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Stockholding in Europe: Evidence from the Consumer Expectations Survey

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Abstract: We examine recent changes in stock market participation using newly available survey data from eleven euro area countries over the period 2020–2024. The evidence points to substantial turnover, with around 10% of non-stockholders entering the market each year, and more than 20% of stockholders exiting. New entrants tend to have lower education, income, financial literacy, and risk tolerance than established investors, indicating a shift in the composition of market participants. We also highlight the growing importance of cryptocurrency investments among retail investors. Overall, these findings shed new light on evolving household financial behavior and its implications for market participation and financial stability.

JEL Classification codes: D14, E21, G51

Keywords: Stocks, Mutual Funds, Crypto Assets, Household Finance, Consumer Expectations Survey

Non-technical summary

Households in Europe remain surprisingly reluctant to invest in equities despite the long-term benefits, and when they do enter financial markets, their participation is often short-lived and unevenly distributed across the population. Drawing on survey data from the ECB's Consumer Expectations Survey, this paper offers a detailed and timely picture of how European households engage with risky financial assets, including stocks and mutual funds (incl. ETFs), as well as newer, more speculative instruments such as crypto assets.

At the centre of our analysis are simple but policy-relevant questions: who participates in financial markets in Europe, how stable that participation is over time, and what holds back broader engagement with risky assets. These issues are important to current policy debates. Increasing household participation in capital markets is seen as a key element of strengthening Europe's financial system and improving wealth accumulation. Recent research also suggests it might enhance the transmission of monetary policy. Yet, despite technological progress and easier access to financial products, participation remains limited and uneven among consumers.

Our analysis reveals three main findings. First, barriers to stock market participation are widespread and multifaceted. While financial constraints are significant, especially for lower-income households, they are not the only obstacle. Many non-investors lack funds, highlighting liquidity and entry costs. Even wealthier households avoid investing due to concerns about risks, limited knowledge, or distrust in financial institutions. These barriers are common across income levels and countries, indicating that increasing participation goes beyond boosting incomes or cutting costs. It involves addressing issues like financial literacy, perceived complexity, and confidence in the financial system.

Second, participation in risky assets is dynamic yet stable at low levels. The data shows high turnover: annually, about 10% of non-investors enter the stock market, and 20% of investors exit. These changes offset each other, keeping overall participation stable. Around one third of households hold stocks or mutual funds, with direct stock ownership closer to one quarter. This suggests markets attract new participants but struggle to retain them.

The timing of these flows is important. Early in the COVID-19 pandemic, market entry increased due to higher savings, fewer spending options, and strong market performance.

However, much of this participation was fragile, with many households exiting as economic uncertainty grew. This indicates recent rises in participation are temporary, not indicating a lasting shift to broader market engagement.

New entrants differ from established investors; they tend to be younger with lower income, education, financial literacy, and risk tolerance, resembling non-investors more than experienced ones. This shift affects financial stability, as these households may react more to market fluctuations and withdraw from risky assets during stress.

Third, the rise of crypto assets influences household financial behaviour. Though less common than traditional investments, about 8-10% of households own crypto. It is mainly used by younger, male, risk-tolerant individuals, with small investment amounts. Evidence indicates crypto is mainly for speculation, not long-term investing. Barriers to crypto investments differ from stocks, mainly due to trust issues. Non-investors worry about safety, technology, and regulation, highlighting the importance of consumer protection in new financial markets.

These findings show household financial behavior in Europe is influenced by both structural barriers like limited resources and costs, and behavioral factors such as risk perceptions, trust, and financial knowledge. These factors affect both entry and duration in financial markets.

From a policy perspective, the results imply that broadening participation in capital markets requires more than just reducing financial barriers or expanding access. These must be complemented by measures tackling informational and behavioral frictions, such as enhancing financial literacy, increasing transparency, and building trust in financial institutions.

Finally, the growing role of crypto assets presents new challenges for policymakers. While they might expand financial market access for some households, their speculative, volatile nature poses risks. Ensuring consumer protection and clear risk communication is vital as markets evolve.

"[…] Europeans favor low-risk, liquid savings products. […] This has two main consequences for our economy. First, European households are much less wealthy than they could be. Second, the flow of savings into capital markets is much lower than it could be."
Christine Lagarde, November 2024[1]

"We want to give our citizens the incentives to actually put their savings to work. And by that, we would also be able to direct more funds into our capital markets, give more opportunities to our companies, which would be able to grow, innovate and create better jobs."
Maria Luís Albuquerque, September 2025[2]

1. Introduction

Fewer than half of European adults currently invest in equities, either directly or through mutual funds, despite their higher long-run returns relative to savings accounts and bonds, and the reduced entry barriers brought about by digital and mobile trading platforms. This limited participation carries important macroeconomic consequences, as emphasized by European policymakers advocating greater retail involvement in capital markets rather than continued reliance on low-yield savings instruments. In response, initiatives such as the European Capital Markets Union seek to broaden household participation by encouraging moderate, well-diversified financial risk-taking. Moreover, recent evidence suggests that stock market participation plays a role in shaping the transmission of monetary policy (Melcangi and Sterk, 2025).

In this paper, we analyze recent dynamics in retail investors' holdings of risky assets using data from the Consumer Expectations Survey (CES), a high-frequency panel conducted by the European Central Bank (ECB) that has surveyed households in 11 euro area countries on a monthly basis since April 2020. The CES is representative of national populations and provides high-frequency, harmonized data on demographics, income, consumption, financial assets and

[1] "Out of the comfort zone: Europe and the new world order," speech by Christine Lagarde at the 34th European Banking Congress, November 22, 2024, https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp241122~fb84170883.en.html.
[2] "Brussels wants Europe's savers to put more money into the stock market", Financial Times, September 30, 2025, https://www.ft.com/content/e23117c0-3fe6-4b89-b1fc-c99f49976dc0.

liabilities, as well as expectation variables. We show that persistent non-participation in risky assets reflects both financial constraints (especially among low-income households) and broader behavioral barriers, including risk aversion, low trust, and low financial literacy. Despite substantial entry and exit flows, stock-market participation remains low, with the pandemic-era entry wave proving relatively fragile. We also document that crypto ownership is non-negligible but highly speculative and short-lived, with lack of trust emerging as the primary barrier to adoption.

The CES has three key features that make it particularly well suited for analyzing household portfolio choice at the micro level from a cross-country and dynamic perspective: international comparability, harmonized definitions of portfolio and socioeconomic variables, and a panel structure. Together, these elements allow us to build a comprehensive and timely picture of European stockholders, their characteristics, and the evolution of their portfolios. In addition, the CES enables us to examine the role of crypto assets (among the most volatile asset classes) in household portfolios, shedding light on the motives, constraints, and behavioral factors shaping investment in emerging digital assets.

Our analysis proceeds in three steps. First, we document the characteristics of European stockholders and benchmark the CES evidence against earlier studies. Our findings are consistent with Arrondel et al. (2016), who provide comparative cross-sectional evidence using the first wave of the Eurosystem Household Finance and Consumption Survey (HFCS), a large micro-level dataset on household balance sheets across fifteen euro area countries. As in that survey, and in earlier work by Guiso et al. (2002, 2003) and Christelis et al. (2013), stock market participation – both direct and indirect – varies substantially across households along the income and wealth distributions. The strong positive association between stockholding and wealth is typically interpreted as reflecting the role of fixed entry costs, minimum investment requirements, and participation fees in limiting stock market participation; see the surveys by Guiso and Sodini (2013) and Gomes et al. (2021).

The literature also shows that many households abstain from holding stocks even at relatively high levels of wealth and that, conditional on wealth, those with greater financial sophistication are more likely to participate. The strong correlation between participation and financial sophistication suggests that information costs play a central role: more sophisticated households process information more efficiently and at lower cost, thereby reducing both entry

and ongoing participation costs (Lusardi and Mitchell, 2008). Moreover, wealth and sophistication tend to reinforce each other, as wealthier households have stronger incentives to invest in financial knowledge when building their portfolios. Using CES data and standard measures of financial sophistication, we confirm this positive relationship between stock ownership and financial literacy.

We extend this evidence by directly asking CES respondents why they did not invest in stocks. A large share reports a low willingness to take financial risks and limited trust in financial markets. The data indicate that demographic, economic, and attitudinal factors jointly shape non-participation in equity markets: liquidity constraints and low income are most relevant for younger and poorer households, while older respondents more often cite lack of funds and low trust; men and more educated individuals point to risk considerations and time constraints; and cross-country differences reflect institutional and cultural heterogeneity in financial attitudes. These findings support policies aimed at financial inclusion that address both resource constraints and behavioral barriers, such as trust, financial literacy, and risk perceptions, to broaden participation in equity markets.

In the second step of our analysis, we exploit the panel structure of the CES to study portfolio mobility, focusing on the determinants of entry into and exit from the stock market. We document substantial turnover among retail investors. During the pandemic, about 10% of non-stockholders entered the market each year, while roughly 20% of existing stockholders exited. New entrants tend to have lower levels of education, income, risk tolerance, and financial literacy than more established investors with longer market tenure. Since the pool of non-stockholders is smaller than that of stockholders, inflows and outflows are broadly similar in absolute terms, leaving overall participation relatively stable. As a result, stock market participation in Europe remains around 20%–25% for direct stockholding, and approximately 35% when mutual funds are included.

In the final part of the paper, we turn to crypto assets, which are among the riskiest financial instruments available to households. Crypto ownership in the euro area has hovered around 8%–10%, with most current holders entering the market during the pandemic-era boom of 2020–21, and typically investing modest amounts. Among non-investors, the main barrier to participation is a lack of trust in the underlying technology, trading platforms, or the extent of consumer protection, while concerns about volatility and limited knowledge are less prominent.

Panel evidence also shows that entry is concentrated among younger, risk-tolerant men, whereas financially literate and more liquid households are less likely to exit once they invest.

The remainder of the paper is organized as follows. Section 2 describes the CES data. Section 3 presents descriptive and econometric evidence on motives for not investing in stocks and on portfolio mobility, documenting entry and exit rates over the period 2020–2024, linking our analysis to the existing literature. Section 4 examines the relationship between stockholding and socioeconomic characteristics. Section 5 focuses on regression results on first time ownership and entry and exit dynamics. Section 6 turns to crypto investments, showing their growing relevance and their non-negligible adoption among younger cohorts of investors in the euro area. Section 7 concludes.

2. The Consumer Expectations Survey

We contribute to understanding household stockholding by drawing on data from the ECB's Consumer Expectations Survey (CES). The CES is a monthly online survey that collects detailed microdata on consumer perceptions and expectations in the euro area. Building on recent international experiences and advances in survey methodology, as reflected, for example, in the Federal Reserve Bank of New York's Survey of Consumer Expectations (Armantier et al., 2017), the CES was launched in a pilot phase in January 2020 interviewing consumers monthly in the six largest euro area countries (Belgium, France, Germany, Italy, the Netherlands, Spain). Since January 2022, the survey has expanded to cover five additional countries (Austria, Greece, Finland, Ireland, and Portugal). Georgarakos and Kenny (2022) and ECB (2021) provide details on the survey.

Since its inception, the CES has also become widely used in academic research, owing to its rich information on households' expectations, novel questions about consumer behavior, and the feasibility of implementing survey experiments for causal inference. For example, previous research used dispersion in professional forecasts of euro-area GDP growth and applied information treatments to randomly selected subsets of respondents to examine the causal impact of this information on respondents' expectations and their uncertainty about future economic growth (Coibion et al., 2024). In another module, the CES asked respondents to report

how they would allocate a hypothetical lottery, distinguishing among spending, saving in bank accounts, investing in financial assets, and repaying debt (Christelis et al., 2025). Georgarakos et al. (2025) used a survey experiment to study labor market participation, examining how respondents would adjust their labor market participation, hours worked, and job search effort (if not employed) in response to randomly assigned windfall-gain scenarios.

Several features of the CES make it particularly well-suited for our research. First, the survey provides comprehensive, representative data across the euro area, thereby significantly extending the single-country focus of many studies on stock market participation.[3] Second, the survey includes a large sample, ensuring a sufficient number of stock market participants is observed in the data. Initially, the target sample size was about 10,000 monthly respondents. In July 2021, the survey was expanded to about 14,000 monthly respondents. With the addition of five new countries in 2022 (1,000 respondents each), the total target sample per wave reached about 19,000 by April 2022. Third, the CES operates as a rotating panel, allowing respondents to participate in multiple survey rounds over time. The maximum participation duration is 24 completed survey rounds or 36 months after initial recruitment, whichever occurs first.[4] This feature enables us to explore transitions in stock market participation over time among the subsample of respondents observed across multiple survey waves.

Moreover, the online format of the survey is particularly useful for adapting questionnaires to changing economic conditions, allowing the addition of sections to the basic questionnaire structure. As a result, the CES has become a key tool for the ECB to obtain real-time insights into household economic behavior. In our study, the self-completion method mitigates concerns about interviewer bias and potential misreporting of sensitive topics such as household portfolio allocations.[5]

[3] The survey targets the entire adult population (aged 18 and over) residing in participating countries. The survey aims for representativeness by age, gender, and region. Some sampling biases remain because recruitment is challenging, especially for adults aged 71+ and for less-educated individuals, largely due to the survey's online format. The ECB addresses these imbalances using statistical weighting to enhance representativeness across national populations.

[4] The CES is an incentivized survey with respondents receiving a gratuity with a relatively modest monetary value in recognition for their participation. These incentives signal the important value of the data supplied by respondents and strengthen the CES's overall quality by promoting high overall survey response rates, strong panel retention, and minimal skipping by participants of individual questions.

[5] Given the specificities of the CES survey, reported statistics might differ compared to surveys like the HFCS which feature a different offline survey mode (e.g. in person interviews), question wording and sampling methods (e.g. country coverage and oversampling of hard-to-reach subpopulations).

In this paper, we focus on the survey modules that provide detailed information on household portfolio allocations. Specifically, we use several special-purpose questions on households' balance sheets, administered in a fully harmonized manner during the survey pilot phase, and data collected through a dedicated 10-minute module on consumer finances. This module was initially added to the survey in November 2021. Since then, this topical module on consumer finances has been repeated in November each year, allowing us to draw on data through to November 2024. In addition, we use rich background information on individual socio-demographic characteristics, including concepts such as financial literacy and trust in others, collected in a one-time survey completed at recruitment. Unless otherwise noted, our analyses are based on the complete sample of eleven countries. As a robustness check, we examine whether including the five countries added in 2022 materially affects the results. When analyzing portfolio mobility, such as entry into or exit from the stock market, we adopt a 12-month horizon. For the initial group of six countries, this allows us to observe four transitions in portfolio holdings: from August 2020 to November 2021, and subsequently from each November onward. For the five additional countries, by contrast, only the last two transitions can be observed. Throughout our descriptive analysis of the data, we use sample weights provided with the survey data to ensure representativeness of the euro area population and we restrict our sample to adults aged between 18 to 71.

As shown in Table 1, the prevalence of direct stock ownership is 23%, whereas the combined prevalence of stocks and mutual funds is 34% throughout our sample period from 2020 to 2024. Note that focusing on stocks alone provides only a lower bound on total stockholding, because some investors also hold stocks through mutual funds. On the other hand, because the questionnaire does not distinguish among types of mutual funds, the combined investment in stocks and mutual funds constitutes an upper bound on total stockholding. For this reason, in the paper, we report results for both definitions (which we term narrow and broad stockholding).

More detailed evidence on stockholding is presented in Figure 1 for the initial group of six countries (including or excluding the five countries that joined the sample in 2022). We note that, for this initial group, both investment in directly held stocks and combined investment in directly held stocks and mutual funds declined from mid-2021 to November 2022, then increased thereafter, reaching higher levels in November 2024 than those observed in August

2020. This upward trend in risky financial investment is also evident among the five new entrants to the CES. Therefore, the overall trends remain consistent with the inclusion of the five additional countries in 2022, as shown by the close alignment of the series in the subsequent years.

When looking at risky investment patterns across the countries shown in Figure 2, we observe that only Greece deviates from the overall upward trend in participation starting in 2022. The highest participation levels are observed in Finland, Germany, and Belgium, where combined direct stockholding and mutual fund investments exceed 40%, whereas Greece has the lowest rates at around 20%. To assess whether the recent rise in stock market participation reflects a structural shift or mainly small-scale experimentation by new investors, we extend the analysis to the intensive margin of portfolio allocations. Our results show that despite the increase in participation since 2022, the average share of financial wealth invested in equities has remained broadly stable across countries and over time (see Appendix Figure A.1). Unconditional portfolio shares, that is, the average share of financial wealth invested in stocks and mutual funds, show little variation over the sample period. Likewise, conditional on participation, the share of wealth invested in equities remains relatively constant even among active investors.

Taken together, these findings indicate that the rise in participation documented in the main paper is driven mainly by entry at the extensive margin rather than by larger allocations of wealth into equities. In other words, the increase reflects the arrival of new investors with relatively small positions, rather than a broad-based increase in the intensity of equity exposure among existing investors. This pattern is consistent with the view that recent market entry has been facilitated by the expanding availability of digital trading platforms and low-cost brokerage services.

3. Stockholding and portfolio mobility

A long-standing body of literature, recently reviewed by Menkhoff and Westermann (2025), examines the different motives for household stock market participation. To link this prior literature with evidence from the CES, we begin by exploring respondents' motives for not investing in stocks or mutual funds. Figure 3 reports, for each income quartile, the average

share of non-investors who cite specific reasons for not participating in financial markets. In different rounds from 2021 to 2023, respondents were allowed to select multiple reasons for not participating in the stock market.[6]

The results illustrate economically meaningful patterns in household stock market participation. The most frequently cited reason, "not enough money to invest", is reported most often among households in the lowest income quartile, where more than half cite this constraint. This share declines steadily with income, reaching approximately 30% among households in the top income quartile. This gradient aligns with the participation cost literature (e.g., Haliassos and Bertaut, 1995; Vissing-Jørgensen, 2002), which argues that fixed costs of entering financial markets, such as account opening fees, information acquisition, and transaction costs, are proportionally higher for low-wealth or low-income households. When wealth levels are insufficient to offset these costs, optimal participation is zero, even if expected returns on equity are positive.

The second most frequently cited reason, "fear of risk in financial markets", rises steadily across income quartiles, from about 30% among the lowest income households to roughly 40% among the highest. This suggests that risk aversion remains a significant barrier even for wealthier households. The pattern may reflect not only differences in subjective risk tolerance but also variation in exposure to market volatility and past loss experiences (Guiso, Sapienza, and Zingales, 2008; Malmendier and Nagel, 2011).

Another frequently cited reason, "don't know how to invest", highlights the role of financial literacy and information costs. Roughly 20–30% of respondents across all income quartiles mention this as a barrier. Importantly, this response remains non-negligible even among higher-income households, underscoring that knowledge constraints (actual or perceived) are not purely a function of income but also of financial education and experience. Extensive empirical work has documented the strong positive association between financial literacy and stock market participation (Lusardi and Mitchell, 2011, 2014; Van Rooij et al., 2011). Incomplete knowledge about financial products increases both perceived and actual costs of participation, effectively operating as a psychological or informational fixed cost

[6] The question wording was held constant across waves to ensure full comparability: "*What are the main reasons why you and your household are currently not investing in stocks or mutual fund shares?*".

(Campbell, 2006).[7] The importance of high perceived entry costs and financial information as a barrier to entry into the stock market agrees with recent evidence on misconceptions among German households: "Participation is believed to require selecting "safe" stocks, avoiding "bad" ones, and timing the market through monitoring and frequent trading. This inflates perceived costs and deters participation." (Duraj et al., 2025, p. 1)

Other reported reasons include "saving for a large purchase" reflecting competing liquidity needs and the precautionary saving motive, which can crowd out investment in risky assets. The share citing "not enough time" increases across income quartiles, consistent with the hypothesis that time constraints and cognitive attention costs and information processing time can deter investment even when financial capacity is sufficient (Gennaioli et al., 2015; Filali et al., 2025). Finally, a substantial share of respondents cite "don't trust banks, mutual funds, or financial markets in general". This echoes the literature on trust and social capital as critical determinants of financial market participation. Households with low trust in financial institutions are consistently found to be less likely to hold risky assets, even after controlling for income, wealth, and financial literacy (e.g., Guiso et al., 2008; Almenberg and Dreber, 2015). Such attitudes may stem from personal experience of past crises, perceived opacity of financial products, or broader concerns about institutional reliability.

Overall, Figure 3 illustrates that barriers to equity participation vary across income groups. For lower-income households, liquidity and participation costs are the main barriers, whereas among higher-income households, risk perceptions, limited financial literacy, and trust issues are more prominent. These results support a substantial body of evidence indicating that reducing information costs, building trust, and increasing access to affordable investment options can significantly boost participation in financial markets across all income levels.

When analyzing cross-country patterns, the CES data confirm the robustness of these findings across the 11 euro area countries included in the survey (see Figure A.2 in the Appendix). Across all countries, "not enough money to invest" is the most frequently cited reason for not participating in equity markets. This reason is especially prominent in Finland, Greece, Portugal, Austria, and Italy. The second most common motive across all countries is

[7] Looking beyond equity market participation, Campbell and Ramadorai (2025) discuss more generally the complexity of the modern financial system and how this is problematic and especially for lower income and less well educated consumers.

"lack of trust in financial institutions or markets". The consistency of this response across national contexts suggests that a lack of consumer trust in the stock market is not solely attributable to the quality or transparency of domestic financial systems. This finding supports the research of Guiso, Sapienza, and Zingales (2008), who highlight the role of cultural and interpersonal trust, rather than institutional performance alone, in determining financial market participation. Risk aversion and financial knowledge also stand out as common barriers, with about 25-30% of respondents in most countries citing fear of financial market risk and lack of financial knowledge as reasons for not investing. Overall, these cross-country results indicate that low equity market participation stems from shared structural and behavioral barriers across Europe: limited resources, low trust, risk aversion, and insufficient financial information. The significance of these factors varies slightly across countries. The CES evidence supports the idea that improving trust, financial education, and perceptions of safety can be as crucial as addressing a lack of financial resources in increasing stock market participation across the euro area.

The CES also provides additional insights into households' investment behavior, particularly regarding shopping around for investment products and sources of financial advice (see Appendix Figure A.3). The data indicate that approximately 20% of respondents report spending no time at all comparing or searching for investment options. This lack of active searching when making investment or saving decisions suggests substantial inattention or inertia in household financial decision-making, consistent with evidence of limited cognitive resources and search frictions in retail investment markets. Regarding sources of financial information, around 30% of households rely primarily on professional advisors, such as financial intermediaries or bank representatives. In contrast, roughly 25% report using online or Internet-based sources, while around 20% obtain advice from their social circle, including family, friends, or acquaintances. Among investors, nearly 50% use mobile apps or the Internet to place trades, indicating the growing digitalization of consumer finance over recent years.

Taken together, these figures highlight the heterogeneity of information channels and the persistent role of interpersonal networks in shaping financial behavior, even in an environment with abundant online information. Reliance on informal sources has been linked in prior research to peer effects and the diffusion of financial knowledge (Hong et al., 2004). By contrast, professional advice can either reduce or reinforce informational asymmetries,

depending on the nature of the intermediary relationship. Overall, the evidence points to systematic differences in financial engagement and advice-seeking across households, reinforcing the view that information costs and social factors remain key determinants of investment participation.

3.1. Determinants of not investing in stocks

Table 2 presents marginal effects from pooled probit regressions explaining the probability that respondents cite a particular main reason for not investing in stocks or mutual funds. The dependent variables correspond to the six most important mutually non-exclusive motives: (1) lack of money, (2) high risk, (3) low trust, (4) lack of knowledge, (5) plans to buy durables, and (6) lack of time. Each specification includes demographic controls, income quartiles, an indicator for liquidity constraints (defined as being unable to generate one monthly salary from liquid wealth), country, and time fixed effects.

Household income exhibits strong and systematic gradients. Compared with the lowest income quartile, higher-income households are progressively less likely to report "lack of money", and more likely to cite "high risk" as a reason for non-investment. For example, the marginal effect for the top quartile is -16 percentage points for "lack of money" and 7 points for "high risk". The liquidity variable plays a strong role across all models. For instance, liquidity-constrained households are 28 percentage points more likely to report "lack of money".

Relative to younger adults (the omitted group, aged 18–35), older respondents are substantially more likely to report "lack of money" as a reason for non-investment. The probability rises by 7 percentage points for those aged 36-50, 15 points for those aged 51–65, and 17 points for those over 65. This pattern may reflect lower risk tolerance, accumulated negative market experiences, or declining labor income among older households. At the same time, older respondents are significantly less likely to cite "lack of knowledge" or "lack of time", with marginal effects as large as -21 and -10 percentage points, respectively. This suggests that while older individuals may feel financially constrained, they do not perceive informational or time barriers as binding, possibly due to greater financial experience.

The effect of "low trust" increases moderately with age, consistent with the hypothesis that trust in financial markets declines over the life cycle, potentially due to greater exposure to

financial crises or scandals. Men differ systematically from women in their stated motives. Male respondents are less likely to cite "lack of money" and "high risk", and more likely to mention "low trust" and "lack of time". The gender gap in perceived risk and liquidity constraints aligns with prior evidence that women exhibit higher risk aversion (Croson and Gneezy, 2009) and lower self-assessed financial readiness (Aristei and Gallo, 2022). Conversely, men's higher likelihood of citing time constraints may be consistent with greater labor market attachment and/or self-perceived opportunity costs of financial decision-making.

Including country dummies reveals systematic national differences. Respondents in Finland, Greece, and Portugal are notably more likely to report "lack of money" as a constraint. By contrast, those in the Netherlands are less likely to cite liquidity constraints but more likely to mention "low trust" and "lack of knowledge". Trust-related barriers are particularly salient in southern European countries (Spain, Italy, Greece, Portugal) and in Austria, suggesting cultural and institutional influences consistent with earlier evidence on cross-country trust disparities.

Overall, the results show that demographic, economic, and attitudinal factors jointly shape the motives for non-participation in equity markets. Liquidity constraints and low income are most common among younger and lower income households, while older respondents place more emphasis on lack of financial resources and trust. Men and more educated individuals cite risk and time constraints, and cross-country patterns point to institutional and cultural differences in financial attitudes. The findings support a multifactor framework in which financial inclusion policies must address not only resource constraints and financial literacy, but also behavioral barriers (including trust and perceived risk) to effectively broaden participation in equity markets.

3.2. Mobility rates

Panel data offer an opportunity to study how euro area investors adjust their portfolios in response to both aggregate and individual-level shocks, and how these adjustments are mediated by households' financial circumstances and other characteristics. Previous evidence on portfolio rebalancing in response to real and financial shocks is mixed, highlighting considerable heterogeneity among investors.

In summarizing the empirical literature, Guiso and Sodini (2013) conclude that households follow contrarian strategies on average, both at the individual stock level and when rebalancing the share of financial wealth invested in risky assets. Calvet et al. (2009) study the dynamics of individual portfolios using a data set containing the disaggregated wealth of all households in Sweden and find that wealthy and educated investors with better diversified portfolios tend to rebalance more actively. They also find that households are more likely to sell directly held stocks and even exit from the stock market if those stocks have performed well. Bilias et al. (2010), using data on retail investors from two U.S. surveys, the Panel Study of Income Dynamics and the Survey of Consumer Finances, find that retail investors rebalance infrequently and are often passive, particularly in managing their retirement accounts.

The 2008 financial crisis and the 2020 pandemic provided opportunities to study retail investors' reactions to large shocks. For instance, Altig et al. (2020) examine several measures of economic uncertainty before and during the COVID-19 pandemic and document substantial increases in uncertainty in response to the pandemic. Bucher-Koenen and Ziegelmeyer (2014) argue that during a stock market downturn, households with low financial literacy are more likely to sell assets that have lost value, and their losses are likely to be permanent because these households do not participate in the market's subsequent recovery. Hanspal et al. (2021) find that approximately 50 percent of U.S. stockholders at the onset of the crisis made active adjustments to their stock investments since the beginning of the March 2020 stock market crash, with roughly equal shares of respondents increasing and decreasing their stock holdings in their overall financial wealth. Menkhoff and Schröder (2022), using a German survey conducted between April and June 2020, find little evidence of portfolio rebalancing in April 2020, whereas in May investors began buying heavily, in parallel with the market recovery.[8] Young, educated, high-income, and risk-tolerant investors were net buyers throughout and therefore benefited more from the stock market recovery. In contrast, older individuals and individuals affected by adverse liquidity shocks from COVID-19 were net sellers.

Because the CES provides panel data, we can track households' transitions into and out of risky financial assets over the past years. We thus calculate entry and exit rates from one

[8] Using an information experiment in the CES, Coibion et al. (2024) show that an exogenous increase in macroeconomic uncertainty leads households to adjust their portfolios by reducing their likelihood of holding mutual funds. Similarly, focusing on inflation uncertainty, Georgarakos et al. (2024) find that higher uncertainty about inflation prompts households to shift their portfolios away from risky assets and toward safer ones.

wave to the next, for stocks and mutual funds combined. Entry and exit rate probabilities are useful statistics because they can be directly linked to investor behavior. In particular, low entry and exit probabilities suggest portfolio inertia, a common finding in empirical studies of retail investors. Over time, entry and exit probabilities can reveal whether "buy and hold" strategies are becoming more or less common among investors.

Furthermore, low entry probabilities can point to the presence of significant structural barriers or informational frictions that prevent households from participating. Comparing exit probabilities across periods helps us understand how investors respond to shocks. For instance, a higher exit rate following a major macroeconomic shock would indicate heightened concern, prompting investors to exit the market.

In our setting, we construct a simple 2×2 transition matrix in which each element P_{ij}represents the probability of owning or not owning stocks in periods t and $t+1$. The matrix contains four entries: P_{00} is the probability of not owning stocks in either period; $P_{01}$the probability of moving from non-ownership in t to ownership in $t+1$ (the entry rate); P_{10} the probability of moving from ownership in t to non-ownership in $t+1$ (the exit rate); and P_{11} the probability of owning stocks in both periods. By construction, the rows of the matrix sum to one, so $P_{00}+P_{01}=1$ and $P_{10}+P_{11}=1$.

Since our panel covers the 2020–24 period, we can construct four mobility (transition) matrices.[9] From these short-run matrices, we can derive the implied steady-state distribution, starting from any initial allocation of households across states. The limiting distribution of non-stockholders and stockholders, $\pi=(\pi_0,\pi_1)$, is given by:

$$\pi_0=\frac{P_{10}}{P_{01}+P_{10}},\pi_1=\frac{P_{01}}{P_{01}+P_{10}}.$$

The steady states reflect the long-run proportion of households that would hold (or not hold) stocks if the observed entry and exit rates remained constant over time. A high exit probability relative to entry implies a low steady-state share of stockholders. In contrast, strong

[9] A summary measure of a mobility matrix P is the Shorrocks index. For a 2×2 matrix, it is given by $S(P)=2-\text{trace}(P)=2-(P_{00}+P_{11})$, where $S=0$ indicates no mobility and $S=1$ indicates perfect mobility. In the 2×2 case, the Shorrocks index is also equal to the long-run probability of switching states between consecutive periods, $S=\pi_0P_{01}+\pi_1P_{10}$.

entry rates relative to exit rates lead to a higher long-run participation rate. Comparing these steady-state values with actual CES participation levels, therefore, provides a useful benchmark for assessing whether stock market participation is expanding, contracting, or broadly stable over the period.

Figures 4 and 5 report, respectively, entry (P_{01}) and exit rates (P_{10}) for stocks and mutual funds over the sample period, showing that the inclusion of five additional countries in 2022 does not alter the overall dynamics. Table 3 summarizes short-run transition probabilities and long-run steady-state ownership rates for stocks, mutual funds (MF), and the combined category "stocks or MF" over five consecutive yearly transitions. The table shows that most households keep the same investment status from one year to the next. Non-owners are especially persistent, with over 90% remaining out of the market each year. Entry rates into stocks and mutual funds are between 6 and 10%, while exit rates are generally about 25-35%. The 2020–21 transition is particularly interesting, in view of the pandemic shock. It shows relatively high entry into both stocks and mutual funds. However, the subsequent 2021–22 period exhibits the highest exit rates, suggesting that many new entrants quickly withdrew.

In the last year of our sample, the implied long-run steady states indicate participation levels of 23% for stocks, 29% for mutual funds, and 35% combining both assets. Participation increased in the early pandemic period but proved fragile, with many new entrants exiting soon after. Overall, the results indicate high persistence in non-participation and modest, asymmetric mobility that keeps long-run risky-asset ownership consistently below 30% for stocks and 40% for stocks and mutual funds.

In the CES, respondents were also asked about when they first invested in stocks and mutual funds. Figure 6 plots, for each country, the cumulative share of consumers who entered the stock and mutual fund market for the first time in 2020 or after. Thus, the figure allows the comparison of recent market participation rates across countries. The highest entry rates are observed in the Netherlands, Austria, and Finland, each at approximately 15 percent, whereas Greece (slightly above 5 percent) and France (around 8 percent) exhibit the lowest rates. Overall, the figure shows that roughly 10 percent of the total population entered the stock market for the first time after 2020, implying that about one third of current stockholders are "new" investors who joined the market within the past five years. This points to the presence of a sizable cohort whose investment experience is largely shaped by post-2020 market

conditions. In the next section, we examine the characteristics of these new investors in more detail.

4. The profile of European stockholders

Understanding the socioeconomic profile of European investors is essential for policymakers and financial practitioners, particularly those interested in expanding the stockholding base. We focus on three characteristics: investors' education, resources, and age, and summarize these patterns in each country, averaging the data over the entire available time span of the CES. The descriptive analysis is also helpful for understanding broad data patterns in the new ECB survey and for comparing them with those observed in other surveys, such as the ECB Household Finance and Consumption Survey and the US Survey of Consumer Finances.

A robust finding in recent household portfolio research is that education is positively correlated with stock market participation, even after controlling for other factors such as income and employment status. This positive correlation is also clearly visible in our data. Specifically, in Figure 7, we distinguish between three educational categories, namely less than high school, completed secondary education, and having a college degree, and note that for each of the countries of our sample, the household participation in direct and total stockholding increases considerably with education. For instance, in Germany, approximately one-third of college graduates are direct stockholders (approximately 50% when including mutual funds). In contrast, fewer than 20% (about 27% when including mutual funds) of those with less than a high school degree participate in the stock market. In France, the corresponding figures are 26% and 13%, respectively (32% and 15% when including mutual funds). The most dramatic difference among education groups is observed in the Netherlands, where only 9% of those without a high school degree are direct stockholders, while among college graduates, participation is 29% (15% and 44%, respectively, including mutual funds).

The propensity of European households to invest in stocks is likely to be influenced not only by education, which indicates higher earnings prospects and greater financial sophistication, but also by their financial resources (income and financial wealth). Figure 8 shows how stock market participation varies across households in the income distribution. Households are grouped according to the decile in the income distribution to which they belong,

and participation rates among households in each decile are plotted. The clear picture that emerges is that, across all countries, higher-income households are more likely to invest in stocks, as participation rates increase significantly faster from the third or fourth decile to the top one. Notable country differences in overall participation rates arise from differences in stockholding in the lowest income decile: in Greece, Italy, Portugal, and Spain, stockholding is only about 10% in the lowest income decile, whereas in Germany and Belgium it is considerably higher. While low participation rates among the poor have generally been interpreted as evidence of transaction costs, these costs are unlikely to explain why a considerable number of relatively wealthy individuals (e.g., those above the ninth income decile) do not invest in stocks or mutual funds.

In Appendix Figure A.4, we plot stockholding by financial wealth deciles. A clear pattern across all countries is that participation in stockholding, direct or total, is strongly related to financial wealth, with large differences in participation between households in the lowest wealth deciles and those at the top of the wealth distribution, with participation at or above 70% in virtually all countries we consider. Furthermore, the wealth-participation profiles are steeper than the income for each of the countries considered. In our regression analysis, we rely on the income distribution to minimize missing wealth data in earlier waves of the survey. However, the results are qualitatively similar when income is replaced with financial wealth.

The third demographic characteristic, examined in Figure 9, is the consumer's age. Stock market participation follows a hump-shaped pattern in Germany and France, whereas in Italy and Belgium, it remains relatively flat until retirement and is more common among older households. In Spain, participation declines after retirement, while in the Netherlands it remains broadly stable across age groups. Including mutual funds does not alter these patterns. Such cross-country differences in the age profile of participation may also point to a role for more cultural and institutional factors that impact on portfolio choice.

The relationship between age and participation has been linked to investors' investment horizons (younger households have a longer investment horizon), information costs (the young are less likely to have received information regarding how to invest in stocks), and resources (the young have more limited resources, and for them, entry costs play a more important role). However, when interpreting the age profiles in Figure 9, one should also keep in mind that it is difficult to distinguish a pure age profile from cohort effects. That is, it might well be that older

German or French households in Figure 9 invest less in stocks because they belong to a different generation, and not because of a genuine age effect.

To summarize the descriptive evidence, the CES largely confirms findings from previous surveys. Across all countries, stock market participation is strongly correlated with economic resources, particularly income and financial wealth. Households at the bottom of income and wealth distributions rarely invest in stocks, either directly or through mutual funds, consistent with the view that entry costs and minimum investment requirements constrain participation. We also find a strong positive correlation between education and stockholding. Notably, even among the wealthiest households, including those in the top decile, many do not invest in stocks, suggesting that information costs and other non-financial factors play an important role in shaping participation alongside resource constraints.

5. Estimation results for stock ownership, exit, and entry rates

In this section, we analyze associations between household demographic and economic characteristics and ownership of stocks and mutual funds. We then turn to the analysis of first-time ownership during and following the pandemic crisis. Finally, we examine associations between household characteristics and decisions to enter and exit the market for risky financial assets.

The variables we will use to analyze stockholding include demographic variables (age, gender, and education), economic resources (income and liquidity), and indicators of risk aversion, trust, and financial literacy. The sample statistics for the control variables are reported in Table 1. The average age of the sample respondents is about 50 years, while 47% are male. With respect to education, 12% have only primary education, 33% secondary education, and 55% at least some tertiary education. When respondents are asked whether they have sufficient resources to make an unexpected payment equal to one month of income, 70% report having such liquidity. Respondents are also asked about the compensation they would require to take an income gamble, and 29% report that they would require little or no compensation, indicating

relatively high risk tolerance. They are also asked three standard questions on financial literacy (as in Lusardi and Mitchell, 2014), and approximately 47% answer two or three correctly.[10]

5.1. Ownership of stocks and mutual funds

We present marginal effects from probit regressions on ownership of stocks and mutual funds in Table 4. The results highlight several robust patterns in stock market participation among euro area households. Participation declines markedly with age: relative to individuals under 36, all older groups are significantly less likely to hold stocks, though this age gradient weakens when mutual funds are included. Men are substantially more likely than women to participate, with gender gaps of 7.6 percentage points for stocks and 5.2 percentage points for stocks or mutual funds. Higher education is positively associated with participation, particularly at the tertiary level. Income exhibits a steep gradient: households in the top income quartile are 14 percentage points more likely to hold stocks than those in the bottom quartile. Liquidity constraints matter even more, as liquid households are 13-14 percentage points more likely to invest in stocks. Trust strongly predicts participation, while a high tolerance for financial risk has no significant impact in these specifications. Financial literacy is a robust correlate, especially for the broader category of stocks or mutual funds.

Country differences remain substantial even after controlling for household characteristics. Participation is notably higher in Belgium, Germany, Austria, and especially Finland, while it is lower in the Netherlands and Portugal. Spain and Italy sit close to France, the reference category, with modest differences depending on the asset definition. All of the above results remain robust when additional controls (e.g., respondents' investment horizons) are included or when income quartile indicators are replaced with wealth quartile dummies.

5.2. First-time ownership of stocks and mutual funds

We turn now to studying the association between household characteristics and the timing of first-time entry into the stock market. Specifically, Table 5 shows the marginal effects from a multinomial probit model that distinguishes between long-standing investors (those who

[10] Given that the CES aims to have a sample representative of the overall population, calibrated sample weights make the weighted number of respondents equal to 28% of the total for Germany, 20% in Italy and France, 16% for Spain, 6% for the Netherlands, 4% for Belgium and less than 2% for the other countries

started investing before 2020), households that began investing only after 2020, and households that are out of the market at the time of the survey. This three-way classification enables us to identify which characteristics are associated explicitly with *new* market entrants.[11]

Relative to younger adults, all older groups are significantly more likely to be non-investors and substantially less likely to have begun investing since 2020. For example, individuals aged 65+ are 13 percentage points less likely to be first-time owners. These results confirm that recent entry into financial markets is highly concentrated among younger households. Men are considerably less likely to be non-investors and more likely to fall into both investor categories, although the marginal effect is more substantial for long-standing investors. Higher education (especially tertiary education) strongly increases the probability of being a long-term investor, but plays essentially no role for new entrants. High-income households are far less likely to be non-investors and more likely to have long-established investment positions, though income plays a modest role in predicting new entry.

Liquidity constraints reduce the likelihood of stock market participation, but liquidity plays a much larger role for long-term investors (who are 13.6 percentage points more likely to hold stocks when liquid) than for post-2020 entrants, for whom the effect is only 3.9 percentage points. Trust increases the probability of investing both before and after 2020. By contrast, financial literacy has a substantially stronger impact among long-term investors, raising participation by 11.1 percentage points compared with only 1.6 percentage points for recent entrants.[12]

These results suggest that households entering the stock market after the pandemic more closely resemble non-investors, exhibiting lower levels of education, income, and financial literacy than longer standing participants. One possible explanation is that the exceptional conditions of the pandemic (higher savings due to limited consumption opportunities, increased free time during lockdowns or furloughs, greater time spent online and the sharp market rebound in the second half of 2020) made risky assets more appealing to households that might not have entered the market under normal circumstances.

[11] This formulation avoids the problem of examining first time stockholding in the selected sample of all stock investors. Instead, the multinomial probit model is estimated in the whole sample.
[12] Country coefficients reveal large cross-national heterogeneity. Finland, Germany, Austria, and Belgium show higher probabilities of being long-standing or new investors relative to France (the base). The wave dummies show that the probability of becoming a new investor rises noticeably after 2021.

5.3. Entry and exit rates

We then examine the determinants of entry into stock and mutual fund ownership among households that were non-investors in the previous wave (hence, estimation is conducted on a selected sample that is not necessarily population representative). Our results (shown as marginal effects in Table 6) indicate that older age groups are significantly less likely to enter the market than the under-36 group. The effects are sizeable: individuals aged 65+ are roughly 2.8–3.7 percentage points less likely to start investing. This confirms that the flow of new investors is overwhelmingly concentrated among younger households. Men are significantly more likely to enter than women, with estimates ranging from 1.7 to 2.2 percentage points. Tertiary education raises the likelihood of entry, while secondary education does not differ from the base group. Income shows a steep gradient: compared with the lowest quartile, households in the top income quartile are 5.4–6.7 percentage points more likely to start investing. Liquidity constraints also matter, as households without liquidity constraints are 3.4–5.3 percentage points more likely to enter. Risk tolerance significantly increases entry, especially for the broader "stocks or mutual funds" measure, while trust positively predicts entry into both asset types, and financial literacy has a strong positive effect, particularly for mutual funds.

There is once more a wide variation across countries, even after controlling for household characteristics. For example, Germany and Finland exhibit significantly higher entry into mutual funds, while Spain, the Netherlands, and Portugal exhibit lower entry probabilities for stocks. Entry probabilities vary across waves in a pattern consistent with financial market developments. Entry was higher in mid-2021, a period of strong market performance, fell sharply in late 2022 and 2023, consistent with heightened uncertainty, inflation shocks, and tighter financial conditions, and partially rebounded for stocks in 2024. However, it remains low for mutual funds.

Table 7 examines which types of households are most likely to exit stock or mutual fund ownership among investors in the previous wave. The results show that exits are least common among experienced, better-informed, and financially secure households. Exit probabilities decline significantly with age. Individuals aged 65+ are 7.0–7.8 percentage points less likely to exit than the youngest group. This likely reflects more stable, long-term investment strategies among older investors and lower sensitivity to short-term fluctuations. Men have substantially lower exit probabilities, especially for stocks. Education is negatively associated with this

ownership transition: both secondary and tertiary education reduce exit risks, with tertiary education associated with the largest reductions.

Income plays a modest, albeit somewhat mixed, role, whereas liquidity is a powerful predictor. Liquid households are 18–19 percentage points less likely to exit, by far the largest marginal effect in the table. Liquidity constraints, therefore, appear to be a major driver of the sale of risky assets, consistent with the need to free up cash during shocks. A striking finding is that high risk tolerance increases the probability of exit (by 2–3 percentage points), from mutual funds and stocks suggesting that risk-seeking households may also trade more actively or react more strongly to market swings. High financial literacy strongly reduces exit by 11–12 percentage points, indicating that financially literate investors are more stable participants and less prone to withdraw during volatility.

All countries (except Greece in the stock-only specification) exhibit significantly lower exit probabilities than France, the reference country. Finland shows the lowest exit rates, followed by the Netherlands, Austria, Germany, and Spain. Exit probabilities vary across time in ways consistent with market conditions. In November 2021, we observed an exit spike, possibly reflecting volatility after the strong post-pandemic rally. In November 2022, exits remain elevated for stocks, consistent with inflation shocks and tightening financial conditions, while in 2023–24 exit rates normalize and, in some cases, fall, especially for mutual funds, suggesting a return to more stable behavior.

Overall, Table 7 shows that sustained participation in risky financial assets is positively associated with age, education, liquidity, and financial literacy. In contrast, younger, less educated, liquidity-constrained, and more risk-seeking households are more likely to exit, pointing to more short-lived and less stable engagement with financial markets.

6. Investments in crypto assets

Crypto assets were initially designed to facilitate retail payments (Nakamoto, 2008), but they have increasingly been adopted as an investment vehicle. In this Section, we complement the analysis of stockholding by showing that, in the euro area, crypto asset adoption is far from insignificant and by documenting novel stylized facts concerning the prevalence, evolution, and socio-demographic characteristics of investors.

Ownership rates in the CES data for the euro area have fluctuated between 8 and 10 percent since the early 2020s (Appendix Figure A.5, panel A). When asked why they hold crypto assets, respondents overwhelmingly cite investment motives as the primary reason, whereas transactional or payment-related use plays only a marginal role.[13] CES data indicate that euro area consumers primarily engage with crypto assets as speculative investments rather than as a stable, long-term portfolio strategy. The composition and behavior of crypto investors further emphasize the speculative nature of household participation. A large share of crypto holders surveyed in a special-purpose section of the CES in August 2022 reported entering the market in 2020, coinciding with the height of the pandemic-era bull market (see Appendix Figure A.5, panel B). This result aligns with findings by Weber et al. (2023), which indicate that market conditions and anticipated crypto returns may strongly influence household crypto participation. Reported investment amounts are generally small (panel C), suggesting that most retail engagement likely reflects experimentation or gambling-like behavior rather than systematic long-term investing.

Among non-investors, a lack of trust emerges as the dominant barrier to adoption (panel D). This likely reflects concerns about the underlying technology, the security of trading platforms, and the perceived absence of regulatory safeguards. While volatility, risk perceptions, and limited knowledge also play a role, they appear secondary relative to trust-related concerns. This contrasts with more traditional financial products, such as stocks and mutual funds, where our data indicate that resource constraints and complexity tend to be more prominent barriers.

To better understand these patterns, we estimate pooled probit models of crypto ownership, entry, and exit rates (Table 8). First, we examine basic socio-demographic characteristics such as age, gender, education, and income, which previous studies have identified as important factors related to crypto adoption (e.g., Stix, 2021). The average marginal effects in Table 8 show a strong negative association between crypto ownership and age, likely reflecting that crypto assets are predominantly available through fintech institutions and mobile investment applications. Compared with individuals aged 35 and under, those aged

[13] This result corroborates recent evidence by Fessler and Weber (2025) for Austria. Consistent with their findings, we show that crypto assets are primarily held as part of households' investment portfolios rather than being used as a means of payment.

36–50 are approximately 8 percentage points less likely to own crypto assets, and the gap increases to approximately 14 percentage points for those aged 51 and above. These effects are significant relative to the baseline ownership rate of 11.5 percent, confirming that crypto adoption primarily involves younger investors, consistent with findings from the United States (Weber et al., 2023). Gender differences are also notable. Men are considerably more likely than women (by 5.5 percentage points) to own crypto and to plan future purchases, aligning with recent research by Chen et al. (2023) on the 'fintech gender gap', as well as studies indicating that crypto investors are disproportionately young males with higher risk tolerance (Hackethal et al., 2022; Weber et al., 2023).[14]

Other socioeconomic variables, by contrast, display only moderate associations. Higher income and education are positively related to ownership, and not being liquidity-constrained increases the likelihood of holding crypto assets by about 3.4 percentage points. Individuals with higher risk tolerance and greater trust are also more likely to participate, consistent with evidence for the United States reported by Auer and Tercero-Lucas (2022). Financial literacy shows only a modest positive association with crypto ownership, suggesting that these assets are perceived as having lower entry costs than traditional instruments such as stocks. In particular, the weak relationship with financial knowledge indicates that crypto participation involves lower perceived cognitive barriers compared with equity market entry.

The panel data from the CES allows us to distinguish between households entering and exiting crypto markets. Entry into crypto markets is heavily concentrated among the young and male (Table 8, column 2). Individuals with high financial risk tolerance are significantly more likely to enter or exit the crypto market. Additionally, consumers who report having liquidity are much less likely to exit. Notably, consumers with higher financial literacy have lower exit rates (-11.7 percentage points), indicating more stable ownership, consistent with a buy-and-hold motive.

We next examine the joint distribution of crypto and stock ownership to assess how crypto participation relates to broader portfolio allocation decisions (see Appendix Table B.1). The multinomial probit estimates distinguish between four portfolio states for consumers' risky

[14] For the euro area, a recent study by Zamora-Pérez (2026) reports similar patterns across a wider range of countries, suggesting that these findings are broadly applicable as stylized facts in global crypto ownership.

asset holdings: holding neither asset, holding stocks or mutual funds only, holding both assets, and holding only crypto. The results indicate substantial overlap between crypto investors and stock market participants, while also revealing important heterogeneity across groups. The distribution of investment choices also reveals that crypto-only participation remains comparatively limited with less than 3 percent of consumers belonging to this group. In particular, households holding both asset classes resemble traditional stock investors in terms of income, liquidity, and financial literacy, whereas crypto-only investors are more concentrated among younger and more risk-tolerant individuals.

Consistent evidence emerges from a bivariate probit model of joint ownership (see Appendix Figure A.6), which shows that characteristics associated with stockholding also increase the likelihood of holding crypto assets. At the same time, the results for the crypto-only state highlight that a subset of households participates in crypto markets outside standard portfolio investment patterns.

Finally, we relate crypto ownership to stock market entry (see Appendix Figure A.7). Distinguishing between households holding both assets and those holding crypto only, we find that crypto participation, particularly when combined with stockholding, is more prevalent among households that entered equity markets during and after the pandemic. This suggests that crypto investment and stock market participation often emerge jointly among newer cohorts of retail investors.

Taken together, our findings suggest that crypto adoption is largely driven by speculative motives, with investors entering and exiting the market through relatively small positions. Crypto assets appear to extend participation along the risky asset margin rather than constituting a distinct participation margin. Ownership is concentrated among specific subgroups, namely among younger, more risk-tolerant, and predominantly male individuals. Among non-participants, lack of trust and low risk tolerance are the primary barriers to entry.

7. Summary

This paper uses newly available high-frequency panel data from the ECB Consumer Expectations Survey to provide a comprehensive, up-to-date portrait of stockholding and participation in risky assets across eleven euro area countries. The CES offers unique advantages over existing data sources: full cross-country comparability, harmonized definitions of financial assets, and a panel structure that allows us to study market entry, exit, and the evolution of household portfolios. Three main findings emerge.

First, we document substantial heterogeneity in the reasons households refrain from investing in risky assets. Liquidity constraints are most relevant among lower-income households, while risk aversion, low trust, and limited financial knowledge are prevalent across the entire income distribution. These findings confirm well-established participation frictions but also highlight the central role of behavioral barriers (such as lack of trust and informational and cognitive frictions) that persist even among households with sufficient resources. Cross-country patterns suggest that these obstacles are structural rather than country-specific, underscoring the need for Europe-wide efforts to build financial capability and strengthen trust in financial markets.

Second, the CES panel enables a novel characterization of portfolio mobility in Europe. We show that roughly 10 percent of non-owners enter the stock market each year, while exit rates among stockholders hover around 20–30 percent. These flows largely offset each other, producing a steady-state participation rate that remains below 40 percent and revealing that non-participation remains highly persistent. The early pandemic period (2020-21) generated a notable wave of new investors, but much of this entry proved fragile, with many households exiting shortly thereafter. Newcomers also differ systematically from longer-standing investors: they are younger, have lower education, income, and financial literacy, and exhibit lower risk tolerance. This shift in the composition of market entrants suggests that exceptional economic conditions, such as increased savings, reduced consumption opportunities, and heightened market visibility, temporarily attracted households that might not have entered under normal conditions.

Third, our results highlight that Europe's financial landscape is evolving not only in traditional assets but also through rapidly changing engagement with crypto assets. Crypto

ownership, ranging between 8 and 10 percent, has become increasingly relevant for younger, more risk-tolerant households. However, crypto adoption is shaped by distinct barriers, with lack of trust emerging as the main deterrent among non-investors. At the same time, participation in crypto is driven by speculative motives, with investors typically holding small positions. Compared with equity markets, crypto markets exhibit even higher mobility, with frequent entry and exit and limited evidence of stable, long-term participation.

These findings carry important implications for policy and for Europe's ambition to deepen its capital markets. The persistence of low and uneven stock market participation, alongside expanding digital access and the emergence of new investor cohorts, suggest that resource constraints, limited financial literacy, and trust deficits remain significant barriers. For a European Capital Markets Union to succeed, broadening the retail investor base will require coordinated policy measures to reduce informational frictions, enhance transparency, and build confidence in financial intermediaries. Strengthening financial education, expanding access to low-cost, diversified investment products, implementing regulatory reforms, and improving communication to consumers about risks and long-run returns may all help lower entry costs and mitigate these obstacles.

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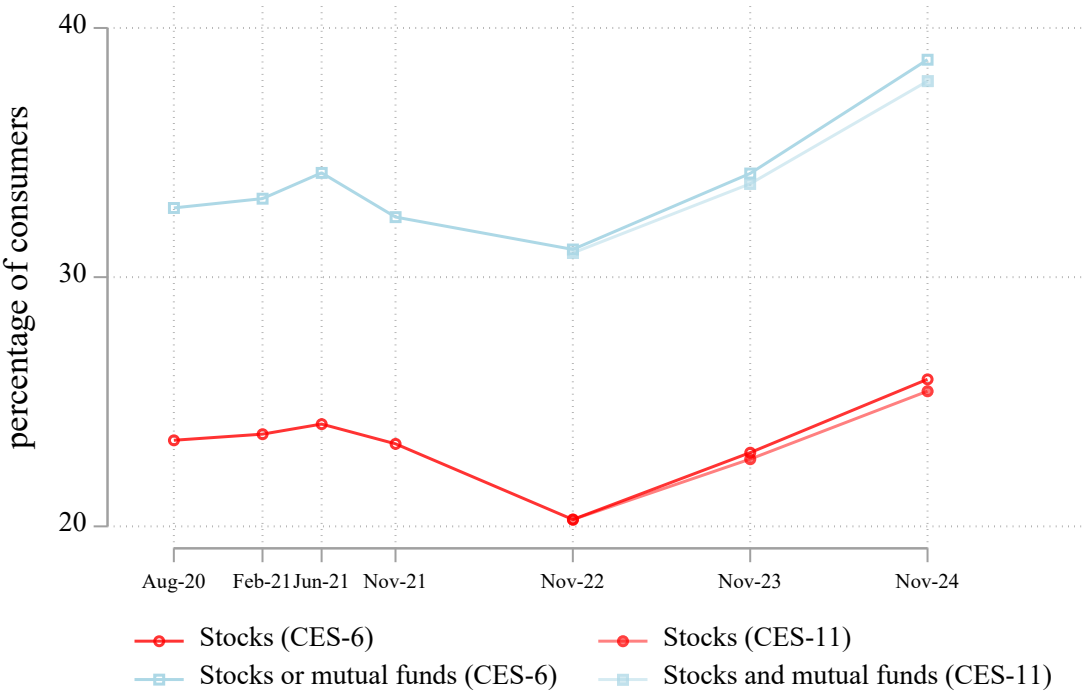
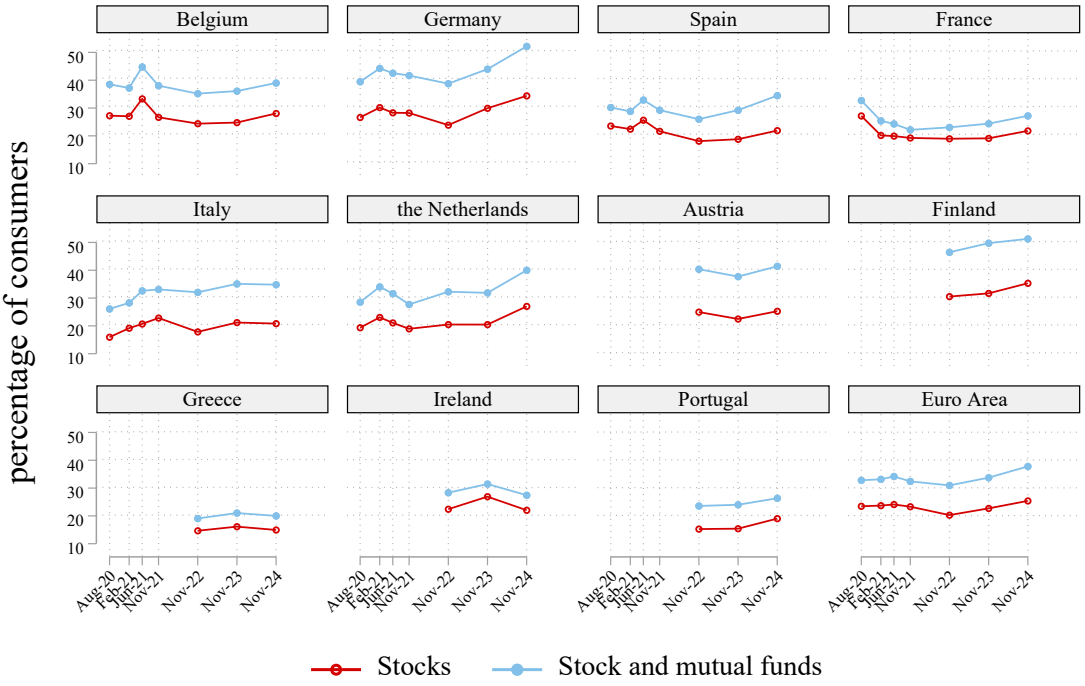
Figures

Figure 1. Stock market and mutual funds participation in the euro area



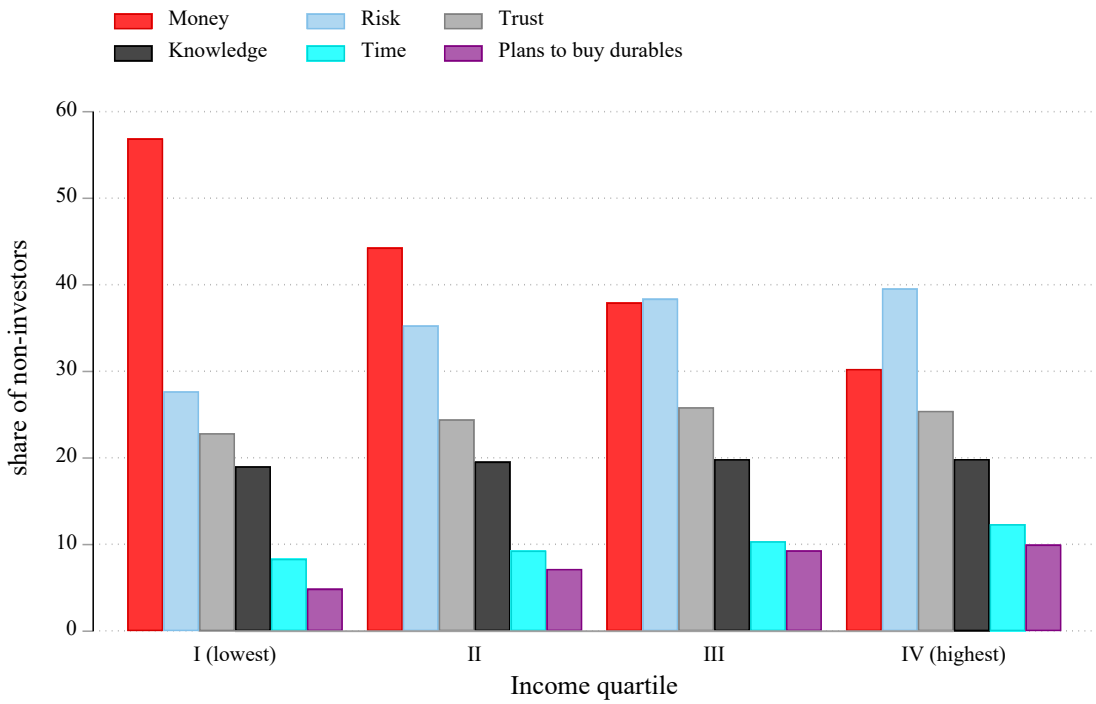
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample includes CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024, covering the six initial CES countries (Belgium, Germany, France, the Netherlands, Spain, and Italy) as well as the newly added countries from 2022 onwards (Ireland, Greece, Austria, Portugal, and Finland). The chart shows the share of consumers holding stocks (or private shares) and stocks (or private shares) and mutual funds (including ETFs).

Figure 2. Participation over time, by country



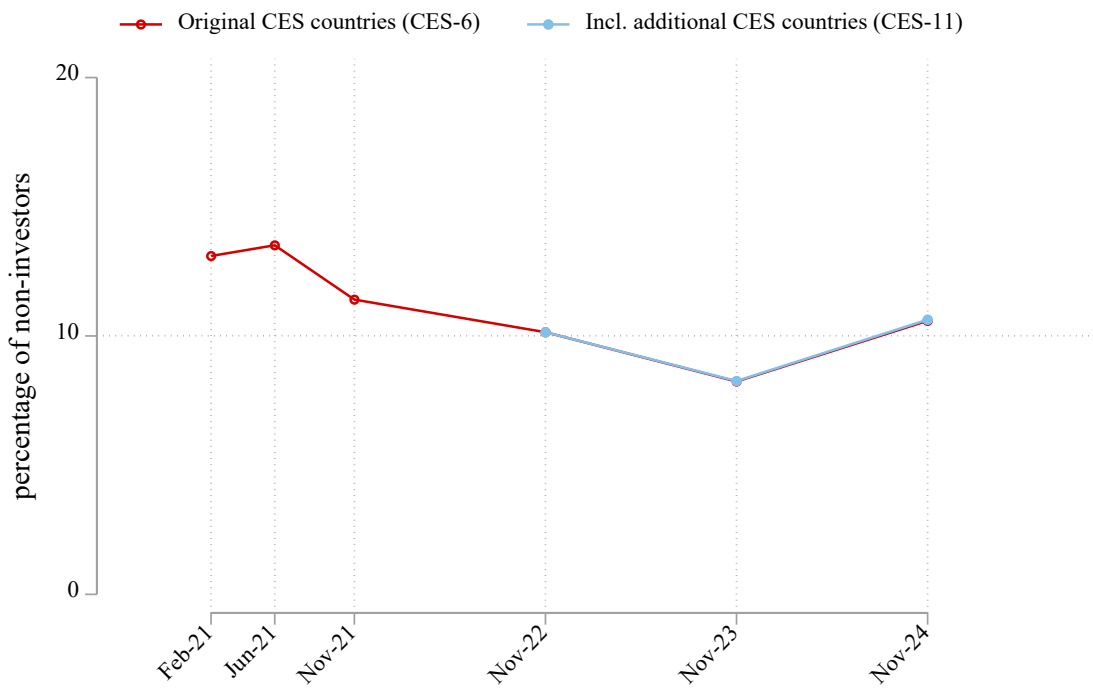
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample includes the CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024. Coverage varies for the new countries added in 2022 (see notes in Figure 1). The chart shows the share of consumers holding stocks (or private shares) and stocks (or private shares) and mutual funds (including ETFs).

Figure 3. Motives for not investing in stocks



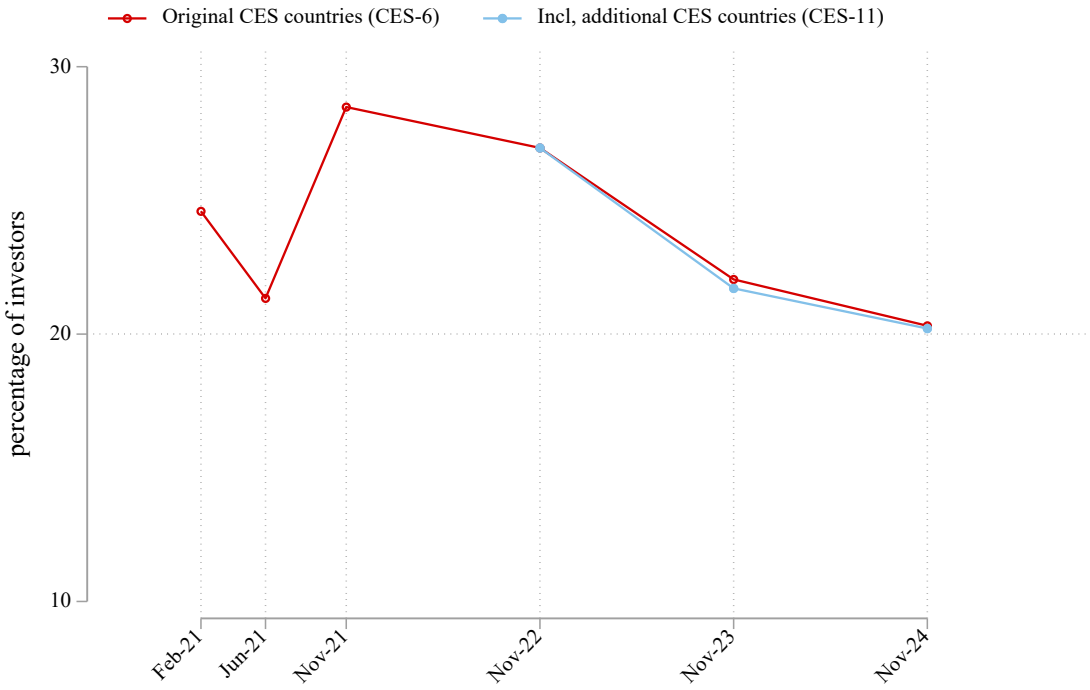
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample includes CES waves from November 2021, November 2022, and November 2023. Data from 2021 covers only the original six CES countries. The chart shows the average share of non-investors in each income quartile who report a specific reason (multiple responses allowed).

Figure 4. Entry rates for stocks and mutual funds



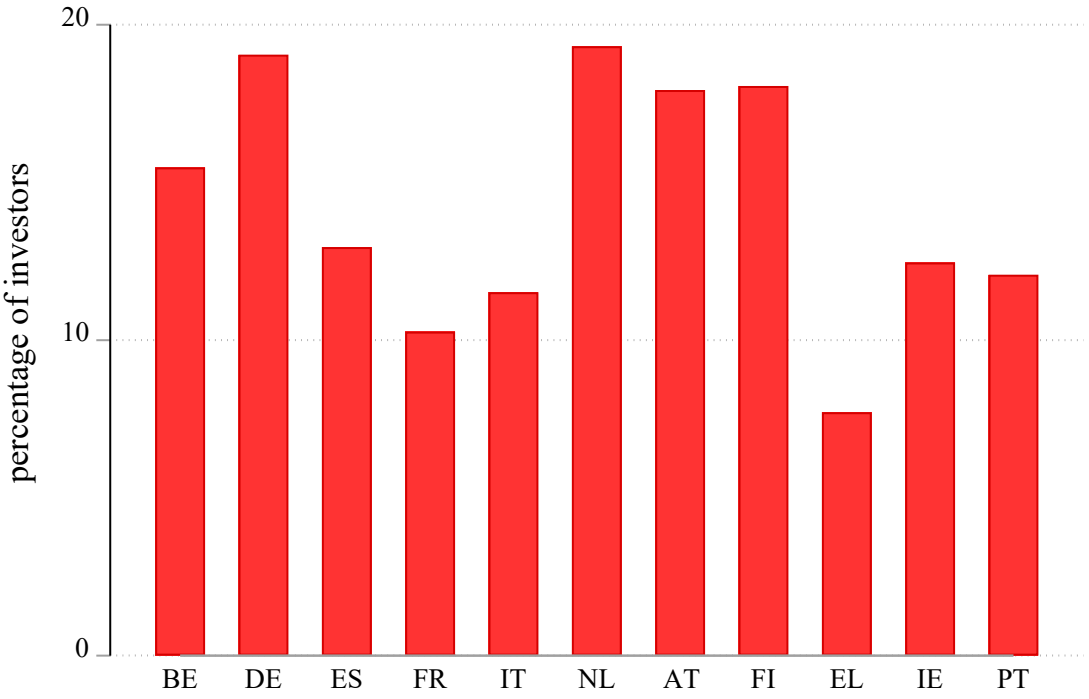
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. Entry rates are computed from the balanced panel as the share of respondents who did not own stocks or mutual funds at time t-1 but reported owning them at time t.

Figure 5. Exit rates from stocks and mutual funds



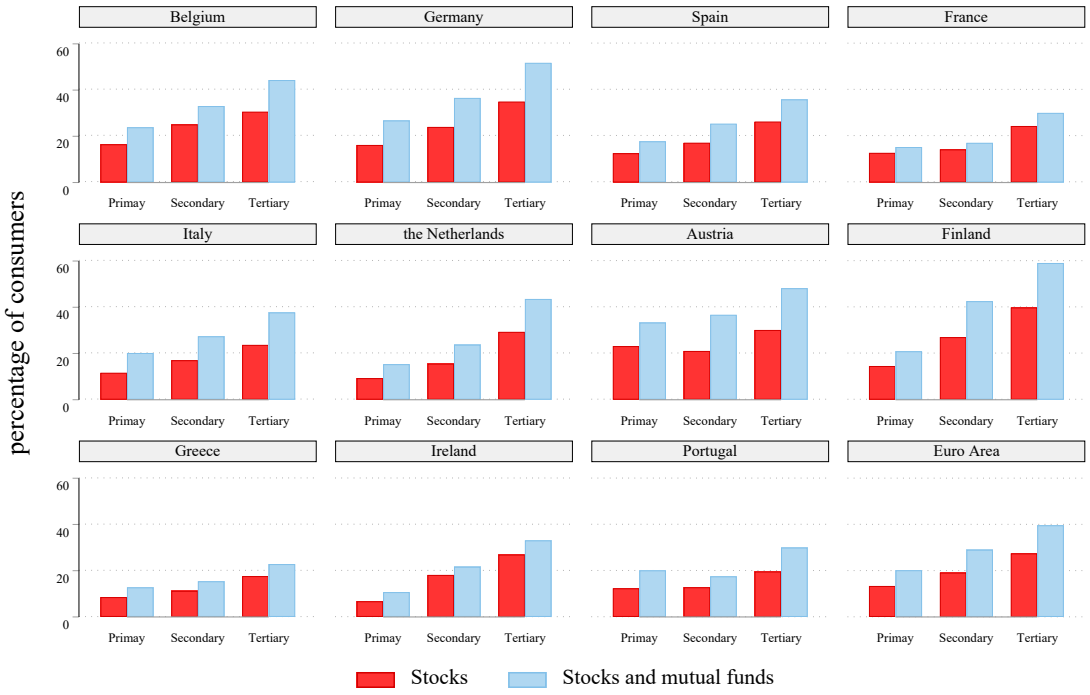
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. Exit rates are calculated from the balanced panel as the proportion of respondents who owned stocks or mutual funds at time t-1 and report not owning them at time t.

Figure 6. First time ownership since 2020



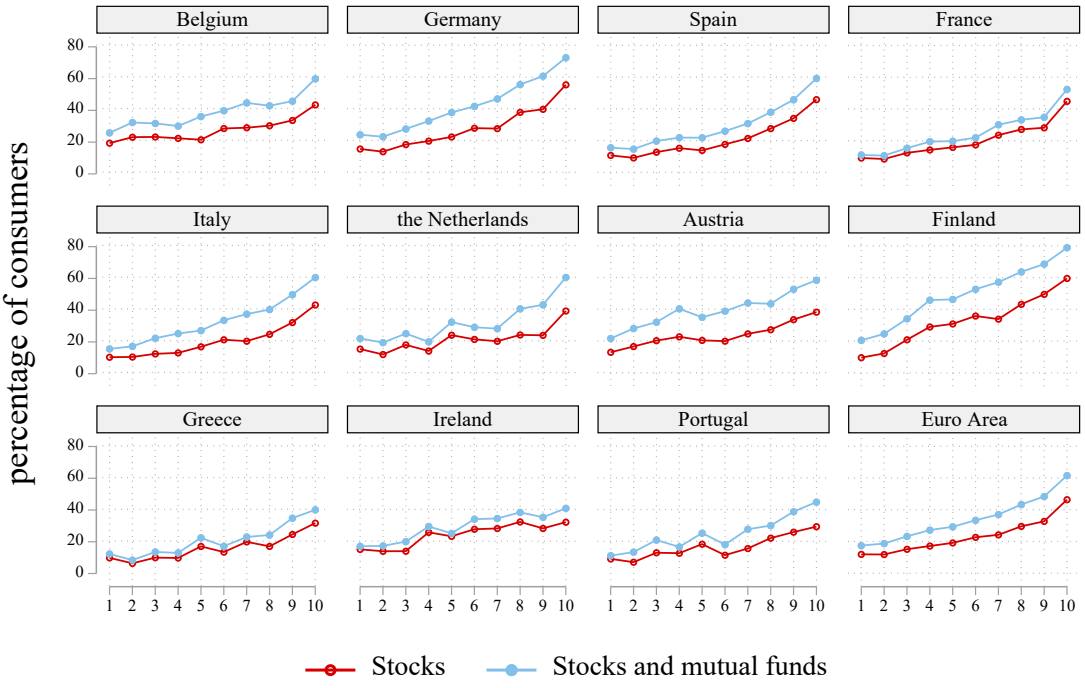
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample covers the November 2024 period and includes all eleven CES countries. The chart shows the share of consumers who either hold stocks (or private shares) or hold stocks (or private shares) and mutual funds (including ETFs), and the share who have entered the stock market since 2020.

Figure 7. Stock market and mutual fund participation, by education



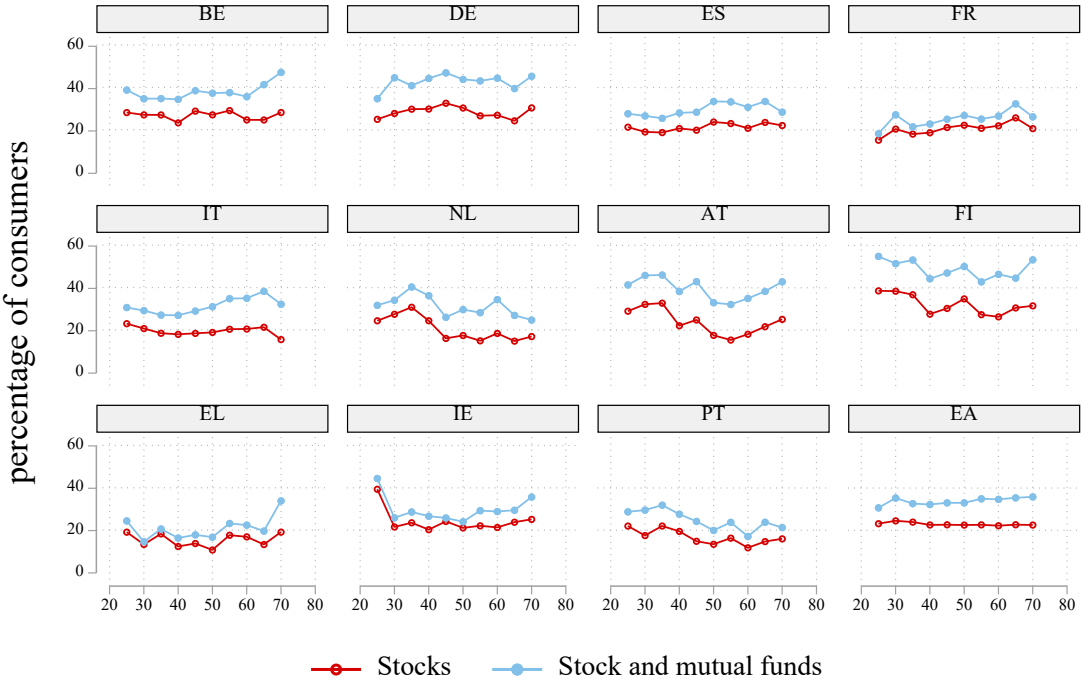
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample includes CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024, covering all eleven CES countries once available from 2022 onwards. The chart shows the share of consumers holding either stocks (or private shares) and stocks (or private shares) and mutual funds (including ETFs).

Figure 8. Stock market and mutual fund participation, by income deciles



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample comprises CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024, covering all eleven CES countries once available from 2022 onwards. The chart shows the share of consumers holding stocks (or private shares) and stocks (or private shares) and mutual funds (including ETFs). Income deciles are calculated at the country and survey wave levels.

Figure 9. Stock market and mutual fund participation, by age



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample includes CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024, covering all eleven CES countries once available from 2022 onwards. The chart shows the share of consumers holding stocks (or private shares) or stocks (or private shares) and mutual funds (including ETFs). Continuous age at survey recruitment has been grouped into 11 categories (18-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, 61-65, 66-70, 71+).

Tables

Table 1. Descriptive statistics, pooled sample 2020 to 2024

Variable	Statistic	N
Owns stocks	0.232	96,664
Owns stocks or mutual funds	0.336	97,084
Owns crypto assets	0.102	69,178
Age (in years)	45.049	98,344
Men	0.469	98,344
Primary educ.	0.120	98,344
Secondary educ.	0.331	98,344
Tertiary educ.	0.549	98,344
Household size	2.632	98,344
Annual household income (thsd.)	35.329	98,344
Not liquidity constrained	0.699	98,344
High tolerance for financial risk	0.286	96,906
High trust in people (above median)	0.358	98,344
High financial literacy (Big-3 correct)	0.467	95,145
BE	0.038	98,344
DE	0.279	98,344
ES	0.159	98,344
FR	0.207	98,344
IT	0.203	98,344
NL	0.058	98,344
AT	0.013	98,344
FI	0.008	98,344
EL	0.015	98,344
IE	0.007	98,344
PT	0.014	98,344
Aug-20	0.133	98,344
Feb-21	0.136	98,344
Jun-21	0.136	98,344
Nov-21	0.135	98,344
Nov-22	0.156	98,344
Nov-23	0.152	98,344
Nov-24	0.152	98,344

Note: Means are reported for all variables unless otherwise specified. Statistics are weighted using population weights. The sample comprises CES waves from August 2020, February, June, and November 2021; November 2022; November 2023; and November 2024. Variables related to crypto assets pertain to CES waves from November 2021, November 2022, November 2023, and November 2024. From November 2022 onward, CES data include five additional countries added in April 2022 (see the notes to Figure 1). High trust in people is defined as levels above the median of trust in people generally. Financial literacy is assessed using a set of standardized questions introduced by Lusardi and Mitchell (2011).

Table 2. Reasons for non-participation

Main reason for non-participation	Lack of Money	High Risk	Low Trust	Lack of Knowledge	Plans to buy durables	Lack of time
	(1)	(2)	(3)	(4)	(5)	(6)
Mean of dep. var.	0.462	0.353	0.247	0.203	0.071	0.088
Age: 36-50	0.073***	-0.001	0.033***	-0.088***	-0.028***	-0.042***
	(0.007)	(0.007)	(0.006)	(0.007)	(0.004)	(0.005)
Age: 51-65	0.146***	-0.000	0.047***	-0.175***	-0.059***	-0.086***
	(0.007)	(0.007)	(0.007)	(0.006)	(0.004)	(0.005)
Age: 65+	0.167***	0.000	0.032***	-0.210***	-0.052***	-0.102***
	(0.010)	(0.010)	(0.009)	(0.007)	(0.005)	(0.005)
Men	-0.016***	-0.015***	0.011**	-0.011**	0.013***	0.031***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.003)	(0.003)
Secondary education	0.014	0.017*	0.005	-0.006	-0.015***	0.003
	(0.009)	(0.009)	(0.008)	(0.008)	(0.005)	(0.005)
Tertiary education	0.001	0.038***	0.004	0.007	-0.002	0.016***
	(0.009)	(0.009)	(0.008)	(0.007)	(0.005)	(0.005)
Household size	0.005*	-0.007***	-0.008***	-0.009***	-0.005***	0.001
	(0.003)	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)
Household Income: Q2	-0.067***	0.052***	0.008	0.018***	0.018***	0.003
	(0.007)	(0.007)	(0.007)	(0.006)	(0.004)	(0.004)
Household Income: Q3	-0.101***	0.064***	0.001	0.015**	0.033***	0.010**
	(0.008)	(0.008)	(0.007)	(0.006)	(0.004)	(0.004)
Household Income: Q4	-0.163***	0.071***	0.006	0.009	0.042***	0.018***
	(0.009)	(0.009)	(0.008)	(0.007)	(0.005)	(0.005)
Not liquidity constrained	-0.276***	0.156***	0.078***	0.040***	0.025***	0.026***
	(0.006)	(0.006)	(0.005)	(0.005)	(0.003)	(0.003)
Country dummies						
(Base: FR)						
BE	0.036***	0.036***	0.050***	0.017	-0.036***	-0.035***
	(0.013)	(0.013)	(0.012)	(0.011)	(0.007)	(0.008)
DE	-0.014	-0.008	0.040***	-0.044***	-0.029***	0.021***
	(0.010)	(0.010)	(0.009)	(0.008)	(0.006)	(0.007)
ES	0.032***	-0.005	0.067***	-0.001	-0.021***	-0.038***
	(0.009)	(0.009)	(0.008)	(0.007)	(0.005)	(0.006)
IT	0.071***	-0.018**	0.036***	-0.026***	-0.060***	-0.059***
	(0.009)	(0.009)	(0.008)	(0.007)	(0.005)	(0.005)
NL	-0.055***	0.054***	0.089***	0.053***	-0.051***	-0.037***
	(0.013)	(0.013)	(0.012)	(0.012)	(0.006)	(0.008)
AT	0.114***	0.070***	0.084***	-0.030**	-0.042***	-0.034***
	(0.016)	(0.016)	(0.015)	(0.012)	(0.008)	(0.010)
FI	0.193***	-0.007	-0.049***	0.067***	-0.044***	-0.037***
	(0.016)	(0.016)	(0.013)	(0.015)	(0.009)	(0.010)
EL	0.161***	0.059***	0.130***	-0.016	-0.066***	-0.064***
	(0.015)	(0.014)	(0.014)	(0.011)	(0.006)	(0.007)
IE	0.099***	0.061***	-0.001	0.100***	-0.032***	-0.054***
	(0.015)	(0.015)	(0.013)	(0.014)	(0.008)	(0.008)
PT	0.126***	0.145***	0.089***	0.166***	-0.058***	-0.074***
	(0.014)	(0.014)	(0.013)	(0.014)	(0.006)	(0.006)
Survey-wave dummies						
(Base: Nov-21)						
Nov-22	-0.016***	0.003	0.033***	0.015***	-0.001	0.033***
	(0.006)	(0.006)	(0.006)	(0.005)	(0.003)	(0.004)
Nov-23	0.004	0.023***	0.022***	0.019***	-0.003	0.028***
	(0.007)	(0.007)	(0.006)	(0.006)	(0.004)	(0.004)
No. of Obs.	34,057	34,057	34,057	34,057	34,057	34,057

Note: Authors' calculations based on the ECB Consumer Expectations Survey (CES). The sample comprises CES waves from November 2021, November 2022, and November 2023, covering all 11 CES countries, with data available from 2022 onward. The table reports average marginal effects from pooled probit regressions. Base levels are age 18-35, women, primary education, first income quartile, and hand-to-mouth consumers. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1.

Table 3. Transition matrix and long-term steady states

	Short-run mobility				Steady state	
	P00	**P01**	**P10**	**P11**	**Π0**	**Π1**
Stocks						
2020 to 2021	0.91	0.10	0.29	0.71	0.74	0.26
2021 to 2022	0.94	0.06	0.35	0.65	0.85	0.15
2022 to 2023	0.94	0.06	0.25	0.75	0.81	0.19
2023 to 2024	0.92	0.08	0.27	0.73	0.77	0.23
Mutual Funds (MF)						
2020 to 2021	0.91	0.09	0.31	0.69	0.78	0.23
2021 to 2022	0.91	0.09	0.32	0.68	0.78	0.22
2022 to 2023	0.93	0.07	0.25	0.75	0.78	0.22
2023 to 2024	0.90	0.10	0.25	0.75	0.71	0.29
Stocks or MF						
2020 to 2021	0.87	0.13	0.25	0.75	0.66	0.34
2021 to 2022	0.90	0.10	0.27	0.73	0.73	0.27
2022 to 2023	0.92	0.08	0.22	0.78	0.73	0.27
2023 to 2024	0.89	0.11	0.20	0.80	0.65	0.35

Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). P00 is the probability of a household not owning stocks or mutual funds in both periods. P01 represents the probability of not owning stocks or mutual funds in period t and owning stocks or mutual funds in period t+1 (the entry rate), P10 the probability of owning stocks or mutual funds in period t and not owning stocks or mutual funds in period t+1 (the exit rate), and P11 the probability of owning stocks or mutual funds in both periods. Π0 and Π1 are the limiting distributions of non-stockholders and stockholders, respectively. Authors' calculations are based on the ECB Consumer Expectations Survey (CES). The sample comprises CES waves from August 2020, November 2021, November 2022, November 2023, and November 2024, covering all 11 CES countries, with data available from 2022 onwards.

Table 4. Ownership of directly held stocks and stocks and mutual funds

	Stocks		Stocks and Mutual Funds	
	Coefficient	Std. error	Coefficient	Std. error
Age: 36-50	-0.035***	(0.005)	-0.018***	(0.005)
Age: 51-65	-0.033***	(0.005)	-0.000	(0.005)
Age: 65+	-0.034***	(0.008)	0.005	(0.008)
Men	0.076***	(0.004)	0.052***	(0.004)
Secondary education	0.022***	(0.006)	0.014**	(0.006)
Tertiary education	0.061***	(0.006)	0.059***	(0.006)
Household size	0.005***	(0.002)	0.001	(0.002)
Household Income: Q2	0.020***	(0.005)	0.019***	(0.005)
Household Income: Q3	0.056***	(0.005)	0.057***	(0.005)
Household Income: Q4	0.142***	(0.006)	0.141***	(0.006)
Not liquidity constrained	0.126***	(0.003)	0.140***	(0.003)
High tolerance for fin. risk	0.007*	(0.004)	-0.001	(0.004)
High trust in people	0.031***	(0.004)	0.035***	(0.004)
High financial literacy	0.076***	(0.004)	0.112***	(0.004)
Country dummies (Base: FR)				
BE	0.057***	(0.009)	0.127***	(0.008)
DE	0.059***	(0.006)	0.192***	(0.006)
ES	0.007	(0.006)	0.073***	(0.005)
IT	0.001	(0.006)	0.125***	(0.006)
NL	-0.027***	(0.008)	0.076***	(0.008)
AT	0.040***	(0.010)	0.178***	(0.010)
FI	0.126***	(0.019)	0.275***	(0.019)
EL	-0.007	(0.010)	0.020**	(0.009)
IE	0.018*	(0.010)	-0.014*	(0.008)
PT	-0.025***	(0.009)	0.048***	(0.008)
Survey-wave dummies (Base: Aug. 20)				
Feb-21	-0.002	(0.005)	-0.003	(0.005)
Jun-21	0.007	(0.005)	0.018***	(0.005)
Nov-21	0.004	(0.005)	0.015***	(0.005)
Nov-22	-0.019***	(0.005)	0.014***	(0.005)
Nov-23	-0.009*	(0.005)	0.017***	(0.005)
Nov-24	0.009	(0.005)	0.044***	(0.005)
No. of Obs.	92,125		92,108	

Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). The table reports average marginal effects from pooled probit regressions. The sample comprises CES waves from August 2020, February, June, and November 2021; November 2022; November 2023; and November 2024. See also the notes to Table 2. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1.

Table 5. First-time ownership of stocks held directly and mutual funds

	Multinomial Probit (Average Marginal Effects)		
	Non-owners	**Owner: Stocks/MF (before 2020)**	**Owner: Stocks/MF (since 2020)**
	(1)	(2)	(3)
Age: 36-50	0.040***	0.041***	-0.081***
	(0.005)	(0.005)	(0.004)
Age: 51-65	0.020***	0.098***	-0.118***
	(0.005)	(0.005)	(0.004)
Age: 65+	0.013	0.119***	-0.132***
	(0.009)	(0.009)	(0.005)
Men	-0.087***	0.066***	0.022***
	(0.004)	(0.004)	(0.003)
Secondary education	-0.018**	0.022***	-0.005
	(0.007)	(0.006)	(0.005)
Tertiary education	-0.074***	0.067***	0.007
	(0.007)	(0.006)	(0.005)
Household size	-0.001	-0.002	0.003**
	(0.002)	(0.002)	(0.001)
Household Income: Q2	-0.036***	0.040***	-0.004
	(0.006)	(0.005)	(0.004)
Household Income: Q3	-0.082***	0.082***	0.000
	(0.006)	(0.005)	(0.004)
Household Income: Q4	-0.181***	0.170***	0.011***
	(0.007)	(0.006)	(0.004)
Not liquidity constrained	-0.176***	0.136***	0.039***
	(0.004)	(0.004)	(0.003)
High tolerance for fin. risk	-0.008*	0.008*	-0.000
	(0.005)	(0.004)	(0.003)
High trust in people	-0.048***	0.027***	0.020***
	(0.004)	(0.004)	(0.003)
High financial literacy	-0.127***	0.111***	0.016***
	(0.004)	(0.004)	(0.003)
Country dummies (Base: FR)			
BE	-0.109***	0.066***	0.043***
	(0.010)	(0.009)	(0.006)
DE	-0.164***	0.112***	0.052***
	(0.007)	(0.006)	(0.004)
ES	-0.055***	0.037***	0.019***
	(0.007)	(0.006)	(0.004)
IT	-0.097***	0.071***	0.026***
	(0.007)	(0.006)	(0.004)
NL	-0.035***	-0.007	0.043***
	(0.010)	(0.008)	(0.006)
AT	-0.142***	0.086***	0.056***
	(0.011)	(0.010)	(0.007)
FI	-0.250***	0.173***	0.076***
	(0.020)	(0.019)	(0.014)
EL	-0.014	0.000	0.014**
	(0.010)	(0.010)	(0.006)
IE	-0.019*	-0.006	0.025***
	(0.010)	(0.009)	(0.006)
PT	-0.014	-0.025***	0.038***
	(0.010)	(0.008)	(0.006)
Survey-wave (Base: Nov. 21)			
Nov-22	0.010**	-0.033***	0.024***
	(0.004)	(0.004)	(0.003)
Nov-23	-0.003	-0.033***	0.036***
	(0.005)	(0.005)	(0.003)
Nov-24	-0.028***	-0.048***	0.076***
	(0.005)	(0.005)	(0.003)
No. of Obs.	64,383		

Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). The table reports average marginal effects from pooled multinomial probit regressions. Consumers are grouped into three distinct groups: no stock or mutual fund (including ETFs) owners, "non-owners"; those who have invested in stocks or mutual funds (including ETFs) since before 2020; and those who started investing since 2020. The sample consists of the CES waves from each November survey round in 2021, 2022, 2023, and 2024. See the notes to Table 2 for base levels. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1.

Table 6. Entry into stocks and mutual funds

	Stocks		Stocks and mutual funds	
Variables	**Coeff.**	**Std. error**	**Coeff.**	**Std. error**
Age: 36-50	-0.018***	(0.004)	-0.022***	(0.005)
Age: 51-65	-0.025***	(0.004)	-0.028***	(0.005)
Age: 65+	-0.028***	(0.007)	-0.037***	(0.009)
Men	0.017***	(0.003)	0.022***	(0.004)
Secondary	-0.003	(0.005)	-0.009	(0.006)
Tertiary	0.012**	(0.005)	0.012*	(0.006)
Household size	0.006***	(0.001)	0.008***	(0.002)
Household Income: Q2	0.004	(0.004)	0.014***	(0.005)
Household Income: Q3	0.022***	(0.004)	0.034***	(0.005)
Household Income: Q4	0.054***	(0.005)	0.067***	(0.007)
Not liquidity constrained	0.034***	(0.003)	0.053***	(0.004)
High tolerance for fin. risk	0.007**	(0.004)	0.012***	(0.004)
High trust in people	0.011***	(0.003)	0.015***	(0.004)
High financial literacy	0.009***	(0.003)	0.021***	(0.004)
Country dummies (Base: FR)				
BE	0.009	(0.007)	0.009	(0.009)
DE	0.004	(0.005)	0.047***	(0.007)
ES	-0.024***	(0.005)	-0.020***	(0.005)
IT	-0.007	(0.005)	0.009	(0.006)
NL	-0.043***	(0.006)	-0.050***	(0.007)
AT	-0.010	(0.013)	0.007	(0.016)
FI	-0.007	(0.014)	0.008	(0.016)
EL	0.009	(0.015)	0.018	(0.017)
IE	-0.022**	(0.011)	0.004	(0.014)
PT	-0.024**	(0.010)	-0.001	(0.013)
Survey-wave dummies (Base: Feb. 21)				
Jun-21	0.014***	(0.005)	0.018***	(0.006)
Nov-21	0.003	(0.005)	-0.005	(0.006)
Nov-22	-0.023***	(0.005)	-0.018***	(0.006)
Nov-23	-0.024***	(0.006)	-0.030***	(0.007)
Nov-24	-0.004	(0.006)	-0.002	(0.007)
No. of Obs.	32,435		28,384	

Note: Authors' calculations based on the ECB Consumer Expectations Survey (CES). The table reports average marginal effects from pooled probit regressions. For entry into ownership, the estimation sample comprises non-owners from the previous wave. For exit from ownership, the estimation sample comprises owners from the previous wave. The sample includes the CES waves from August 2020, February, June, and November 2021; November 2022; November 2023; and November 2024. See the notes to Table 2 for base levels. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1.

Table 7. Exit from stocks and mutual funds

	Stocks		Stocks and mutual funds	
Variables	**Coeff.**	**Std. error**	**Coeff.**	**Std. error**
Age: 36-50	-0.029**	(0.013)	-0.026***	(0.010)
Age: 51-65	-0.057***	(0.013)	-0.058***	(0.010)
Age: 65+	-0.078***	(0.022)	-0.070***	(0.016)
Men	-0.076***	(0.010)	-0.048***	(0.008)
Secondary	-0.077***	(0.022)	-0.058***	(0.016)
Tertiary	-0.093***	(0.021)	-0.079***	(0.015)
Household size	0.006	(0.005)	0.013***	(0.003)
Household Income: Q2	0.036**	(0.018)	0.033**	(0.013)
Household Income: Q3	0.014	(0.017)	0.005	(0.012)
Household Income: Q4	-0.016	(0.016)	-0.043***	(0.012)
Not liquidity constrained	-0.195***	(0.016)	-0.179***	(0.012)
High tolerance for fin. risk	0.015	(0.011)	0.026***	(0.008)
High trust in people	-0.017*	(0.010)	-0.017**	(0.007)
High financial literacy	-0.115***	(0.011)	-0.122***	(0.009)
Country dummies (Base: FR)				
BE	-0.131***	(0.020)	-0.188***	(0.016)
DE	-0.139***	(0.016)	-0.170***	(0.013)
ES	-0.151***	(0.016)	-0.169***	(0.014)
IT	-0.101***	(0.017)	-0.183***	(0.014)
NL	-0.152***	(0.023)	-0.198***	(0.018)
AT	-0.153***	(0.034)	-0.190***	(0.025)
FI	-0.070	(0.046)	-0.112***	(0.037)
EL	-0.098**	(0.041)	-0.092**	(0.037)
IE	-0.082**	(0.040)	-0.108***	(0.031)
PT	-0.075*	(0.040)	-0.102***	(0.031)
Survey-wave dummies (Base: Feb. 21)				
Jun-21	-0.016	(0.014)	-0.034***	(0.011)
Nov-21	0.055***	(0.014)	0.036***	(0.011)
Nov-22	0.038**	(0.015)	0.016	(0.011)
Nov-23	-0.023	(0.018)	-0.015	(0.013)
Nov-24	-0.005	(0.016)	-0.028**	(0.012)
No. of Obs.	9,965		14,435	

Note: Authors' calculations based on the ECB Consumer Expectations Survey (CES). The table reports average marginal effects from pooled probit regressions. For the results on exit from ownership, the estimation sample comprises owners from the previous wave. The sample includes the CES waves from August 2020, February, June, and November 2021; November 2022; November 2023; and November 2024. See the notes to Table 2 for base levels. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1

Table 8. Characteristics of crypto investors

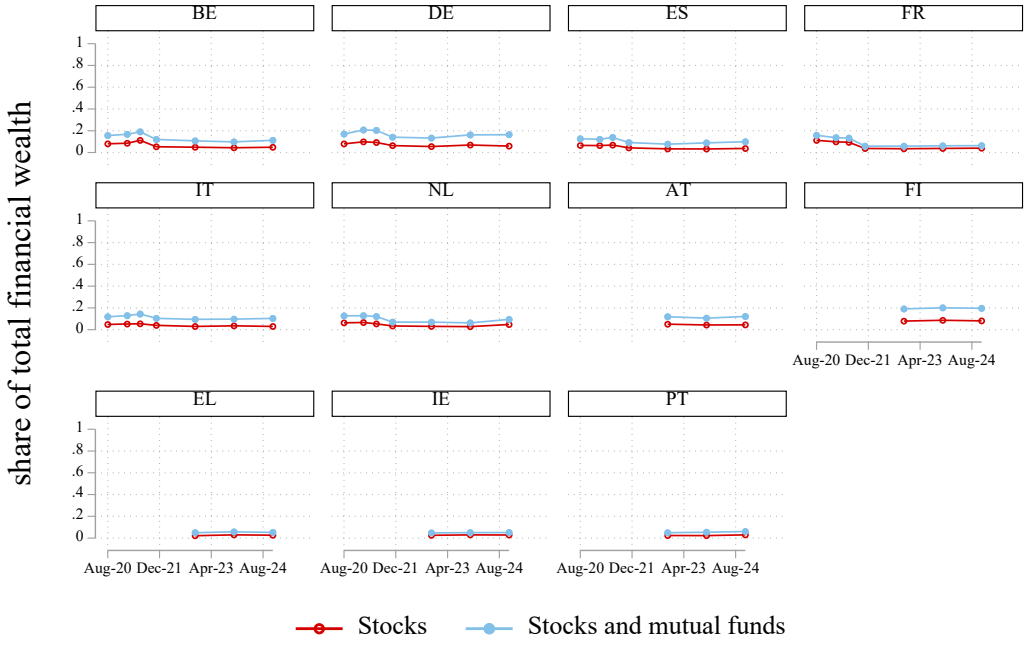
	Crypto asset ownership (0/1)	Entry rate into crypto (0/1)	Exit rate out of crypto (0/1)
	(1)	(2)	(3)
Mean of dep. var.	0.115	0.049	0.386
Age: 36-50	-0.079***	-0.036***	-0.010
	(0.004)	(0.003)	(0.014)
Age: 51-65	-0.137***	-0.056***	0.066***
	(0.004)	(0.003)	(0.019)
Age: 65+	-0.166***	-0.071***	0.069
	(0.004)	(0.004)	(0.054)
Men	0.055***	0.017***	-0.081***
	(0.002)	(0.002)	(0.014)
Secondary education	-0.002	-0.001	0.011
	(0.004)	(0.003)	(0.026)
Tertiary education	0.009**	0.003	-0.045*
	(0.004)	(0.003)	(0.025)
Household size	0.008***	0.006***	0.010*
	(0.001)	(0.001)	(0.006)
Household Income: Q2	-0.002	-0.001	0.013
	(0.003)	(0.003)	(0.021)
Household Income: Q3	0.008**	0.000	-0.042**
	(0.004)	(0.003)	(0.020)
Household Income: Q4	0.022***	0.003	-0.053***
	(0.004)	(0.003)	(0.020)
Not liquidity constrained	0.034***	0.004*	-0.154***
	(0.002)	(0.002)	(0.017)
High tolerance for fin. risk	0.014***	0.007***	0.023
	(0.003)	(0.002)	(0.015)
High trust in people	0.018***	0.016***	0.036***
	(0.003)	(0.002)	(0.014)
High financial literacy	0.006**	-0.008***	-0.117***
	(0.003)	(0.002)	(0.014)
Survey-wave (Base: Nov. 21)			
Mar-22	-0.005*		
	(0.003)		
Aug-22	0.035***	0.039***	-0.074***
	(0.003)	(0.003)	(0.018)
Nov-22	0.007**	0.000	0.076***
	(0.003)	(0.002)	(0.017)
Nov-23	-0.004	-0.007**	0.016
	(0.003)	(0.003)	(0.024)
Nov-24	0.005	0.004	-0.040*
	(0.003)	(0.003)	(0.023)
Aug-25	0.042***	0.032***	-0.064***
	(0.004)	(0.003)	(0.021)
No. of Obs.	114,451	52,000	6,219

Note: Authors' calculations based on the ECB Consumer Expectations Survey (CES). The table reports average marginal effects from pooled probit regressions. The sample in columns (1) to (3) comprises the CES waves from November 2021, March 2022, August 2022, November 2022, November 2023, November 2024, and August 2025. In column (4), data are drawn from November 2022, 2023, and 2024, as the CES collects plans to buy crypto assets only from November 2022 onward. All columns include controls for country fixed effects which are not reported for brevity. See the notes to Table 2 for base levels. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1.

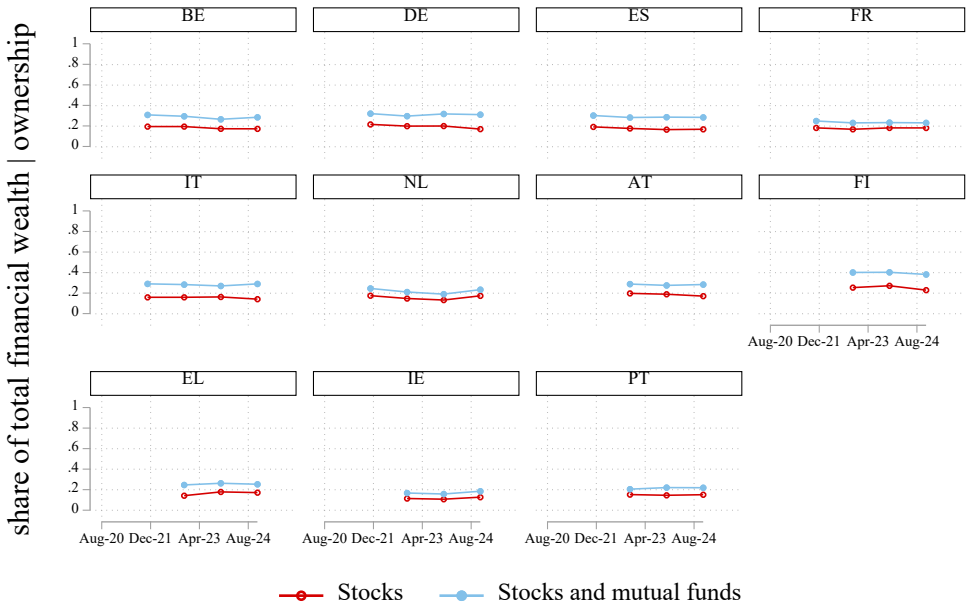
Appendix A. Additional Figures

A.1. Portfolio shares invested in stocks and mutual funds

(A) Unconditional on ownership of stocks and mutual funds

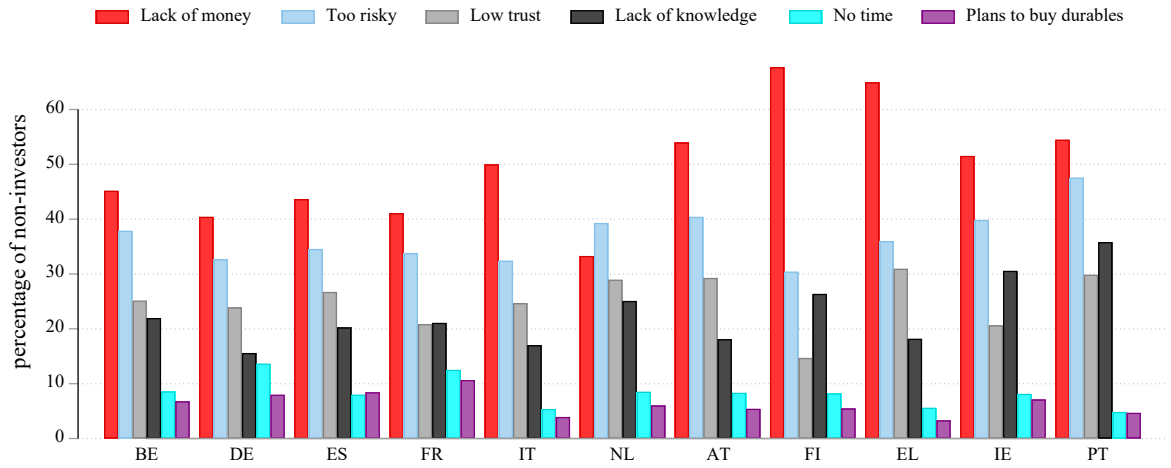


(B) Conditional on ownership of stocks and mutual funds



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample comprises CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024, covering all eleven CES countries once available from 2022 onwards. The chart shows the share of consumers assets allocated to stocks (or private shares) and stocks (or private shares) and mutual funds (including ETFs). Panel (A) plots the unconditional population average and Panel (B) plots the portfolio share conditional on investing in stocks or stocks and mutual funds respectively.

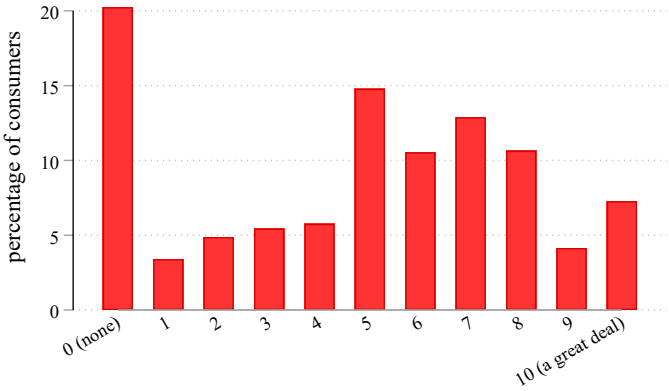
A.2. Motives for non-participation, by country



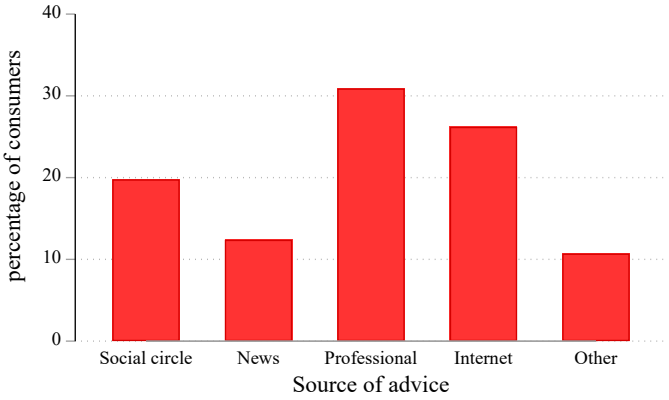
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The panel includes CES waves from November 2021, November 2022, and November 2023. Data from 2021 cover only the original six CES countries. The chart shows the mean share of non-investors in each country. A category labeled "other" is included but omitted here for brevity.

Figure A.3. Consumers' information acquisition and use of digital tools

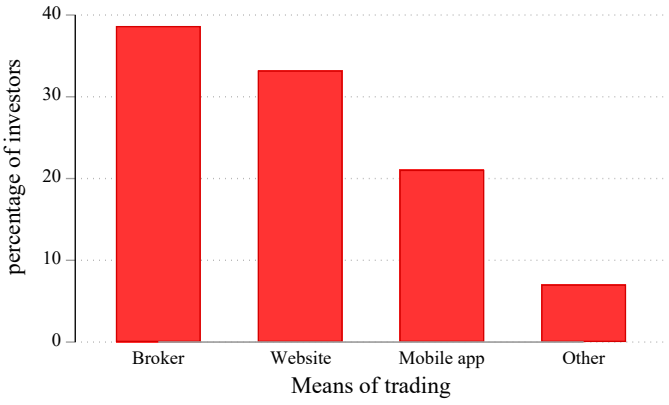
(A) Shopping around for investment and saving products



(B) Main source of financial advice

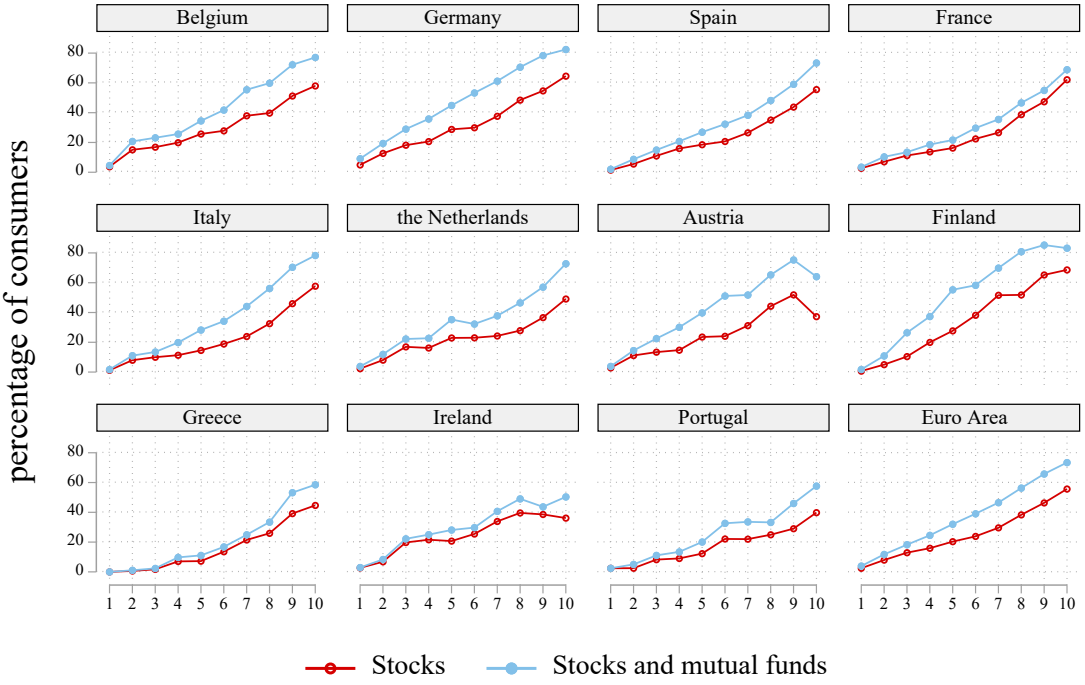


(C) Main way of trading among investors



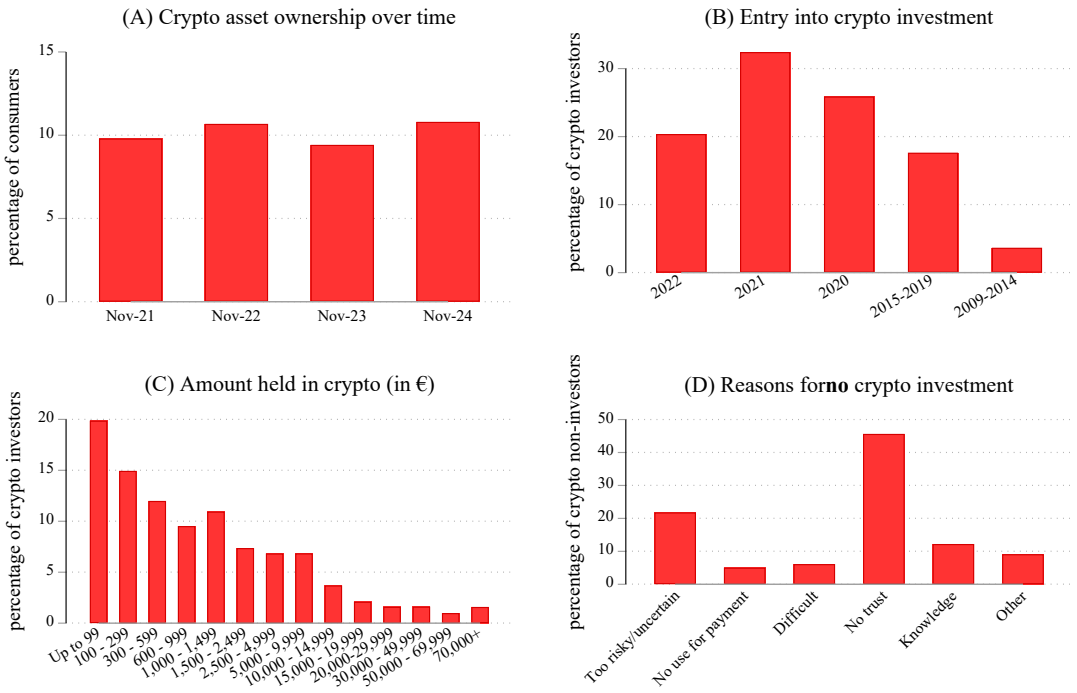
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample for both panels includes the CES waves from November 2022, November 2023, and November 2024, covering all 11 CES countries. Panel (b) groups sources of financial advice. Panel (c) illustrates how households typically trade stocks and/or mutual funds (including ETFs). "Brokers" refers to brokers from the respondent's bank, and "Website" and "Mobile app" encompass those from the respondent's bank.

Figure A.4. Stock market and mutual fund participation, by wealth deciles



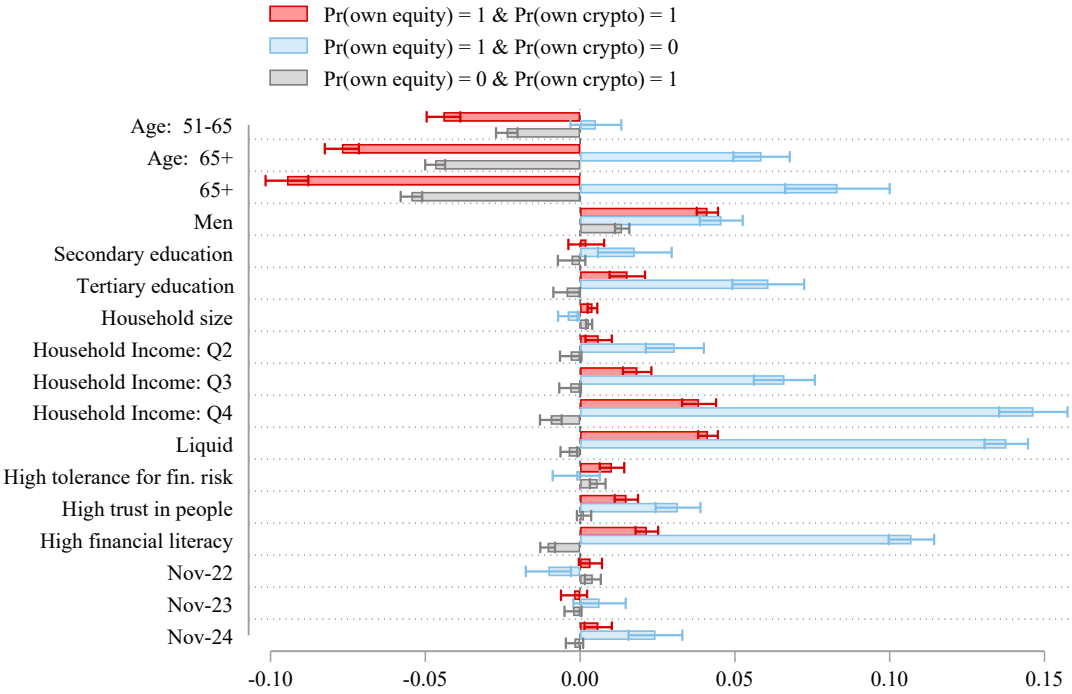
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using sample weights. The sample includes CES waves from August 2020, February 2021, June 2021, November 2021, November 2022, November 2023, and November 2024, covering all 11 CES countries after April 2022. The chart shows the share of consumers holding stocks (or private shares) and mutual funds (including ETFs). Total financial wealth is defined as the sum of household assets in bank accounts (current and savings accounts), stocks and mutual fund shares (including ETFs), private retirement products (such as private pensions and life insurance), bonds, and other financial assets. Wealth deciles are computed at the country and survey wave levels.

Figure A.5. Crypto-asset investments of euro area households



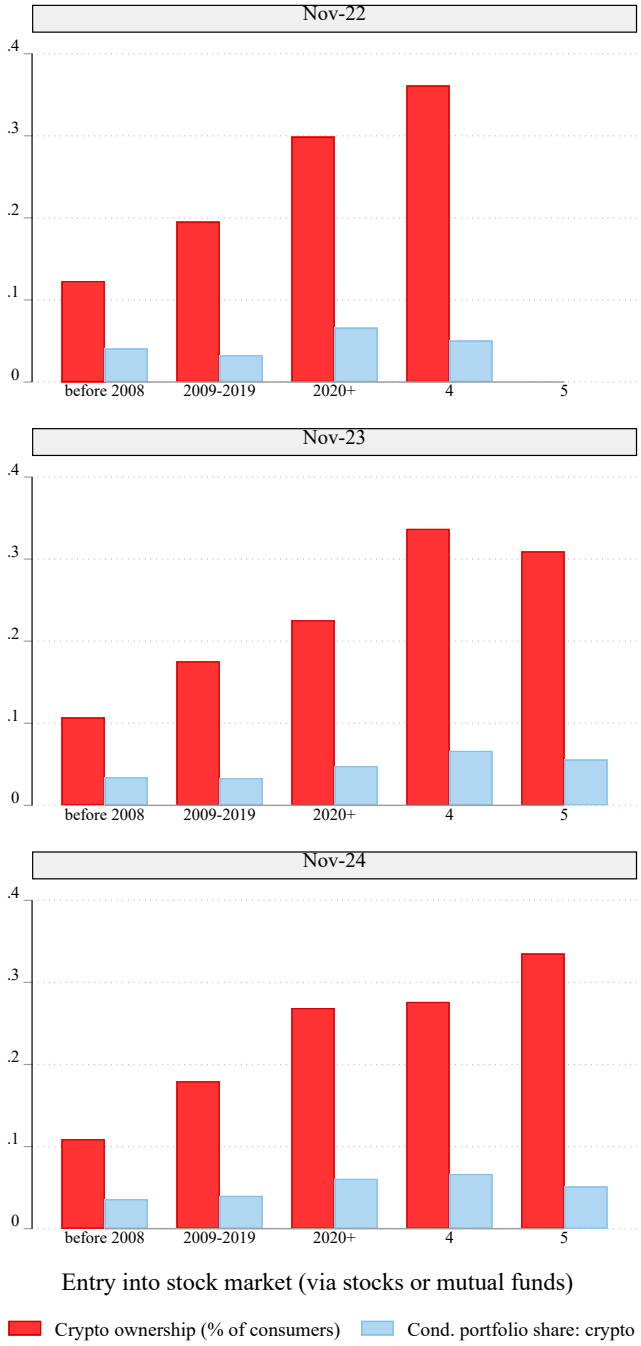
Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). Statistics are weighted using population weights. The sample across panels varies due to data collection and includes data from all eleven CES countries. The sample in panel (b) is derived from a special question in August 2022. Panel (c) is based on data from November 2022, 2023, and 2024, and panel (d) is based on data collected as part of a special section in November 2022 and 2023.

Figure A.6. Crypto ownership



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). The figure reports average marginal effects from a bivariate probit model of stock ownership and crypto asset ownership. Estimates are shown for the predicted joint probability of owning both asset classes, as well as for mixed ownership states (owning only one of the two). All specifications include country dummies. Points denote average marginal effects and horizontal bars indicate 95% confidence intervals.

Figure A.7. Stock market entry and crypto ownership



Note: Authors' calculations are based on the ECB Consumer Expectations Survey (CES). The figure reports average marginal effects from a bivariate probit model of stock ownership and crypto asset ownership. Estimates are shown for the predicted joint probability of owning both asset classes, as well as for mixed ownership states (owning only one of the two). All specifications include country dummies. Points denote average marginal effects and horizontal bars indicate 95% confidence intervals.

Appendix B. Additional Tables

Table B.1. Stock market participation and crypto asset ownership

	Dependent variable: portfolio composition			
	No stocks, no crypto	Stocks only (no crypto)	Stocks and crypto	Crypto only (no stocks)
Mean of the dep. var.	0.63	0.26	0.07	0.03
Age: 36-50	0.051***	0.020***	-0.056***	-0.015***
	(0.005)	(0.005)	(0.004)	(0.002)
Age: 51-65	0.050***	0.078***	-0.095***	-0.034***
	(0.006)	(0.005)	(0.003)	(0.002)
Age: 65+	0.055***	0.098***	-0.111***	-0.042***
	(0.009)	(0.009)	(0.004)	(0.003)
Men	-0.100***	0.044***	0.043***	0.013***
	(0.004)	(0.004)	(0.002)	(0.002)
Secondary	-0.023***	0.025***	-0.005	0.002
	(0.008)	(0.007)	(0.004)	(0.003)
Tertiary	-0.077***	0.068***	0.009**	-0.001
	(0.007)	(0.007)	(0.004)	(0.003)
Household size	-0.000	-0.008***	0.007***	0.001
	(0.002)	(0.002)	(0.001)	(0.001)
Household Income: Q2	-0.040***	0.041***	-0.004	0.002
	(0.006)	(0.005)	(0.003)	(0.002)
Household Income: Q3	-0.092***	0.084***	0.001	0.007***
	(0.006)	(0.006)	(0.003)	(0.002)
Household Income: Q4	-0.185***	0.163***	0.021***	0.002
	(0.007)	(0.006)	(0.004)	(0.002)
Not liquidity constrained	-0.182***	0.150***	0.031***	0.001
	(0.004)	(0.004)	(0.002)	(0.002)
High tolerance for fin. risk	-0.011**	-0.004	0.011***	0.003*
	(0.005)	(0.004)	(0.003)	(0.002)
High trust in people	-0.043***	0.025***	0.021***	-0.003
	(0.004)	(0.004)	(0.003)	(0.002)
High financial literacy	-0.133***	0.124***	0.006**	0.003
	(0.004)	(0.004)	(0.002)	(0.002)
Survey-wave dummies (Base: Nov. 21)				
Nov-22	0.001	-0.007*	0.000	0.006***
	(0.004)	(0.004)	(0.003)	(0.002)
Nov-23	-0.004	0.009**	-0.006**	0.000
	(0.005)	(0.005)	(0.003)	(0.002)
Nov-24	-0.027***	0.024***	0.004	-0.000
	(0.005)	(0.005)	(0.003)	(0.002)
No. of Obs.	65,282	65,282	65,282	65,282

Notes: Authors' calculations based on the European Central Bank Consumer Expectations Survey (CES), euro area (EA-11). The dependent variable is a categorical indicator of household ownership of stocks (incl. through mutual funds or ETFs) or crypto assets with four mutually exclusive outcomes: (i) no holdings of stocks or crypto assets (reference category), (ii) stocks only, (iii) both stocks and crypto assets, and (iv) crypto assets only. Reported coefficients are average marginal effects from a multinomial probit model represent the change in the probability of belonging to each portfolio category. See Table 2 notes for the base levels of the independent variables. Individual-level clustered standard errors are shown in parentheses. Statistical significance levels: *** p<.01, ** p<.05, * p<.1.

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