Why Do Europeans Save? Micro-Evidence from the Household Finance and Consumption Survey

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Paper prepared for the 37th IARIW General Conference

August 22-26, 2022

Session 7A-2, New Insights from Micro-Data and Innovative Data Sources

Time: Friday, August 26, 2022 [16:00-17:30 CEST]

Why Do Europeans Save? Micro-Evidence from the Household Finance and Consumption Survey

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July 31, 2022

Abstract

In this paper, we analyze the saving motives of European households using micro-data from the Household Finance and Consumption Survey (hereafter referred to as HFCS), which is conducted by the European Central Bank. 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. Our finding that saving motives that are consistent with the selfish life-cycle model as well as saving motives that are consistent with the altruism model 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 (see section 2). However, our finding that the retirement motive, which is the saving motive that 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 altruistic model. Moreover, our finding that saving for intergenerational transfers accounts for less than one-fifth of total household wealth in Europe provides further corroboration for this finding.

Keywords: altruism model, bequests, Household Finance and Consumption Survey, households, household saving, household wealth, inheritances, *inter vivos* transfers, intergenerational transfers, life-cycle model, precautionary saving, retirement, saving, saving motives, wealth, wealth-to-income ratio

Journal of Economic Literature classification codes: D12 (Consumer Economics: Empirical Analysis), D14 (Household Saving / Personal Finance), D15 (Intertemporal Household Choice / Life Cycle Models of Saving), D64 (Altruism / Philanthropy / Intergenerational Transfers), E21 (Consumption / Saving / Wealth), and J14 (Economics of the Elderly)

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1. Introduction

One of the key variables in economics is saving, and what is important is not just the amount of saving households do but also *why* households save (i.e., the relative importance of the various motives for which households save). Nonetheless, although a voluminous amount of work has been done on the determinants of the amount of saving, relatively little work has been done on why households save. This paper attempts to fill this gap in the literature by analyzing the saving motives of European households using micro-data from the Household Finance and Consumption Survey (hereafter referred to as HFCS), which is conducted by the European Central Bank.

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.

Our finding that saving motives that are consistent with the selfish life-cycle model as well as saving motives that are consistent with the altruism model 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 (see section 2). However, our finding that the retirement motive, which is the saving motive that 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 altruistic model. Moreover, our finding that saving for intergenerational transfers accounts for, at most, one-fifth of total household wealth in Europe provides further corroboration for this finding.

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 the 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; and in section 9, 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 bequests 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 bequests and *inter vivos* 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. Survey of the Previous Literature on Saving Motives

In this section, we survey studies that attempt to estimate the contribution of saving for each motive to total household saving and consider whether or not the findings are consistent with the selfish life-cycle model, the altruism model, or both (see Horioka, 2021, for a more detailed treatment). The findings of previous studies generally support the selfish life-cycle model because they show that saving for life-cycle motives such as retirement are much more important than saving for bequests in Japan as well as in many other countries.

Before turning to a discussion of the findings of previous studies, however, let us first explain the methodology previous authors have used to calculate the amount of saving for each motive of the household sector as a whole. If individuals cannot realize a given motive with only their current income, they need to rely on saving. Moreover, at any given time, there will be individuals who are saving in order to prepare for a given motive as well as individuals who are dissaving to realize the same motive. For example, at any given time, there will be pre-retirement individuals who are saving for retirement as well as post-retirement individuals who are dissaving for retirement. Thus, the contribution that saving for a given motive makes to aggregate household saving is net saving for that motive, which can be calculated as gross saving for that motive minus dissaving for that motive. Mathematically, net saving for a given motive, NS = GS – DS, where GS = gross saving for a given motive and DS = dissaving for a given motive.

Furthermore, there are two ways in which one can use saving to help realize a given motive. The first way is to rely on one's own assets, and in the case of this way, one accumulates the financial assets needed to realize the motive in question beforehand, and once one has accumulated enough assets, one draws down those assets in order to realize that motive. The other way is to rely on borrowing, and in this case, one borrows the funds needed to realize the motive in question, uses those funds to realize that motive immediately, and repays the loan little by little after realizing the motive (note that loan repayments (repayment of the principal only) are a form of saving). What should be noted is that the saving is done before the realization of the motive when one relies on one's own wealth and that it is done after the realization of the motive when one relies on borrowing. In the case of precautionary saving, the saving is done before the occurrence of the event being insured against in the case of self-insurance and after the occurrence of the event being insured against in the case of recourse to capital markets.

The gross saving and dissaving for a given motive in the case of the two financing methods are as follows: the gross saving for a given motive equals the sum of saving in the form of the accumulation of financial assets and saving in the form of loan repayments. Similarly,

dissaving for a given motive equals dissaving in the form of the decumulation of financial assets and dissaving in the form of new borrowings. Moreover, as noted earlier, net saving for a given motive equals gross saving for that motive minus dissaving for that motive.

The only exception to this rule is in the case of housing purchase. A household purchasing housing will decumulate financial assets in order to pay for the down payment and will incur new borrowings (a mortgage) to pay for the remainder of the cost of the house, but dissaving in these two forms will be exactly offset by saving in the form of the accumulation of real assets (viz., housing). Thus, no dissaving will occur at the time of housing purchase, but dissaving will occur after the purchase of the house in the form of depreciation.

The former Institute of Posts and Telecommunications Policy of the former Ministry of Posts and Telecommunications of the Japanese Government conducted a number of surveys of household saving behavior including the "Survey of the Financial Asset Choice of Households," which was conducted in Japan every two years, and the "U.S.–Japan Comparison Survey of Saving," which was conducted simultaneously in the United States and Japan in 1996. Both of these surveys 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, 1998) and Horioka et al. (1998, 2000) use the methodology described above in conjunction with data from the 1994 "Survey of the Financial Asset Choice of Households" and the 1996 "U.S.-Japan Comparison Survey of Saving," respectively, to calculate the contribution of saving for each motive to aggregate household saving (see Horioka (1985) for an analysis of saving for one's children's educational expenses, Horioka (1987) and Grossbard (2015) for an analysis of saving for one's children's marriage expenses, Horioka (1988) for an analysis of saving for housing purchase, and Horioka and Okui (1999) for an analysis of saving for retirement).

Horioka and Watanabe (1997, 1998) and Horioka et al. (1998, 2000) present estimates of the contribution of net saving for each motive to total household saving using data from the two aforementioned surveys. If the selfish life-cycle model applies, individuals should be saving primarily for the retirement motive, and these papers find that net saving for the retirement motive accounts for a full 62.23–62.50% and 30.84% of total household saving in Japan and the United States, respectively, and that it is by far the dominant component of household saving in both countries. Thus, the selfish life-cycle model seems to apply in both countries. However, the share of retirement-related saving in Japan is more than twice what it is in the United States, which suggests that the selfish life-cycle model applies to a much greater extent in Japan than it does in the United States.[1]

It should be noted that saving for the various motives are often interrelated. For example, as noted by Wei and Zhang (2011), Du and Wei (2013), and Horioka and Terada-Hagiwara (2017), the marriage and housing motives are closely related in China and the Republic of Korea because it is common practice in these countries for parents with sons to buy housing for their sons in preparation for their marriage.

[1] The second most important saving motive is the precautionary motive in both countries. It should be noted that saving for the various motives are often interrelated. For example, as noted by Wei and Zhang (2011), Du and Wei (2013), and Horioka and Terada-Hagiwara (2017), the marriage and housing motives are closely related in China and the Republic of Korea because it is common practice in these countries for parents with sons to buy housing for their sons in preparation for their marriage.

If the simplest version of the selfish life-cycle model applies, individuals should not leave a bequest to their children and should therefore not be saving in order to leave a bequest to them. As Horioka and Watanabe (1997, 1998) and Horioka et al. (1998, 2000) show, the share of net saving for the bequest motive is 1.50–3.23% in Japan and 5.04% in the United States, and thus its share is low in both countries but especially in Japan. Thus, the findings of these papers concerning saving for the bequest motive also suggest that the selfish life-cycle model applies in both Japan and the United States but that it is especially applicable in the case of Japan.[2]

A closely related paper is Gourinchas and Parker (2002), which analyzes how the proportions of precautionary saving (buffer saving) and retirement saving (life-cycle saving) evolve over the life cycle using data for the United States and finds that precautionary saving decreases sharply with age whereas retirement saving increases sharply with age and that precautionary saving comprises the lion's share of the target level of liquid wealth until about the age of 40.

Another closely related paper is Schunk (2009), which uses micro data from the SAVE data set to analyze motives for saving in Germany. Schunk (2009) finds that the most important motive for saving in Germany is the precautionary motive, with 62% of respondents feeling that this motive is "very important," followed by the old age provision motive (59%), the motive to purchase a house (36%), and the bequest motive (20%). Horioka et al. (1998, 2000) presents roughly comparable data on the proportion of respondents saving for each motive, and they find that the most important motive is the retirement motive in both the United States and Japan, with 48.6% and 45.2% of respondents saving for this motive in the two countries, respectively, and that the bequest motive is far less important, with only 10.8 and 3.6% of respondents saving for this motive in the two countries, respectively. Thus, the retirement motive is much more important than the bequest motive in all three countries, but the ratio between the two is lowest in Germany (59% vs. 20%), intermediate in the United States (48.6% vs. 10.8%), and highest in Japan (45.2% vs. 3.6%).

Yet another closely related paper is Yao et al. (2011), which compares saving motives in China and the United States. Unfortunately, they do not consider saving for the bequest motive, but they find that saving for the retirement motive is more important for Chinese households than for American households in the lower income quantiles and that saving for the education motive is more important for Chinese households than for American households in all income quantiles. These results suggest that Chinese households are more similar to Japanese households than to American households in terms of the relative importance of saving for the retirement (and education) motives.

One other closely related paper about China is Chao et al. (2011), which finds that the life-cycle hypothesis can explain only 35% of the surge in Chinese household saving but that by adding to the model the strong motivation of young adults for buying a home and the financial support they receive from their parent for that purpose, their model can reproduce the high and increasing level of household saving since the mid-nineties.

[2] Note, however, that saving for one's children's education and marriage expenses also involve intergenerational transfers and that the share of net saving for these two motives is much higher in Japan than in the United States (16.08–16.45% vs. 2.73%). Thus, the share of net saving involving intergenerational transfers is also much higher in Japan than in the United States (17.58–19.68% vs. 7.77%).

Finally, Birkeland (2013) analyzes the saving motives of Dutch households and finds that saving for the precautionary motive is the most important motive for Dutch households, that saving for the retirement motive is the second most important motive, and that the *inter vivos* transfers motive and the bequest motive are less important.

To summarize, the previous literature concerning saving motives suggests that the selfish life-cycle model applies in all countries but that it applies to a greater extent in Japan (and perhaps also in China and the Netherlands) than it does in the United States and Germany.

4. Estimation Model

In this section, we explain the estimation model that we use for our econometric analysis.

Following Guiso et al. (1992), Carroll and Samwick (1995), Kazarosian (1997) and others, our dependent variable is the natural logarithm of the wealth-to-income ratio, defined as the ratio of household net worth to annual household income.

The key explanatory variables we use are dummy variables for each of 11 saving motives (housing purchase, other major purchase, to start a business, to buy financial assets, for unexpected events (a precautionary motive), retirement (the wording in the survey is "saving for old age needs"), to pay off debts, for travel and holidays, for *inter vivos* transfers (the wording in the survey is "saving to support children and grandchildren"), for bequests, and to profit from government subsidies). Since the dependent variable is in log 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.

Finally, we include a number of variables such as age, age squared, dummy variables pertaining to educational attainment, a dummy variable for being a male as control variables, and country dummies (Austria being the reference country), to control for unobserved heterogeneity.

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), which is conducted 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 18 euro area countries, as well as Poland and Hungary. The first (2010) wave of the survey was conducted in 2010-11, the second (2014) wave in 2013-15, and the third (2017) wave in 2017. More detailed information on this survey can be found at https://www.ecb.europa.eu/pub/economic-research/research-networks/html/researcher_hfcn.en.html

We use the data from the third (2017) wave of the survey for our analysis. The countries included in our estimation sample were Austria, Belgium, Croatia, Cyprus, Estonia, Finland, Germany, Greece, France, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovakia, and Slovenia.

Turning to sample selection, we dropped all observations with missing values for any of the variables used in our analysis, and in addition, we dropped all observations for respondents who circled more than 6 saving motives. The reason is that there are substantial differences among countries in the average number of saving motives circled, 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.

In addition, we dropped all observations for which the wealth-to-income ratio is more than 100 because these are primarily respondents with very low incomes, which causes their wealth-to-income ratios to be unusually high.

Overall, our regression sample includes about 74,000 observations.

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6. Descriptive Statistics

Tables 1-3 show the descriptive statistics for the variables used in the econometric analysis for the full sample, the under-60 sample, and the 60-or-older sample, respectively. Looking first at the results for saving motives for the full sample, if saving motives are ranked by the proportion of respondents saving for each motive, the precautionary motive ("saving for unexpected events") is by far the top saving motive, with 30.7% of respondents saving for this motive. The retirement motive ranks second, with 21.3% of respondents saving for this motive; the travel/holidays motive and the *inter vivos* transfers motive rank third, with 12.2% of respondents saving for these motives; the major purchases motive ranks fourth ranks fourth, with 8.6% of respondents saving for this motive; and, the bequest motive ranks fifth, with 5.2% of respondents saving for this motive.

Looking next at the results for the under-60 and 60-or-older samples, the rank order of the top five saving motives for these samples is very similar to that for the full sample, except that saving for buying a house replaces bequests as the fifth most relevant motive in the under-60 sample, while saving for bequests replaces saving for major purchases as the fourth most important motive in the 60-or-older sample. Moreover, the proportion of respondents saving for each motive shows some differences. For example, the proportion of respondents saving for the retirement motive is higher for the 60-or-older sample, which is not surprising because one would expect respondents to become more and more concerned about life after retirement as they age (this finding is consistent with the findings of Gourinchas and Parker, 2002). Also, the proportion of respondents saving for the *inter vivos* transfers motive is lower and the proportion of respondents saving for the bequest motive is higher for the 60-or-older sample, which is not surprising because one would expect the form of transfers to children to shift from *inter vivos* transfers to bequests as the respondent ages.

The detailed results are not shown due to space limitations, but we calculated a correlation matrix between saving motives and found that correlations among saving motives were surprisingly low. The highest correlations were between the other major purchase motive and the travel/holidays motive (0.309) and between the precautionary motive and the retirement motive (0.304). All other correlations were less than 0.3, with an average of 0.145. Thus, multicollinearity among the saving motive dummies is presumably not a problem, implying that we can measure the contribution of each motive to wealth accumulation with some 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 3 most important motives are the retirement motive, the *inter vivos* transfers motive, and the travel/holidays motive, although the rank order of these motives differ 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 for that motive are large or small. It is to this issue that we turn in our econometric analysis.

Finally, the mean of the wealth-to-income ratio is 7.16, which indicates that the average respondent's wealth (net worth) is slightly more than seven times his or her annual income.

7. Estimation Results concerning the Determinants of the Wealth-to-Income Ratio

The estimation results concerning the determinants of the wealth-to-income ratio for the full sample, the under-60 sample, and the 60-or-older sample are shown in Tables 4-6, respectively. Looking first at the results for the full sample in Table 4, all the coefficients of the saving motive dummies, except for those related to home purchase, debts repayment and travel/holidays are positive and statistically. The business motive dummy has the largest coefficient (0.491), which implies that, *ceteris paribus*, those saving to start a business have wealth-to-income ratios that are a full 49.1% higher than the wealth-to-income ratios of those who are not saving for this motive. This result is not surprising because starting a business typically requires a considerable investment. Moreover, the coefficients of the five dummies pertaining to retirement, buying financial assets, bequests, major purchases, and *inter vivos* transfers are of considerable magnitude. The dummy for the retirement motive has the second largest coefficient (0.353), which implies that, *ceteris paribus*, those who are saving for the retirement motive have wealth-to-income ratios that are a full 35.3% higher than the wealth-to-income ratios of those who are not saving for this motive. This result is not surprising because the amount of funds needed for living expenses during retirement is considerable. Moreover, the dummies for the bequest motive and the *inter vivos* transfers motive also have relatively large coefficients (0.264 and 0.104, respectively), which implies that, *ceteris paribus*, those who are saving for these motives have wealth-to-income ratios that are 26.4% and 10.4% higher, respectively, than the wealth-to-income ratios of those who are not saving for these motives, suggesting that Europeans are planning to leave considerable intergenerational transfers of both types to their children.

Looking next at the estimation results for the under-60 sample in Table 5, the results are broadly consistent with the results for the full sample, with the main differences being in the magnitude of the coefficients of the saving motives dummies. For example, the coefficients of the dummy for the retirement motive, for the bequest motive and for the *inter vivos* transfers motive are even larger than before (respectively, 0.379, 0.319, 0.152), implying that those who are saving for retirement have wealth-to-income ratios that are a full 37.9% higher than the wealth-to-income ratios of those who are not saving for this motive, while those saving for bequests and for *inter vivos* transfers have wealth-to-income ratios that are 35.9% and 15.2% larger than those not saving for these motives.

Looking finally at the results for the 60-or-older sample in Table 6, they are slightly less satisfactory in statistical terms, with two more coefficients (those associated to setting up a business and buying home) loosing statistical significance, quite expectedly given the nature of the subsample. The coefficient of the dummy for other major purchases is the largest (0.337), implying that those who are saving for this motive (which may include a second home) have wealth-to-income ratios that are a full 33.7% higher than the wealth-to-income ratios of those who are not saving for this motive. The coefficient of the dummy for the retirement motive is smaller than it is for the full sample (0.283 vs. 0.353) whereas the coefficient of the dummy for the bequest motive is slightly smaller than it is in the full sample (0.237 vs. 0.264), while that of the dummy for *inter vivos* transfers is much smaller (0.061 vs. 0.104). This is not surprising, as saving for *inter vivos* transfers is more important for younger individuals and saving for bequests is more important for older individuals since *inter vivos* transfers are, by definition, left earlier than bequests are.

These results contrast sharply with the results in the previous section pertaining to the proportion of respondents saving for each motive. For example, the precautionary and leisure/holidays motives rank high when the motives are ranked by the proportion of respondents saving for each motive but not when the motives are ranked by the quantitative importance of each motive, presumably because the proportion of respondents saving for these motives is relatively large whereas the amounts involved are relatively small. Conversely, the business motive ranks high when the motives are ranked by the quantitative importance of each motive (although its coefficient is statistically significant only in the 60-or-older sample) but not when the motives are ranked by the proportion of respondents saving for each motive, presumably because the proportion of respondents saving for this motive is relatively small whereas the amounts involved are relatively large. Finally, the retirement motive ranks high regardless of which criterion is used to rank the motives, presumably because the proportion of respondents saving for this motive as well as the amounts involved are relatively large.

Turning to the estimation results for the other explanatory (control) variables, the coefficients of age and age-squared are positive and negative, respectively, and statistically significant, implying that the impact of age on the wealth-to-income ratio has an inverted U-shape, as expected, in all samples. As for the impact of educational attainment, the wealth-to-income ratio tends to monotonically increase with educational attainment in all samples, and especially so in the full sample and the 60-or-Older samples. Finally, the impact of the male dummy is positive and statistically insignificant in the full sample and the under-60 sample, suggesting that male headed households save more, *ceteris paribus*, than female headed households. Finally, the coefficients of country dummies (not reported in the tables) are all statistically significant, pointing at a large degree of heterogeneity across countries.

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

The detailed results are not shown due to space limitations, but we also tried doing the estimations separately for each quartile of the wealth-income ratio and found interesting differences. For example, we found that the coefficient of the dummies for setting up a business is no longer significant (and small in absolute value), while the coefficient of the dummy for the precautionary motive is very significant and much larger than in the overall sample (0.291 vs. 0.116). Interestingly, the coefficients of the bequest and the *inter vivos* transfers motive are large and statistically significant in the lowest quartile, and even more than in the case of the full sample (0.316 and 0.131 vs. 0.264 and 0.104, respectively).

Also, we performed separate estimations for a subgroup of countries with a more generous pension system (higher than the median gross replacement rates) and for a subgroup of countries with a more generous national health system (higher than median average of percentage of public spending for inpatient and outpatient medical care as a percentage of total health spending). Even controlling for country fixed effects, we find in the first subgroup a much lower coefficient of the dummy associated with saving for retirement (0.25 vs. 0.35 estimated on the whole sample) and a much lower coefficient of the dummy associated to precautionary saving in the second subgroup (0.07 vs. 0.12 estimated on the whole sample). This suggests that social insurance programs depress saving for the relevant saving motives, as one would expect.

8. The Composition of Household Wealth by Motive

In this section, we present estimates of the share of household wealth for each saving motive in total household wealth, 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, which are taken from Tables 1-3, multiplied by the share of wealth for each motive in total wealth for households saving for that motive. The latter can be proxied for by the coefficient of the dummy variable for each motive in the wealth-to-income ratio regressions because this coefficient can be interpreted as the percentage change in the wealth-to-income ratio that is attributable to that motive.

The results are shown in Tables 7-9 for the full sample, the under-60 sample, and the 60-or-older sample, respectively. Looking first at the results for the full sample in Table 7, the retirement motive is by far the most important motive for saving with a share of almost one-half (43.1%). The precautionary motive is second, with a share of 20.4%, followed by the other major purchases motive (10.9%), the bequest motive (7.88%), and the *inter vivos* transfers motive (7.28%), while all the other motives account for a tiny percentage of saving.

Looking next at the results broken down by age in Tables 8 and 9, the retirement motive is the most important motive for saving in the 60-or-older samples, and saving for unexpected events is second, while the reverse is true in the under-60 sample. As for motives relating to intergenerational transfers (the *inter vivos* transfers motive and the bequest motive), the share of the *inter vivos* transfers motive is much larger in the under-60 sample than it is in the 60-or-older sample (7.6% vs. 3.8%) whereas the share of the bequest motive is much larger in the 60-or-older sample than it is in the under-60 sample (11.8% vs. 3.3%), which is not surprising given that bequests are, by definition, left later in life than *inter vivos* transfers.

Since it is primarily the motives relating to intergenerational transfers (the *inter vivos* transfers motive and the bequest motive) that are consistent with the altruism model, we can determine how applicable the altruism model is by calculating the combined share of the *inter vivos* transfers motive and the bequest motive. This combined share is comparable in all three samples: 15.2% in the full sample, 10.9% in the under-60 sample, and 15.6% in the 60-or-older sample. Moreover, it is possible that part of these intergenerational transfers are motivated by selfish or strategic considerations à la Bernheim, Shleifer, and Summers (1985), meaning that the share of saving that is attributable to altruistic motives may be even lower than suggested by these figures. Thus, although the selfish life-cycle model and the altruism model appear to

coexist in Europe, the selfish life-cycle model seems to be far, far more applicable than the altruism model.

9. Summary, Conclusions, and Policy Implications

In this paper, we analyzed the saving motives of European households using a very large sample of micro-data from the Household Finance and Consumption Survey (hereafter referred to as HFCS), which is conducted 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.

Our finding that saving motives that are consistent with the selfish life-cycle model as well as saving motives that are consistent with the altruism model 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 (see section 3). However, our finding that the retirement motive, which is the saving motive that 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 altruistic model. Moreover, our finding that saving for intergenerational transfers accounts for less than 15% of total household wealth in Europe provides further corroboration for this finding.

Turning to the policy implications of our findings, our finding that the retirement motive is so important in Europe suggests that social safety nets for the elderly (such as public pensions, public health insurance, and public long-term care insurance) may be inadequate, requiring households to save on their own in preparation for their life after retirement. This, in turn, suggests that it might be desirable for governments to beef up social safety nets for the elderly.

Second, our finding that the bequest and *inter vivos* transfers motives are of some importance in Europe suggests that wealth disparities are passed on from generation to generation via bequests and *inter vivos* transfers and that it might be desirable for governments to raise estate, gift, or wealth taxes to alleviate this tendency.

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Table 1: Descriptive Statistics (Full Sample)					
	Mean	Std. Dev.	Median	Minimum	Maximum
Wealth/Income	7.157	9.661	4.364	0	99.826
Log(Wealth/Income)	1.121	1.665	1.473	-10.643	4.603
Age	56.063	15.901	56	-2	85
Age^2/100	33.959	17.830	31.36	0.04	72.25
Primary	0.122	0.327	0	0	1
Lower secondary	0.120	0.325	0	0	1
Upper secondary	0.412	0.492	0	0	1
First stage tertiary	0.177	0.382	0	0	1
Second stage tertiary	0.147	0.354	0	0	1
Doctoral	0.022	0.146	0	0	1
Male	0.614	0.487	1	0	1
Saving for buying a home	0.051	0.219	0	0	1
Saving for other major purchases	0.086	0.281	0	0	1
Saving to start a business	0.008	0.090	0	0	1
Saving to buy financial assets	0.017	0.131	0	0	1
Saving for unexpected events	0.307	0.461	0	0	1
Saving for repaying debts	0.038	0.192	0	0	1
Saving for retirement	0.213	0.410	0	0	1
Saving for travel/holidays	0.122	0.327	0	0	1
Saving for inter vivos transfers	0.122	0.327	0	0	1
Saving for bequests	0.052	0.222	0	0	1
Saving to profit from government subsidies	0.009	0.096	0	0	1

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

Table 2: Descriptive Statistics (Under-60 Sample)					
	Mean	Std. Dev.	Median	Minimum	Maximum
Wealth/Income	5.523	8.515	3.149	0	99.269
Log(Wealth/Income)	0.800	1.675	1.147	-10.643	4.598
Age	44.674	9.916	46	-2	59
Age^2/100	20.941	8.445	21.16	0.04	34.81
Primary	0.056	0.229	0	0	1
Lower secondary	0.093	0.290	0	0	1
Upper secondary	0.452	0.498	0	0	1
First stage tertiary	0.207	0.405	0	0	1
Second stage tertiary	0.172	0.378	0	0	1
Doctoral	0.020	0.140	0	0	1
Male	0.625	0.484	1	0	1
Saving for buying a home	0.072	0.259	0	0	1
Saving for other major purchases	0.107	0.309	0	0	1
Saving to start a business	0.012	0.108	0	0	1
Saving to buy financial assets	0.022	0.147	0	0	1
Saving for unexpected events	0.302	0.459	0	0	1
Saving for repaying debts	0.051	0.220	0	0	1
Saving for retirement	0.176	0.381	0	0	1
Saving for travel/holidays	0.144	0.352	0	0	1
Saving for inter vivos transfers	0.141	0.348	0	0	1
Saving for bequests	0.033	0.180	0	0	1
Saving to profit from government subsidies	0.012	0.109	0	0	1

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

Table 3: Descriptive Statistics (60 or Older Sample)					
	Mean	Std. Dev.	Median	Minimum	Maximum
Wealth/Income	9.32	10.615	6.493	0	99.826
Log(Wealth/Income)	1.546	1.553	1.871	-9.947	4.603
Age	71.134	7.65	70	60	85
Age^2/100	51.185	11.1	49.00	36.00	72.25
Primary	0.209	0.406	0	0	1
Lower secondary	0.156	0.363	0	0	1
Upper secondary	0.359	0.480	0	0	1
First stage tertiary	0.138	0.345	0	0	1
Second stage tertiary	0.114	0.318	0	0	1
Doctoral	0.024	0.154	0	0	1
Male	0.598	0.490	1	0	1
Saving for buying a home	0.021	0.145	0	0	1
Saving for other major purchases	0.059	0.235	0	0	1
Saving to start a business	0.003	0.058	0	0	1
Saving to buy financial assets	0.011	0.105	0	0	1
Saving for unexpected events	0.314	0.464	0	0	1
Saving for repaying debts	0.021	0.145	0	0	1
Saving for retirement	0.262	0.440	0	0	1
Saving for travel/holidays	0.091	0.288	0	0	1
Saving for inter vivos transfers	0.097	0.296	0	0	1
Saving for bequests	0.077	0.266	0	0	1
Saving to profit from government subsidies	0.006	0.074	0	0	1

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 Determinants of the Wealth-to-Income Ratio (Full Sample)					
Log Wealth-to-income ratio	Coeff.	Std. Error	t-value	p-value	
Age	0.09	0.005	17.06	0	***
Age^2/100	-0.052	0.006	-8.86	0	***
Primary	-0.465	0.119	-3.89	0.001	***
Lower secondary	-0.355	0.142	-2.5	0.022	**
Upper secondary	0.142	0.051	2.76	0.013	**
First stage tertiary	0.578	0.097	5.97	0	***
Second stage tertiary	0.593	0.069	8.57	0	***
Doctoral	0.682	0.031	21.86	0	***
Male	0.246	0.07	3.53	0.002	***
Saving for buying a home	0.017	0.094	0.18	0.861	
Saving for other major purchas	0.22	0.041	5.33	0	***
Saving to start a business	0.491	0.149	3.3	0.004	***
Saving to buy financial assets	0.269	0.074	3.65	0.002	***
Saving for unexpected events	0.116	0.043	2.68	0.015	**
Saving for repaying debts	0.073	0.191	0.38	0.709	
Saving for retirement	0.353	0.071	4.95	0	***
Saving for travel/holidays	0.03	0.049	0.6	0.554	
Saving for inter vivos transfers	0.104	0.019	5.33	0	***
Saving for bequests	0.264	0.042	6.27	0	***
Saving to profit from government subsidies	0.258	0.09	2.87	0.01	**
Constant	-3.563	0.198	-17.98	0	***
Mean dependent var	1.121				
R-squared	0.179				
N	73932				

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 Determinants of the Wealth-to-Income Ratio (Under-60 Sample)					
Log Wealth-to-income ratio	Coeff.	Std. Error	t-value	p-value	
Age	0.067	0.012	5.68	0	***
Age^2/100	-0.025	0.014	-1.84	0.082	*
Primary	-0.707	0.128	-5.51	0	***
Lower secondary	-0.235	0.14	-1.68	0.111	
Upper secondary	0.309	0.046	6.65	0	***
First stage tertiary	0.805	0.102	7.91	0	***
Second stage tertiary	0.793	0.067	11.92	0	***
Doctoral	0.767	0.055	13.88	0	***
Male	0.229	0.042	5.41	0	***
Saving for buying a home	0.003	0.108	0.03	0.977	
Saving for other major purchas	0.154	0.029	5.29	0	***
Saving to start a business	0.533	0.154	3.45	0.003	***
Saving to buy financial assets	0.243	0.057	4.24	0	***
Saving for unexpected events	0.136	0.056	2.43	0.026	**
Saving for repaying debts	0.11	0.179	0.62	0.546	
Saving for retirement	0.379	0.061	6.17	0	***
Saving for travel/holidays	0.007	0.057	0.12	0.906	
Saving for inter vivos transfers	0.152	0.036	4.26	0	***
Saving for bequests	0.319	0.067	4.77	0	***
Saving to profit from government subsidies	0.136	0.07	1.96	0.066	*
Constant	-3.11	0.176	-17.64	0	***
Mean dependent var	0.8				
R-squared	0.188				
N	42109				

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 Determinants of the Wealth-to-Income Ratio (60-or-Older Sample)

Log Wealth-to-income ratio	Coeff.	Std. Error	t-value	p-value	
Age	0.19	0.02	9.4	0	***
Age^2/100	-0.127	0.014	-8.95	0	***
Primary	-1.417	0.265	-5.35	0	***
Lower secondary	-1.418	0.084	-16.79	0	***
Upper secondary	-0.991	0.227	-4.36	0	***
First stage tertiary	-0.673	0.276	-2.44	0.025	**
Second stage tertiary	-0.644	0.277	-2.32	0.032	**
Doctoral	-0.293	0.326	-0.9	0.38	
Male	0.281	0.114	2.47	0.024	**
Saving for buying a home	0.046	0.077	0.6	0.558	
Saving for other major purchas	0.337	0.111	3.04	0.007	***
Saving to start a business	0.2	0.188	1.07	0.301	
Saving to buy financial assets	0.316	0.114	2.76	0.013	**
Saving for unexpected events	0.081	0.032	2.54	0.021	**
Saving for repaying debts	-0.083	0.236	-0.35	0.731	
Saving for retirement	0.283	0.09	3.16	0.005	***
Saving for travel/holidays	0.049	0.052	0.94	0.358	
Saving for inter vivos transfers	0.061	0.02	3.01	0.007	***
Saving for bequests	0.237	0.039	6.13	0	***
Saving to profit from government subsidies	0.491	0.219	2.24	0.038	**
Constant	-5.87	0.706	-8.31	0	***
Mean dependent var	1.546				
R-squared	0.091				
N	31823				

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 Household Wealth by Saving Motive (Full Sample)

	1	2	3	4
Saving motive	Proportion of respondents saving for each saving motive (percent)	Percent change in wealth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in wealth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of wealth for each saving motive (percent)
Saving for buying a home	5.1	1.7	0.087	0.50
Saving for other major purchases	8.6	22	1.892	10.86
Saving to start a business	0.8	49.1	0.393	2.25
Saving to buy financial assets	1.7	26.9	0.457	2.62
Saving for unexpected events	30.7	11.6	3.561	20.44
Saving for repaying debts	3.8	7.3	0.277	1.59
Saving for retirement	21.3	35.3	7.519	43.15
Saving for travel/holidays	12.2	3	0.366	2.10
Saving for inter vivos transfe	12.2	10.4	1.269	7.28
Saving for bequests	5.2	26.4	1.373	7.88
Saving to profit from government subsidies	0.9	25.8	0.232	1.33
Sum			17.426	100.00

Notes: The figures in column 1 are taken from Table 1, and the figures in column 2 are taken from Table 4. The figures in column 3 are calculated as the product of the figures in columns 1 and 2 divided by 100. Finally, the figures in column 4 are 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 Household Wealth by Saving Motive (Under-60 Sample)

	1	2	3	4
Saving motive	Proportion of respondents saving for each saving motive (percent)	Percent change in wealth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in wealth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of wealth for each saving motive (percent)
Saving for buying a home	7.200	10.8	0.778	11.59
Saving for other major purchases	10.700	2.9	0.310	4.62
Saving to start a business	1.200	15.4	0.185	2.75
Saving to buy financial assets	2.200	5.7	0.125	1.87
Saving for unexpected events	30.200	5.6	1.691	25.21
Saving for repaying debts	5.100	17.9	0.913	13.61
Saving for retirement	17.600	6.1	1.074	16.00
Saving for travel/holidays	14.400	5.7	0.821	12.23
Saving for inter vivos transfe	14.100	3.6	0.508	7.57
Saving for bequests	3.300	6.7	0.221	3.30
Saving to profit from government subsidies	1.200	7	0.084	1.25
Sum			6.709	100.00

Notes: The figures in column 1 are taken from Table 2, and the figures in column 2 are taken from Table 5. The figures in column 3 are calculated as the product of the figures in columns 1 and 2 divided by 100. Finally, the figures in column 4 are 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 Household Wealth by Saving Motive (60-or-Older Sample)

	1	2	3	4
Saving motive	Proportion of respondents saving for each saving motive (percent)	Percent change in wealth-to-income ratio that is attributable to each saving motive (households saving for each motive) (percent)	Percent change in wealth-to-income ratio that is attributable to each saving motive (all households) (percent)	Share of wealth for each saving motive (percent)
Saving for buying a home	2.1	4.6	0.097	0.63
Saving for other major purchases	5.9	33.7	1.988	12.88
Saving to start a business	0.3	20	0.060	0.39
Saving to buy financial assets	1.1	31.6	0.348	2.25
Saving for unexpected events	31.4	8.1	2.543	16.48
Saving for repaying debts	2.1	-8.3	-0.174	-1.13
Saving for retirement	26.2	28.3	7.415	48.04
Saving for travel/holidays	9.1	4.9	0.446	2.89
Saving for inter vivos transfe	9.7	6.1	0.592	3.83
Saving for bequests	7.7	23.7	1.825	11.82
Saving to profit from government subsidies	0.6	49.1	0.295	1.91
Sum			15.433	100.00

Notes: The figures in column 1 are taken from Table 3, and the figures in column 2 are taken from Table 6. The figures in column 3 are calculated as the product of the figures in columns 1 and 2 divided by 100. Finally, the figures in column 4 are 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.