-fifth of total household wealth in Europe provides further corroboration for this conclusion.

The remainder of this paper is organized as follows: In section 2, we discuss theoretical considerations; in section 3, we survey the previous literature on saving motives; in section 4, we discuss the estimation model used in the econometric analysis; in section 5, we discuss the data source and sample selection; in section 6, we present descriptive statistics; in section 7, we present our estimation results concerning the determinants of the household wealth-to-income ratio; in section 8, we present our estimates of the composition of household wealth by motive; in section 9, we examine the impact of social safety nets; in section 10, we present our

estimation results concerning the determinants of the accumulation rate of financial assets; and in section 11, we present a summary, conclusions, and policy implications.

2. Theoretical Considerations

The simplest version of the selfish life-cycle model with no borrowing constraints and no uncertainty predicts that households should be saving primarily for living expenses during retirement and that they should not be saving to leave intergenerational transfers (i.e., bequests and *inter vivos* transfers) to their children. By contrast, if the altruism model applies and parents harbor intergenerational altruism towards their children, households should be saving not only for living expenses during retirement but also to leave intergenerational transfers to their children. Furthermore, if households face borrowing constraints, they should also be saving in preparation for the purchase of large-ticket items such as housing and consumer durables (because they know that they will not be able to debt-finance such purchases). Finally, if households face borrowing constraints as well as various sources of uncertainty, they should also be saving for precautionary purposes because they know that they will not be able to borrow when unexpected contingencies arise. Indeed, there is a voluminous literature on precautionary saving, with theoretical papers tending to find that precautionary saving should be important but empirical papers tending to find that it is not very important quantitatively (see, for example, the excellent survey in Jappelli and Pistaferri, 2017). Thus, assessing the relative importance of the various motives for which households save will shed light on which model of household behavior applies in the world and on which assumptions concerning the behavior of households and the environment facing households apply in the real world.

3. A Survey of the Previous Literature on Saving Motives

In this section, we survey previous studies that have attempted to assess the relative importance of various motives for saving. This literature is surveyed in detail in Horioka (2021), and as discussed by Horioka (2021), Gourinchas and Parker (2002), Schunk (2009), Birkeland (2013), and Chao et al. (2011) analyze saving motives in the United States, Germany, the Netherlands, and China, respectively, and Yao et al. (2011) conduct a U.S.-China comparison of saving motives.

In addition, some authors have analyzed saving for specific motives. For example, Ginama (1988), Ogawa (1991), Carroll and Samwick (1998), Lusardi (1998), Gourinchas and Parker (2001), and Ventura and Eisenhauer (2005) analyze precautionary saving, Horioka (1985) analyzes saving for one's children's educational expenses, Horioka (1987), Wei and Zhang (2011), Du and Wei (2013), Grossbard (2015), and Horioka and Terada-Hagiwara (2017) analyze saving for one's children's marriage expenses, Horioka (1988) analyzes saving for housing purchase, and Horioka and Okui (1999) analyze saving for retirement.

The findings of previous studies for Japan as well as for other countries generally support the selfish life-cycle model because they find that saving for motives that are consistent with the selfish life-cycle model such as the retirement motive are much more important than saving for motives that are consistent with the altruism model such as the bequest motive. However, previous studies also indicate that there are substantial differences among countries in the relatively importance of various saving motives, with motives relating to the selfish life-cycle

model being relatively more important in Japan (and perhaps also in China and the Netherlands) than they are in the United States and Germany (see Horioka, 2021, for more details).

The current paper is closest in spirit to Horioka and Watanabe (1997, 1998) and Horioka, et al. (1998, 2000), which conduct comprehensive analyses of saving motives in Japan and the United States using data from the Survey of the Financial Asset Choice of Households and the U.S.-Japan Comparison Survey of Saving, respectively. Both of these surveys were conducted by the former Institute of Posts and Telecommunications Policy of the former Ministry of Posts and Telecommunications of the Japanese Government, and both are unique in asking respondents to provide information on the amount of saving, dissaving, new borrowings, and loan repayments for each motive. Horioka and Watanabe (1997) and Horioka, et al. (2000) analyze these data and obtain broadly consistent results for both Japan and the United States. For example, Horioka and Watanabe (1997) find that, in Japan, the retirement motive ranks second (behind the precautionary motive) at 55.4% if the proportion of households saving for each motive is used as the criterion to rank them and ranks first (at 62.5%) if the share of saving for each motive in total (net) household saving is used as the criterion to rank them. Since the retirement motive is the saving motive that most exemplifies the selfish life-cycle model, these findings strongly suggest that the selfish life-cycle model is highly applicable in both Japan and the United States.

The saving motive that most exemplifies the altruism model is the bequest motive, and looking at the results for that motive, Horioka and Watanabe (1997) find that, in Japan, the bequest motive ranks 10th out of 12 (at 2.3%) if the proportion of households saving for each motive is used as the criterion to rank them and ranks 5th (at 3.2%) if the share of saving for each motive in (net) household saving is used as the criterion to rank them.

Horioka, et al. (1998, 2000) perform a similar calculation for the case of the United States and find, as they do for the case of Japan, that the retirement motive is much more important than the bequest motive although they do find that the retirement motive is considerably less important and that the bequest motive is somewhat more important than they are in Japan.

These results suggest that the selfish life-cycle model is much more applicable than the altruism model in both Japan and the United States. It should be noted that saving for one's children's education and marriage expenses involves

intergenerational transfers from parents to children so that they should be regarded as being consistent with the altruism model, but even if they are taken into account, the life-cycle model remains far more applicable than the altruism model in both countries (see Horioka, et al., 2000).

This paper contributes to the literature on motives for household saving in at least four ways. First, it develops and implements a new methodology for imputing the amount of saving for individual saving motives using information on the motives for which households are saving in conjunction with data on their stocks and flows of saving. Second, it sheds light on the impact of the generosity of social safety nets such as public pension and public health systems on the amount of saving for individual motives. Third, it is one of the first comprehensive analyses of saving motives in all of the major European countries, and the European countries are an

interesting case to study because, on average, they tend to have better developed social safety nets than the countries that the authors have analyzed in the past (i.e., Japan and the United States). Fourth, it compares the contribution of saving for individual motives to both flow and stock measures of household saving.

4. The Estimation Model

In this section, we explain the estimation model we use to estimate the quantitative importance of saving for individual motives.

Following Guiso et al. (1992), Carroll and Samwick (1995), Kazarosian (1997) and others, the dependent variable we use is the natural logarithm of the wealth-to-income ratio, defined as the ratio of household wealth to annual household income (which is presumably a good proxy for permanent income). We use financial net worth (holdings of financial assets minus liabilities) as our wealth measure in our baseline regressions, but we also try using total net worth (the sum of financial assets and real assets minus liabilities) and the accumulation rate of financial assets as a robustness check. We chose to use financial net worth in our baseline regressions because financial assets are much more liquid and much more divisible than real assets such as land and housing, meaning that they are much easier to draw down in order to realize specific motives.

The key explanatory variables we use are dummy variables for each of 11 saving motives: (1) the housing purchase motive (the wording in the survey is "to buy a home"), (2) the major purchases motive, (3) the business motive ("to start a business"), (4) the financial asset motive, (5) the precautionary motive ("for unexpected events"), (6) the retirement motive ("for old age needs"), (7) the debt repayment motive, (8) the travel/holidays motive, (9) the *inter vivos* transfers motive ("to support children and grandchildren"), (10) the bequest motive, and (11) the government subsidy motive ("to profit from government subsidies").[1] Since the dependent variable is in logarithmic form, the coefficient of the dummy variable for a given saving motive indicates the percentage amount by which the wealth-to-income ratio of a household saving for that motive exceeds the wealth-to-income ratio of an otherwise identical household not saving for that motive. Thus, the coefficients of the saving motive dummies can be regarded as measures of the quantitative importance of saving for each motive. In fact, we can calculate the share of saving for each motive in household wealth by multiplying the proportion of respondents saving for each motive by the coefficient of the dummy for that saving motive and scaling this product so that the products for all motives sum to 100, as we discuss in more detail in section 8.

[1] Note that respondents were asked about the motives for which they are currently saving, not about the motives for which they are currently holding financial net worth. The two will not necessarily coincide, but if respondents are rational, we would expect them to save for motives they plan to realize in the near future before turning to motives they plan to realize in the more distant future, and by the same token, we would expect their current holdings of financial net worth to be primarily for motives they plan to realize in the near future. Thus, we would expect the motives for which respondents are currently saving to largely coincide with the motives for which they plan to use their current holdings of financial net worth. Note, moreover, that this problem does not apply to the estimation results based on the accumulation of financial assets that we present in section 10.

Finally, we include a number of variables such as age, age squared, dummy variables pertaining to educational attainment, a dummy variable for being male, household size, dummy variables pertaining to marital status, and a dummy variable for homeownership as control variables and country fixed effects to control for unobserved heterogeneity. All socioeconomic variables pertain to the "household reference person," who is uniquely determined by applying sequentially the following steps: one of the partners in a de facto or registered marriage with dependent children, ditto without dependent children, lone parent with children, the person with the highest income, and finally the eldest person.

Thus, the estimation equation is as follows:

$$\ln(W/Y) = a + \mathbf{b} * \mathbf{MOTIVE} + \mathbf{c}^*\mathbf{X} + \varepsilon \quad (1)$$

where W = household wealth, Y = annual household income, MOTIVE is a vector of saving motives, X is a vector of control variables, and ε is an error term.

5. The Data Source and Sample Selection

In this paper, we use micro-data from the Household Finance and Consumption Survey (hereafter referred to as HFCS), a panel survey that has been conducted every few years since 2010 by the European Central Bank. The HFCS collects detailed information on the assets, liabilities, income, consumption, and saving motives of households, and hence it is ideally suited to an analysis of household saving motives.

The survey is based on 84,000 interviews conducted in 20 Euro area countries, as well as Poland and Hungary. Wave 1 (2010) of the survey was conducted in 2010-11, wave 2 (2014) in 2013-15, wave 3 (2017) in 2017, and wave 4 (2021) in 2020-22.[2]

We use primarily data from wave 3 (2017) of the survey for our analysis. The 20 countries included in our estimation sample are Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, Slovenia, and Spain. For comparison purposes, we also use data from wave 2 (2014) and wave 4 (2021). Wave 4 includes exactly the same 20 countries as in wave 3, whereas wave 2 includes the same sample of countries as in waves 3 and 4 except that Croatia and Lithuania are not included and Ireland and Malta are included, leaving the same number of countries (20). In the analysis of the accumulation rate of financial assets that we conduct in subsection 9.2, we are able to include only 18 countries (all of the aforementioned countries except Croatia, Ireland, Lithuania, and Malta) in the analysis because we needed data on the starting year as well as the ending year to calculate the accumulation rate.

Turning to sample selection, we dropped all observations with missing values for any of the variables used in our analysis. In addition, we dropped all observations for respondents who did not circle any saving motives for obvious reasons. Furthermore, we also dropped all observations for respondents who circled more than six saving motives because there are substantial differences among countries in the average number of saving motives circled,

[2] More detailed information on this survey can be found at
https://www.ecb.europa.eu/stats/ecb_surveys/hfcs/html/index.en.html

ranging from 1.59 in Finland to 4.02 in Lithuania, and in the maximum number of saving motives circled, ranging from 3 in Italy to 12 in Hungary, Lithuania, and Slovenia. The proportion of respondents who did not circle any saving motives was quite high (47.6%) because respondents who had not done any saving during the past year were not asked to answer the question about saving motives,[3] but the proportion of respondents who circled more than 6 saving motives was very small (only about 1.2%).

In addition, we dropped all observations for which the wealth-to-income ratio is more than 75 because these are primarily respondents with very low incomes, which causes their wealth-to-income ratios to be unusually high. In the results using the accumulation of financial assets as the dependent variable to be discussed in subsection 9.2, we dropped observations for which the ratio of the accumulation of financial assets to annual household income exceeds 5.5 (roughly the top 10% of the sample). Overall, our estimation sample consists of 27,681 observations, which is about one-third of the full sample.[4]

6. Descriptive Statistics

Table 1 shows the descriptive statistics for wave 3 (2017) for the full estimation sample for the variables used in the econometric analysis, and looking first at the results for saving motives, if saving motives are ranked by the proportion of respondents saving for each motive, the precautionary motive is by far the top saving motive, with 62.5% of respondents saving for this motive. The retirement motive ranks second, with 48.1% of respondents saving for this motive, followed by the travel/holidays motive in third place (26.1%), the *inter vivos* transfers motive in fourth place (24.9%), the major purchases motive in fifth place (18.6%), and the bequest motive in sixth place (12.7%). The five other motives are less important, with the proportion of respondents saving for them being less than 10% in all cases.

Table 1 here

We calculated the correlations among saving motives for all three waves for the full estimation sample and found that they were surprisingly low and no higher than 0.22 in any case (the correlation matrix for wave 3 (2017) is shown in the Data Appendix; the results for the other two waves are not shown due to space limitations but they are very similar to the results for wave 3). Thus, multicollinearity among the saving motive dummies is presumably not a problem, implying that we can measure the contribution of each motive to household wealth accumulation with considerable precision.

If we look at the results for individual countries (not shown), the precautionary motive is the top saving motive in virtually all countries in the sample. The ranking of the other saving motives differs greatly from country to country, but in most countries, the next three most important saving motives are the retirement motive, the *inter vivos* transfers motive, and the

[3] The fact that we could include only respondents who saved during the previous year (and therefore circled one or more saving motives) even though these respondents are a biased sample (for example, they have higher incomes, on average, than other respondents) is a defect of our analysis that should be noted.

[4] The most importance reason for the decline in the number of observations is that, as mentioned earlier, nearly half of respondents had to be dropped from the estimation sample because they did not save and therefore did not circle any saving motives.

travel/holidays motive, although the rank order of these motives differs greatly from country to country.

However, just because the proportion of households who are saving for a given motive is large does not necessarily mean that this motive is important quantitatively. It all depends on whether the amounts of saving being done for that motive are large or small. It is to this issue that we turn in our econometric analysis.

We will not discuss the descriptive statistics for the other variables in detail, but note that the mean of the financial net worth-to-income ratio is 1.72, which indicates that the average respondent's financial net worth is nearly twice his or her annual income.

7. Estimation Results concerning the Determinants of the Financial Net Worth-to-Income Ratio

The estimation results concerning the determinants of the financial net worth-to-income ratio for wave 3 (2017) for the full estimation sample are shown in Table 2, and as can be seen from this table, the coefficients of seven out of the 11 saving motive dummies are positive and statistically significant. The dummy of the financial asset motive has the largest coefficient (0.617). This coefficient implies that, *ceteris paribus*, respondents saving for the financial asset motive have financial net worth-to-income ratios that are a full 61.7% higher than the financial net worth-to-income ratios of respondents who are not saving for this motive. However, not much should be read into this result because the purchase of financial assets is not an ultimate use of one's saving. If we confine ourselves to saving motives that represent ultimate uses of one's assets, the saving motive with the largest coefficient is the retirement motive with a coefficient of 0.420. This coefficient implies that, *ceteris paribus*, respondents saving for retirement have financial net worth-to-income ratios that are a full 42.0% higher than the financial net worth-to-income ratios of respondents who are not saving for this motive. Looking at other motives of interest to us, the bequest and *inter vivos* transfer motives also have relatively large and statistically significant coefficients (0.355 and 0.149, respectively), which implies that, *ceteris paribus*, respondents saving for bequests and *inter vivos* transfers have financial net worth-to-income ratios that are a full 35.5% and 14.9% higher, respectively, than the financial net worth-to-income ratios of respondents who are not saving for these motives.

Table 2 here

If these results regarding the quantitative importance of each saving motive are compared to results in the previous section pertaining to the proportion of respondents saving for each motive, the results are similar in some cases but very different in other cases. For example, the retirement motive is very important with respect to both criteria, and the bequest and *inter vivos* transfers motives are of moderate importance with respect to both criteria. By contrast, the precautionary and travel/holidays motives rank much higher with respect to the proportion of respondents saving for each motive than they do with respect to the quantitative importance of each motive, whereas the business motive ranks much higher with respect to quantitative importance of each motive than it does with respect to the proportion of respondents saving for each motive. These results are not surprising since the amounts of assets needed for precautionary purposes and for travel/holidays are, in general, relatively small whereas the amount of assets needed to start one's own business is, in general, relatively large.

Turning to the estimation results for the other explanatory (control) variables, the coefficient of age is positive and statistically significant while the coefficient of age-squared is not statistically significant, indicating that, *ceteris paribus*, the financial net worth-to-income ratio increases monotonically with age, as one would expect. As for the impact of educational attainment, the financial net worth-to-income ratio tends to increase monotonically with educational attainment, which is also not surprising if we regard educational attainment as a proxy for lifetime income. The coefficient of the male dummy is not statistically significant, indicating that gender does not have a significant impact on the financial net worth-to-income ratio. Marital status does not have a statistically significant impact on the financial net worth-to-income ratio except that, *ceteris paribus*, single households have a higher financial net worth-to-income ratio than households in the default category (divorced households). The coefficient of household size is negative and statistically significant, indicating that, *ceteris paribus*, the financial net worth-to-income ratio decreases with household size, perhaps because consumption needs increase with household size, reducing the household's ability to accumulate wealth. The coefficient of the homeownership dummy is positive and statistically positive, indicating that, *ceteris paribus*, homeowners have higher financial net worth-to-income ratios. Finally, the coefficients of the country dummies (not reported in the tables) are all statistically significant, pointing to a large degree of heterogeneity across countries.

Overall, the estimation results are highly satisfactory, with most of the explanatory variables having coefficients that are statistically significant with the expected signs.

8. The Composition of Household Wealth by Saving Motive

In this section, we present estimates of the share of household wealth for each saving motive in financial net worth, which is the most comprehensive measure of the importance of each saving motive. This measure can be calculated as the proportion of households saving for each motive, taken from Table 1, multiplied by the share of financial net worth for each motive in total financial net worth for households saving for that motive, and normalized so that the shares for all motives sum to 100. The share of financial net worth for each motive in total financial net worth for households saving for that motive can be proxied for by the coefficients of the dummy variables for each saving motive in the financial net worth-to-income ratio regressions shown in Table 2 because these coefficients can be interpreted as the percentage change in the financial net worth-to-income ratio that is attributable to each motive.

Algebraically, the share of household saving for each saving motive in financial net worth can be calculated as follows:

$$S(i) = \frac{p(i)*b(i)}{\sum_{i=1}^{11} p(i)*b(i)} \qquad (2)$$

where S(i) = the share of saving for motive i in total financial net worth

p(i) = the proportion of households saving for saving motive i

b(i) = the coefficient of the dummy variable for saving motive i in the financial net worth-to-income ratio regressions, which can be regarded as a proxy for the share of financial net worth for saving motive i in total financial net worth for households saving for that motive[5]

The results for the full estimation sample for wave 3 (2017) are shown in Table 3, and as can be seen from this table, the retirement motive is by far the most important motive for saving with a share of more than one-half (50.3%). The bequest motive ranks second with a share of 11.2%, the *inter vivos* transfers motive ranks third with a share of 9.2%, and the precautionary motive ranks fourth with a share of 7.9%.[6] The remaining seven motives are less important with a share of less than 7.5%.

Table 3 here

In order to examine whether or not the aforementioned results are sensitive to what concept of wealth is used, we tried replicating our analysis for the same wave and the same sample for the case of total net worth instead of financial net worth. The results are shown in Table 4, and as can be seen from this table, the results are broadly consistent with the results for financial net worth. The retirement motive is again by far the most important motive for saving with an even higher share (56.7%). The *inter vivos* transfers motive ranks second with a share of 14.2%, the housing purchase motive ranks third with a share of 12.6%, and the bequest motive ranks fourth with a share of 12.1%. The remaining seven motives are less important with a share of less than 6%.

Table 4 here

In order to examine whether or not the aforementioned results depend on the position of the economy in the business cycle, we tried replicating our analysis for the full estimation sample for wave 2 (2014) and wave 4 (2021). The results concerning the composition of saving by motive for these two waves are shown in Tables 5 and 6, respectively. (The complete regression results for these variants as well as for all other variants that follow were omitted from the paper due to space limitations but are available from the authors upon request.) As can be seen from these tables, the results are broadly consistent with the results for wave 3 shown in Table 3, which suggests that the impact of the position of the economy in the business cycle is of limited importance. The retirement motive is by far the most important saving motive in all three waves, with its share exceeding 50% in all three waves, but its share is especially high in wave 4, in which it exceeds 80%. The *inter vivos* transfers and bequest motives are also relatively important in all three waves, with their shares being in the 9-12% and 7-11% range, respectively. The precautionary motive is somewhat less important in all three waves, with a share in the 5-8% range. Moreover, there is no evidence that saving for the precautionary and

[5] Note that this equation implies that the share of a saving motive will be negative if the coefficient of the dummy variable for that motive is negative (i.e., if respondents who are saving for that motive have a lower wealth-to-income ratio than an otherwise identical respondent who is not saving for that motive). A negative saving share seems implausible, but fortunately, there were only a few cases in which saving shares were estimated to be negative, and even when the saving share was estimated to be negative, the absolute magnitude of the share was almost always relatively small.

[6] Note, however, that the share of saving for the bequest motive may be downward biased because we use financial net worth (which excludes land, housing, and other real assets) as the dependent variable in our baseline regressions and because bequests are often left in the form of land and housing.

inter vivos transfers motives is higher during recessionary periods, contrary to what one might expect.

Tables 5 and 6 here

Furthermore, since it seems plausible that saving motives will vary over the course of the life cycle, we examined how the estimation results vary by age by breaking the sample down into three age groups (44 or younger, 45-64, and 65 or older), which represent younger workers, older workers, and retirees, respectively, and doing the estimations separately for these age groups. The estimation results broken down by age for waves 2, 3, and 4 are shown in Tables 7-9, respectively, and as can be seen from these tables, the shares of some saving motives show a clear pattern by age whereas the shares of other saving motives do not show any clear pattern by age. For example, the shares of the retirement and bequest motives increase steadily with age (except in the case of the retirement motive in wave 4). These findings are not surprising since these motives become more relevant in old age, and moreover, the results for the retirement motive are consistent with the findings of Horioka and Watanabe, 1997, and Gourinchas and Parker, 2002. By contrast, the shares of the housing purchase and major purchase motives decrease with age, which is also not surprising since these motives tend to be realized relatively early in the life cycle. Most of the other saving motives show no clear trends over time and/or have relatively low shares at all ages.

Tables 7-9 here

Finally, since it seems plausible that saving motives will vary by the level of wealth holdings (financial net worth), we broke the sample down into two wealth classes (those above the median and those below the median), and did the estimations separately for each wealth class. The estimation results for the below-median wealth class are shown in Table 10, and as can be seen from this table, the shares of the retirement, bequest, and *inter vivos* transfers motives are lower than they are in the full estimation sample whereas the shares of the precautionary and major purchases motives are larger than they are in the full estimation sample, but the retirement motive is still the most important motive for saving. These results are as expected because we would expect less wealthy individuals to be less able to afford to leave bequests and *inter vivos* transfers to their children and because we would expect less wealthy individuals to be more likely to have to save in advance of major purchases.

Table 10 here

Since the selfish life-cycle model assumes that the primary motive for saving is for retirement, our consistent finding that the share of saving for the retirement motive accounts for more than half of total saving (except in the case of less wealthy individuals) implies that the selfish life-cycle model is highly applicable in the case of Europe.

Conversely, since it is primarily the saving motives relating to intergenerational transfers (the *inter vivos* transfers and bequest motives) that are consistent with the altruism model, our finding that the combined share of saving for these motives accounts for just over one-fifth (20.5%) of total financial net worth in the full estimation sample and that it is comparable in all subsamples except for older individuals (for whom this share is close to 30% in some cases) implies that the altruism model is applicable to some extent but not of dominant importance in the case of Europe. Moreover, it is possible that a part of these intergenerational transfers is motivated by selfish or strategic considerations à la Bernheim, Shleifer, and Summers (1985) (for example, by a desire to induce one's children to provide care and attention during old age)

and that the share of saving that is consistent with the altruism model is even lower than suggested by the aforementioned figure. Thus, although the selfish life-cycle model and the altruism model appear to coexist in the case of Europe, the selfish life-cycle model seems to be far more applicable than the altruism model.[7]

9. The Impact of Social Safety Nets

In this section, we explore the impact of social safety nets such as public pension systems and public health systems on saving for individual motives.

The Organisation for Economic Cooperation and Development (OECD) calculates gross pension replacement rates (as a proportion of pre-retirement earnings) for all OECD member countries and publishes them in its biannual publication *Pensions at a Glance*, and as these data show, pension replacement rates were above the OECD mean in Austria, Cyprus, Finland, France, Greece, Hungary, Italy, Luxembourg, Netherlands, Portugal, Slovakia, and Spain. We re-did our estimations for this subsample of countries with relatively generous pension benefits, and the estimation results are shown in Table 11. We would expect saving for the retirement motive to be less important in countries with generous public pension benefits, but this table shows that the proportion of respondents saving for the retirement motive is only slightly lower in the high pension subsample of countries than it is in the full estimation sample (47.2% vs. 48.1%). However, the coefficient of the retirement dummy, which measures the quantitative importance of saving for the retirement motive, is much lower in the high pension subsample of countries than it is in the full estimation sample (0.355 vs. 0.420), as one would expect. As a result, the share of saving for the retirement motive is more than 10 percentage points lower in the high pension subsample than it is in the full estimation sample (39.3% vs. 50.3%). Thus, our results strongly suggest that households in high-pension countries are doing much less saving for the retirement motive than households in low-pension countries, as one would expect.

Table 11 here

The detailed results will not be discussed due to space limitations, but we conducted a parallel analysis for countries with generous public health systems (defined as countries whose public spending for inpatient and outpatient medical care as a percentage of total health spending is higher than the median) and obtained similar findings. In particular, we found that, for respondents from countries with relatively generous public health systems, the proportion of respondents saving for the precautionary motive is somewhat smaller than that for the full estimation sample and that the quantitative importance of the precautionary motive is far less than for the full estimation sample, as a result of which the share of saving for the precautionary motive in household wealth is much smaller than in the full estimation sample. This finding is as expected since saving for the precautionary motive should be less important in countries with more generous health systems and conversely.

[7] Saving for one children's education expenses and marriage expenses also involve intergenerational transfers, and they were found to be of some importance in Japan and (to a lesser extent) the United States (see Horioka and Watanabe, 1997, and Horioka, et al., 2000), but the survey we use for the current paper does not ask explicitly about saving for these motives and it is presumably included in saving for the *inter vivos* transfers motive.

10. Results based on the Accumulation Rate of Financial Assets

Whereas in our baseline econometric analysis in section 8, we analyzed the determinants of the wealth-to-income ratio, which is a stock measure of saving, in this section, we conduct an econometric analysis of the determinants of the accumulation rate of financial assets (the change in holdings of financial assets divided by initial holdings of financial assets, which is a flow measure of saving) during the three-year period between wave 2 (2014) and wave 3 (2017).[8] Note that the change in holdings of financial assets includes out-of-pocket saving as well as changes in asset values (i.e., capital gains and losses) because of the way it was calculated. When calculating the change in holdings of financial assets, we convert nominal figures to real terms using the consumer price index. We include the same explanatory variables we included in our econometric analysis of the determinants of the wealth-to-income ratio in section 7.

The estimation results for the coefficients of the saving motive dummies are shown in column (2) of Table 12, and these coefficients can be interpreted as the amount by which the accumulation rate of financial assets of those saving for a given motive exceeds that of those not saving for that motive, *ceteris paribus*. The dummy for the housing purchase motive has the largest coefficient (0.173), followed by the coefficients of the dummies for the retirement motive (0.106), the housing purchase motive (0.089), the travel/holidays motive (0.085), and the precautionary motive (0.080).

Table 12 here

Turning to column (4) of Table 12, which shows the share of the accumulation of financial assets for each motive in the total accumulation of financial assets, the retirement and precautionary motives have the highest shares (31.5% and 30.4%, respectively), followed by the travel/holidays motive (14.3%) and the *inter vivos* transfers motive (10.3%). As in the case of the baseline regressions based on a stock measure of saving, the retirement motive is the dominant motive for saving, but its share is much lower (31.5% vs. 50.3%). Moreover, the share of the bequest motive is also much lower (0.8% vs. 11.2%). By contrast, the precautionary and travel/holidays motives have much higher shares (30.4% vs. 7.9% and 14.3% vs. 3.3%, respectively) than in the case of the baseline regressions based on a stock measure of saving.[9] Finally, some motives such as the *inter vivos* transfers motive have roughly the same shares regardless of which measure of saving is used (10.3% vs. 9.2%).

It is not surprising that the ranking of saving motives varies greatly between stock and flow measures of saving, with saving motives with longer time horizons such as the retirement and bequest motives being more important in the case of a stock measure of saving and with saving motives with shorter time horizons such as the precautionary and travel/holidays motives being more important in the case of a flow measure of saving. The reason for this is that the wealth

[8] Although the actual time between two consecutive interviews was variable across households in different countries, we converted the accumulation rate of net financial wealth for each household to a three-year rate to achieve comparability.

[9] Note, moreover, that the coefficient of the precautionary motive, which can be construed as a measure of the quantitative importance of this motive, is statistically significant when a flow measure of saving is used even though it was not statistically significant when a stock measure of saving was used.

targets for saving motives with shorter time horizons need to be attained within a shorter period of time, meaning that more saving needs to be done per year for a given wealth target.

11. Summary, Conclusions, and Policy Implications

In this paper, we analyzed the saving motives of European households using micro-data from the Household Finance and Consumption Survey (HFCS), a large-scale household survey that is conducted periodically by the European Central Bank.

To summarize our main findings, we found that the rank ordering of saving motives differs greatly depending on what criterion is used to rank them. For example, we found that the precautionary motive is the most important saving motive of European households when the proportion of households saving for each motive is used as the criterion to rank them but that the retirement motive is the most important saving motive of European households if the quantitative importance of each motive is taken into account (its share of total household wealth is about 50%). Moreover, the generosity of social safety nets seems to affect the importance of individual saving motives, with saving for the retirement motive being less important in countries with generous public pension benefits and saving for the precautionary motive being less important in countries with generous public health systems. These findings suggest that the retirement and precautionary motives are among the dominant motives for saving in Europe partly because social safety nets are not fully adequate. However, we also found that saving for the *inter vivos* transfers and bequest motives are of some importance in Europe, with their combined share comprising about 20% of total household wealth.

Our finding that saving motives that are consistent with the selfish life-cycle model (such as the retirement motive) as well as saving motives that are consistent with the altruism model (such as the *inter vivos* transfers and bequest motives) are important in Europe implies that the two models coexist in Europe (i.e., that both types of households coexist and/or that both models coexist within the same household in Europe), as is the case in other parts of the world. However, our finding that the retirement motive, which is the saving motive that most exemplifies the selfish life-cycle model, is of dominant importance in Europe strongly suggests that this model is far more applicable in Europe than is the altruism model. Moreover, our finding that saving for motives relating to intergenerational transfers, which are the saving motives that most exemplify the altruism model, accounts for only about one-fifth of total household wealth in Europe provides further corroboration for this conclusion.

If our findings for Europe that are presented in this paper are compared with the findings for other countries, it can be seen that our findings are broadly consistent with the findings for Japan and the United States that are presented in Horioka and Watanabe (1997, 1998) and Horioka et al. (1998, 2000), with saving for the retirement motive being of dominant importance and precautionary saving and saving for motives relating to intergenerational transfers also being of at least some importance. However, it appears that precautionary saving is less important in Europe than it is in Japan and the United States whereas saving for motives relating to intergenerational transfers is more important. All in all, however, it appears that the motives for which people save and the models of household behavior that apply are broadly consistent in all developed countries.

Turning finally to the policy implications of our findings, our finding that the retirement motive is of dominant importance in Europe and our finding that the generosity of public pension

benefits affects the amount of saving for the retirement motive suggest that policymakers should take account of the impact of public pension benefits for the elderly (and also of other social safety nets for the elderly such as public health insurance and public long-term care insurance) on household saving when designing such programs. Similarly, our finding that the precautionary motive is of some importance in Europe and our finding that the generosity of public health systems affects the importance of precautionary saving suggest that policymakers should take account of the impact of public health systems on household saving when designing such systems.

Second, our finding that the bequest and *inter vivos* transfers motives are of some importance in Europe suggests that wealth disparities are, at least to some extent, passed on from generation to generation via bequests and *inter vivos* transfers and that it might be desirable for governments to introduce and/or to raise estate, gift, and/or wealth taxes as a way of alleviating this tendency (see, for example, Niimi and Horioka, 2018).

Acknowledgements

We are grateful to Anton R. Braun, Erbiao Dai, Alvaro Dominguez, Tatsuo Hatta, Masayoshi Honma, Yoko Ibuka, Daisuke Ikeda, Stephen Jenkins, Shinya Kajitani, Kamhon Kan, Yi-Chun Ko, Jong-Wha Lee, Colin McKenzie, Yoko Niimi, Xue Peng, Shizuka Sekita, Saki Sugano, Midori Wakabayashi, Donghoon Yoo, Michio Yuda, Mirka Zvedelinova, an anonymous referee, the handling editor Suman Seth, and participants of the Annual Meeting of the Society of Economics of the Household (SEHO), the General Conference of the International Association for Research in Income and Wealth (IARIW), the Fondation France Japon-Banque de France Workshop on the Economics of Ageing, the Workshop on Family Economics held at Tokyo Metropolitan University, and seminars at the Institute of Economics, Academia Sinica, Taipei, Taiwan, and the Asian Growth Research Institute, Kitakyushu, Japan, for their valuable comments and discussions. This work was supported by JSPS (Japan Society for the Promotion of Science) KAKENHI Grant Numbers 18H00870, 20H05633, 23K20151, and 23K25528 to Horioka.

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Appendix Table here

Table 1: Descriptive Statistics (Full Estimation Sample) (Wave 3, 2017)					
Variable	Mean	Std. Dev.	Median	Minimum	Maximum
Financial Wealth/Income	1.722	4.101	0.566	0	72.827
Log(Financial Net Worth/Income)	-0.712	1.765	-0.569	-25.637	4.288
Age	59.379	15.693	61	16	85
Age^2/100	37.721	17.964	37.21	2.56	72.25
Primary or no formal education	0.160	0.367	0	0	1
Lower secondary education	0.133	0.339	0	0	1
Upper secondary or first-stage tertiary	0.354	0.478	0	0	1
Second-stage tertiary or over	0.353	0.478	0	0	1
Male	0.627	0.484	1	0	1
Single	0.181	0.385	0	0	1
Married	0.577	0.494	1	0	1
Widowed	0.140	0.347	0	0	1
Household size	2.229	1.148	2	1	11
Homeownership	0.726	0.446	1	0	1
Saving for housing purchase	0.097	0.296	0	0	1
Saving for other major purchases	0.186	0.389	0	0	1
Saving to start a business	0.018	0.132	0	0	1
Saving to buy financial assets	0.048	0.214	0	0	1
Saving for precautionary purposes	0.625	0.484	1	0	1
Saving for repaying debts	0.042	0.201	0	0	1
Saving for retirement	0.481	0.500	0	0	1
Saving for travel/holidays	0.261	0.439	0	0	1
Saving for inter vivos transfers	0.249	0.433	0	0	1
Saving for bequests	0.127	0.332	0	0	1
Saving to profit from government subsidies	0.020	0.140	0	0	1
Note: This table is based on the full estimation sample of 27,681 observations.					
Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.					

Table 2: The Determinants of the Financial Net Worth-to-Income Ratio (Full Estimation Sample) (Wave 3, 2017)					
Log(Financial Net Worth/Income)	Coeff.	Std. Error	t-value	p-value	
Age	0.026	0.009	2.92	0.009	***
Age^2/100	-0.009	0.009	-1.01	0.327	
Lower secondary education	0.145	0.109	1.34	0.197	
Upper secondary or first-stage tertiary	0.419	0.080	5.23	0.000	***
Second-stage tertiary or over	0.751	0.118	6.36	0.000	***
Male	0.047	0.065	0.73	0.474	
Single	0.315	0.155	2.03	0.057	*
Married	0.164	0.158	1.04	0.313	
Widowed	0.170	0.138	1.24	0.232	
Household size	-0.150	0.016	-9.60	0.000	***
Homeownership	0.603	0.036	16.55	0.000	***
Saving for housing purchase	0.210	0.043	4.93	0.000	***
Saving for other major purchases	0.114	0.037	3.11	0.006	***
Saving to start a business	0.260	0.172	1.51	0.148	
Saving for buying financial assets	0.617	0.078	7.91	0.000	***
Saving for precautionary purposes	0.051	0.057	0.89	0.383	
Saving for repaying debts	-0.252	0.167	-1.51	0.147	
Saving for retirement	0.420	0.063	6.63	0.000	***
Saving for travel/holidays	0.050	0.030	1.70	0.105	
Saving for inter vivos transfers	0.149	0.056	2.66	0.016	**
Saving for bequests	0.355	0.044	8.01	0.000	***
Saving to benefit from government subsidies	0.366	0.041	8.95	0.000	***
Constant	-3.228	0.189	-17.11	0.000	***
Mean of dependent variable		-0.712			
R-squared		0.178			
Number of observations		27681			
Notes: *Significant at 10% level, **significant at 5% level, ***significant at 1% level. Country fixed effects were included. Standard errors were clustered at the country level.					
Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.					

Table 3: The Composition of Financial Net Worth by Saving Motive (Full Estimation Sample) (Wave 3, 2017)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	9.7	0.210	2.04	5.07
Saving for other major purchases	18.6	0.114	2.12	5.28
Saving to start a business	1.8	0.260	0.47	1.16
Saving to buy financial assets	4.8	0.617	2.96	7.37
Saving for precautionary purposes	62.5	0.051	3.19	7.93
Saving for repaying debts	4.2	-0.252	-1.06	-2.63
Saving for retirement	48.1	0.420	20.20	50.29
Saving for travel/holidays	26.1	0.050	1.31	3.25
Saving for inter vivos transfers	24.9	0.149	3.71	9.24
Saving for bequests	12.7	0.355	4.51	11.22
Saving to profit from government subsidies	2.0	0.366	0.73	1.82
Sum			40.17	100.00

Notes: The figures in column 1 were taken from Table 1, and the figures in column 2 were taken from Table 2. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 4: The Composition of Total Net Worth by Saving Motive (Full Estimation Sample) (Wave 3, 2017)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	10.1	0.200	2.020	12.61
Saving for other major purchases	18.4	0.012	0.221	1.38
Saving to start a business	1.8	0.526	0.947	5.91
Saving to buy financial assets	4.3	0.188	0.808	5.04
Saving for precautionary purposes	62.0	0.014	0.868	5.42
Saving for repaying debts	7.8	-0.291	-2.270	-14.17
Saving for retirement	43.5	0.209	9.092	56.74
Saving for travel/holidays	26.1	-0.006	-0.157	-0.98
Saving for inter vivos transfers	25.3	0.090	2.277	14.21
Saving for bequests	10.8	0.180	1.944	12.13
Saving to profit from government subsidies	1.8	0.152	0.274	1.71
Sum			16.024	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 5: The Composition of Financial Net Worth by Saving Motive (Full Estimation Sample) (Wave 2, 2014)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	9.6	0.358	3.44	8.83
Saving for other major purchases	14.9	0.159	2.37	6.09
Saving to start a business	1.6	0.194	0.31	0.80
Saving to buy financial assets	3.1	0.686	2.13	5.47
Saving for precautionary purposes	60.6	0.042	2.55	6.54
Saving for repaying debts	4.2	-0.425	-1.79	-4.59
Saving for retirement	45.2	0.451	20.39	52.39
Saving for travel/holidays	21.4	0.06	1.28	3.30
Saving for inter vivos transfers	24.4	0.193	4.71	12.10
Saving for bequests	10.1	0.291	2.94	7.55
Saving to profit from government subsidies	1.9	0.309	0.59	1.51
Sum			38.91	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 6: The Composition of Financial Net Worth by Saving Motive (Full Estimation Sample) (Wave 4, 2021)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	9.1	0.272	2.48	6.13
Saving for other major purchases	20.6	0.058	1.19	2.96
Saving to start a business	1.7	0.172	0.29	0.72
Saving to buy financial assets	7.2	0.688	4.95	12.27
Saving for precautionary purposes	60.1	0.033	1.98	4.91
Saving for repaying debts	3.4	-0.274	-0.93	-2.31
Saving for retirement	57.5	0.564	32.43	80.35
Saving for travel/holidays	26.7	-0.398	-10.63	-26.33
Saving for inter vivos transfers	27.2	0.185	5.03	12.47
Saving for bequests	9.1	0.311	2.83	7.01
Saving to profit from government subsidies	1.8	0.405	0.73	1.81
Sum			40.36	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 7: The Composition of Financial Net Worth by Saving Motive and Age Group (Wave 2, 2014)

	Share of financial net worth for each motive (percent)			
Saving motive	Full sample	44 or younger	45-64	65 or older
Saving for housing purchase	8.83	25.70	5.63	0.73
Saving for other major purchases	6.09	8.48	9.41	2.61
Saving to start a business	0.80	0.17	1.32	1.11
Saving to buy financial assets	5.47	5.27	4.73	6.23
Saving for precautionary purposes	6.54	23.74	6.71	-10.04
Saving for repaying debts	-4.59	-4.90	-5.52	-2.50
Saving for retirement	52.39	24.28	61.34	65.07
Saving for travel/holidays	3.30	0.40	3.66	6.03
Saving for inter vivos transfers	12.10	15.50	8.20	12.08
Saving for bequests	7.55	-1.15	3.59	17.69
Saving to profit from government subsidies	1.51	2.53	0.94	0.99
Sum	100.00	100.00	100.00	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 8: The Composition of Net Financial Worth by Saving Motive and Age Group (Wave 3, 2017)

	Share of financial net worth for each motive (percent)			
Saving motive	Full sample	44 or younger	45-64	65 or older
Saving for housing purchase	5.07	31.37	0.63	0.71
Saving for other major purchases	5.28	13.44	5.96	1.38
Saving to start a business	1.16	-0.13	3.07	-0.14
Saving to buy financial assets	7.37	12.62	7.13	6.76
Saving for precautionary purposes	7.93	5.09	1.28	14.07
Saving for repaying debts	-2.63	-3.68	-3.89	-0.45
Saving for retirement	50.29	35.28	50.19	54.66
Saving for travel/holidays	3.25	-2.88	7.08	2.06
Saving for inter vivos transfers	9.24	-7.01	19.63	6.05
Saving for bequests	11.22	9.99	7.04	14.75
Saving to profit from government subsidies	1.82	5.91	1.88	0.14
Sum	100.00	100.00	100.00	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 9: The Composition of Financial Net Worth by Saving Motive and Age Group (Wave 4, 2021)

	Share of financial net worth for each motive (percent)			
Saving motive	Full sample	44 or younger	45-64	65 or older
Saving for housing purchase	6.13	15.69	5.06	4.53
Saving for other major purchases	2.96	11.75	1.65	-0.70
Saving to start a business	0.72	2.39	0.38	0.76
Saving to buy financial assets	12.27	22.10	10.99	9.45
Saving for precautionary purposes	4.91	0.82	13.28	0.74
Saving for repaying debts	-2.31	0.26	-4.36	-1.58
Saving for retirement	80.35	83.56	83.59	69.12
Saving for travel/holidays	-26.33	-52.44	-23.88	-11.69
Saving for inter vivos transfers	12.47	13.05	8.16	14.21
Saving for bequests	7.01	0.21	3.13	14.55
Saving to profit from government subsidies	1.81	2.62	2.00	0.60
Sum	100.00	100.00	100.00	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 10: The Composition of Financial Net Worth by Saving Motive (Sample of Those with Less Than Median Financial Net Worth) (Wave 3, 2017)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	10.2	0.080	0.82	3.13
Saving for other major purchases	16.1	0.160	2.58	9.88
Saving to start a business	1.8	0.234	0.42	1.62
Saving to buy financial assets	1.9	0.141	0.27	1.03
Saving for precautionary purposes	64.9	0.132	8.57	32.86
Saving for repaying debts	4.6	0.035	0.16	0.62
Saving for retirement	44.6	0.215	9.59	36.78
Saving for travel/holidays	23.3	0.005	0.12	0.45
Saving for inter vivos transfers	23.2	0.085	1.97	7.56
Saving for bequests	10.5	0.111	1.17	4.47
Saving to profit from government subsidies	1.4	0.301	0.42	1.62
Sum			26.07	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 11: The Composition of Financial Net Worth by Saving Motive (High-Pension Countries) (Wave 3, 2017)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	9.0	0.089	0.801	5.40
Saving for other major purchases	17.9	0.043	0.770	5.19
Saving to start a business	1.6	-0.035	-0.056	-0.38
Saving to buy financial assets	5.3	0.173	0.917	6.19
Saving for precautionary purposes	56.3	0.080	4.504	30.39
Saving for repaying debts	7.7	-0.067	-0.516	-3.48
Saving for retirement	44.0	0.106	4.664	31.47
Saving for travel/holidays	25.0	0.085	2.125	14.34
Saving for inter vivos transfers	23.9	0.064	1.530	10.32
Saving for bequests	11.3	0.011	0.124	0.84
Saving to profit from government subsidies	1.2	-0.035	-0.042	-0.28
Sum			14.821	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3, while the figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Table 12: The Composition of the Accumulation of Financial Assets by Saving Motive (Full Estimation Sample) (Wave 3, 2017)

Saving motive	Proportion of respondents saving for each motive (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in financial net worth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of financial net worth for each motive (percent)
Saving for housing purchase	8.8	0.228	2.006	4.71
Saving for other major purchases	16.0	0.153	2.448	5.74
Saving to start a business	1.6	0.340	0.544	1.28
Saving to buy financial assets	4.3	0.632	2.718	6.37
Saving for precautionary purposes	62.0	0.104	6.448	15.13
Saving for repaying debts	4.0	-0.049	-0.196	-0.46
Saving for retirement	47.2	0.355	16.756	39.31
Saving for travel/holidays	23.3	0.079	1.841	4.32
Saving for inter vivos transfers	23.8	0.204	4.855	11.39
Saving for bequests	13.9	0.345	4.796	11.25
Saving to profit from government subsidies	1.9	0.218	0.414	0.97
Sum			42.630	100.00

Notes: The figures in columns 1 and 2 were calculated in the same way as those in Table 3. The figures in column 3 were calculated as the product of the figures in columns 1 and 2 divided by 100, while the figures in column 4 were calculated as the ratio of the figures in column 3 to the sum of the figures in column 3.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.

Appendix Table: Correlations among Saving Motives (Full Estimation Sample) (Wave 3, 2017)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Saving for housing purchase	1.000										
(2) Saving for other major purchases	0.055	1.000									
(3) Saving to start a business	0.067	0.058	1.000								
(4) Saving to buy financial assets	0.027	0.089	0.087	1.000							
(5) Saving for precautionary purposes	-0.134	0.011	-0.028	-0.061	1.000						
(6) Saving for repaying debts	0.022	0.039	0.043	0.028	-0.045	1.000					
(7) Saving for retirement	-0.085	-0.072	-0.038	-0.001	-0.048	-0.023	1.000				
(8) Saving for travel/holidays	0.023	0.222	0.037	0.076	0.009	0.020	-0.041	1.000			
(9) Saving for inter vivos transfers	-0.012	0.014	0.027	0.024	-0.007	0.066	0.042	0.075	1.000		
(10) Saving for bequests	-0.047	-0.039	-0.002	0.005	-0.036	-0.019	0.074	-0.015	0.083	1.000	
(11) Saving to profit from government subsidies	0.048	0.102	0.024	0.054	0.040	0.030	0.033	0.081	0.038	0.006	1.000

Notes: This table is based on the full estimation sample of 27,681 observations.

Source: Authors' calculations based on data from the Household Finance and Consumption Survey (HFCS), which is conducted by the European Central Bank.