Child Equity Funds: A Path to Higher Stock Market Participation?*

Luigi Guiso
EIEF and CEPR

Tullio Jappelli
University of Naples Federico II, CSEF and CEPR

Claudio Michelacci
EIEF and CEPR

October 8, 2026

Abstract

We use a survey randomized controlled trial to test whether a long-horizon children's equity fund can broaden stock-market participation. We offer a representative sample of Italian households a zero-fee, tax-exempt, diversified European equity fund opened in a child's name, with small annual contributions invested over the life cycle, similar to the recently introduced Trump Accounts. We randomize treatments that vary information about historical returns, government guarantees, public co-contributions, and withdrawal flexibility. The fund generates substantial demand among stock-market non-participants across all treatment arms. If stated demand translated into actual enrollment, stock market participation would roughly triple in the long run concerning to US levels. Take-up increases most sharply when respondents are shown how much the fund would have accumulated if they had opened the fund at their birth and invested at historical equity returns. Government guarantees and public co-contributions also significantly increase take-up and contributions, particularly among non-stockholders, with effects comparable to those of historical-return information. By contrast, greater withdrawal flexibility has essentially no effect. We explore the mechanisms underlying these large effects and document that even in our context the stockholding puzzle re-emerges when people are offered stock investment over a year.

Key Words: Stock market; child equity accounts; survey experiments; retirement saving.

JEL: D12, D14, D15, C8, C99

*The research is funded by the European Union – Next Generation EU, in the framework of the GRINS – Growing Resilient, Inclusive and Sustainable Project (GRINS PE00000018 – CUP E63C22002140007). The views and opinions expressed are solely those of the authors and do not necessarily reflect those of the European Union and the European Union cannot be held responsible for them.

1 Introduction

A well-known puzzle in household finance is the persistently low rate of stock-market participation among households (Guiso and Sodini, 2013; Gomes et al., 2021). This matters not only for households, which forgo an important vehicle for financing retirement and accumulating long-term wealth, but also for the broader economy. Limited stock-market participation constrains the supply of equity capital, a concern that is particularly salient in Europe, where a shortage of risk capital may hinder the financing of innovative firms and, ultimately, productivity growth (Draghi, 2024). It also leaves a large fraction of households partly excluded from the gains associated with innovation and economic growth.

These considerations have motivated a growing set of policy proposals that seek to facilitate access to capital markets from birth or early childhood. Early access has several potential advantages. It allows even small contributions to benefit from compound returns over several decades, substantially increasing accumulated wealth at retirement. At the same time, the probability that an equity investment ends below cumulative contributions falls sharply as the investment horizon lengthens, both in historical simulations of child accounts (Malmendier et al., 2024) and in our own simulations reported in Figure 1 and Appendix C. Despite growing policy interest in child investment accounts, however, we know relatively little about their potential demand and about the features that determine whether households currently outside the stock market would use them.

This paper studies these questions through two survey experiments conducted in consecutive waves of the Italian Survey of Consumer Expectations (ISCE), a quarterly panel survey of approximately 5,000 Italian adults. The first experiment, fielded in April 2026, is our main experiment. It studies demand for a European Child Equity Fund (ECEF) where investors commit to contribute to and liquidate the fund after decades and tests how alternative features of the fund affect willingness to invest.

The second experiment, fielded in July 2026, tests whether ECEF take-up is driven mainly by its long horizon. To do so, we assign participants at random to three groups. Each group faces an investment in an equity portfolio with the same annual return distribution as the equity fund in the first experiment, but the horizon over which its final return and risk are assessed differs across groups: one year, 15 years, and 30 years. The two experiments are therefore complementary.

In the April experiment, respondents are offered the opportunity to subscribe to what we call a European Child Equity Fund. The baseline design asks whether they would contribute €120 per year to an equity fund opened in the name of a young child, with family members initially making the contributions and the beneficiary continuing them after reaching adulthood. Contributions are invested in a diversified European equity portfolio managed by an independent non-profit authority. The fund charges no fees, returns are tax-exempt and reinvested, and in the baseline design the capital cannot be withdrawn until age 70. Starting at birth, annual contributions of €120 amount to total contributions of €8,400 over 70 years. Assuming an average annual real return on the equity fund of 6.5% and

volatility of 19% (as in the historical data), the expected value of the fund at age 70 is about €150,000, while the probability that its terminal value falls below cumulative contributions is approximately 2%.

Respondents are randomly assigned to five groups. The reference group, T1, receives the baseline description only. The other four groups receive the same information plus one modification to the fund. T2 makes the gains from long-term equity investment more personal and salient by showing each respondent how much an ECEF would be worth today had he or she contributed since birth, using the actual historical sequence of European equity returns relevant to the respondent's cohort. T3 adds a government guarantee covering any shortfall between the terminal value of the fund and cumulative contributions. T4 introduces a public co-contribution: during the first 18 years of the child's life, the government pays €60 of the €120 annual contribution. Finally, T5 relaxes the commitment feature by allowing the beneficiary to liquidate the account after reaching adulthood rather than waiting until age 70. The treatments therefore isolate the roles of return salience, downside protection, public subsidies, and liquidity in determining demand for the fund.

Our first result is that the basic architecture of the ECEF attracts substantial demand even without additional incentives. About one-third of respondents in the baseline treatment say that they would subscribe, compared with only about 22% of the sample who currently own stocks. More importantly for the objective of broadening participation, 28% of respondents who currently hold no stocks are willing to invest in the baseline ECEF. Thus, framing stock-market participation as a small contribution starting early in life, invested automatically in a diversified and low-cost fund over a very long horizon, attracts a sizeable fraction of households that otherwise remain outside the equity market.

The second result concerns the additional design features. Personalized information about historical accumulated returns has the largest average effect: showing respondents what the fund would have accumulated had they contributed since birth raises stated take-up by about 8 percentage points, more than one-fifth of the baseline subscription rate. A government guarantee adds about 5 percentage points to the baseline take-up, while the public co-contribution raises it by about 4 points. By contrast, allowing early liquidation has essentially no effect. Thus, making the benefits of long-run equity investment tangible, reducing downside risk, and subsidizing contributions all enhance demand, whereas the long lock-in of the baseline product does not appear to be an important deterrent.

These average effects conceal important heterogeneity. Baseline demand is considerably higher among current stockholders, whether through direct holdings or mutual funds, than among non-stockholders. However, the additional treatments have their strongest effects among households that are currently outside the equity market. Among non-stockholders, personalized information raises take-up by about 9 percentage points above the baseline, while the guarantee and public co-contribution raise it by about 7 percentage points each. A similar pattern emerges by financial wealth: treatment effects are small and statistically insignificant among wealthier respondents, but large among those below the median of financial wealth. Personalized information raises take-up among the latter by about 11 percentage points,

and the guarantee and co-contribution by roughly 8 points. The treatments therefore have their strongest effects precisely among the households for whom participation costs and unfamiliarity with equity markets are likely to be most relevant.

The same pattern appears on the intensive margin. Personalized information, the guarantee, and the State co-contribution all increase the amount respondents are willing to invest, whereas greater liquidity again has little effect. The effects are particularly large among respondents with low financial wealth. We also ask respondents how they would allocate the €1,000 Newborn Bonus currently available in Italy.[1] Personalized information and downside protection significantly increase the fraction of the transfer allocated to the ECEF, especially among non-stockholders and low-wealth respondents. Together, these findings indicate that the treatments affect not only the decision to enter the fund but also the amount households are prepared to commit to it.

Why can a fund invested entirely in equities attract households that currently avoid the stock market? Our second experiment helps address this question. As said, they are randomly assigned to three groups that differ in the horizon over which they assess the investment: one year, 15 years, and 30 years. In each case, they are told the expected value of the investment at the end of the horizon and the probability that it falls short of (exceeds) the amount invested. Among those evaluating the investment over one year, 19% take it up and 51% turn it down (the rest answer "don't know"). This shows that the stockholding puzzle (the fact that most people turn down even small investments with a substantial positive expected return) also holds in our setting. This is consistent with myopic loss aversion (Benartzi and Thaler, 1995). When the horizon is 15 years, the take-up rate rises to 28%, and to 32% at 30 years, while the share declining falls correspondingly. This suggests that what makes ECEF effective at raising stock market participation, even in the baseline version of our first experiment, is its long horizon. This lets investors benefit from the compounding of returns, a force that individuals tend to underestimate (Stango and Zinman, 2009), while lowering the probability of a loss.

But we also find evidence that the ECEF overcomes other barriers to participation, including conventional participation costs. It requires no product search or portfolio choice, charges no fees, permits very small contributions. Additionally, its standardized and transparent design may reduce information costs, and management of the fund by an independent authority may alleviate distrust about financial products. Our evidence is consistent with both mechanisms: treatments that make the returns to the fund more tangible or improve its payoff are particularly effective among respondents with low wealth (consistent with fixed participation costs) and low trust (consistent with distrust wiping out the perceived equity premium; Guiso et al., 2008).

We assess the aggregate implications of households' stated willingness to open an ECEF account on behalf of a newborn child. We study two hypothetical implementations of ECEFs: one in Italy alone and one covering all EU countries. We use an OLG model in which each newborn has up to three potential sponsors—the household of the parents and, if alive,

[1]The bonus is a one time government transfer to the family of every newborn.

the households of the two sets of grandparents. The model is calibrated to match official demographic projections over the coming decades. Two messages emerge from the quantitative analysis. First, the ECEF can substantially increase both stock-market participation and the demand for equity, but on different time scales. Stock-market participation rises in two waves. During the first twenty years, it increases from 13 to 23 percent in Italy and from 19 to 31 percent in Europe, entirely through parents and grandparents who sponsor a child's account. As ECEF account holders reach adulthood, participation rises further, reaching 44 percent in Italy and 56 percent in Europe in the new steady state—about three times current participation and close to the U.S. rate of 58 percent (Aladangady et al., 2023). Holdings accumulate more gradually, reflecting both the build-up of accounts across cohorts and the capitalization of reinvested returns. Under the baseline policy, ECEF accounts hold more than one-third of today's market capitalization in the steady state in both Italy and Europe, but less than one percent during the first twenty years.

We also consider three accompanying policies to accelerate the transition and bring forward the accumulation of equity holdings: enrolling children already born, allowing households to open an account for their next child up to five years before birth, and providing a €1,000 government contribution when an account is opened, similar in size to the Italian Newborn Bonus. With all three policies, ECEF accounts would reach about 4 percent of Italian market capitalization after twenty years (€40 billion) and about 3 percent of the Euro Stoxx 600 in Europe (€450 billion). These holdings would amount to about one quarter of the listed shares currently held by households—€167 billion in Italy and €1,852 billion in the EU-27 (Eurostat, 2026). These calculations illustrate the potential dual role of child equity investment: it can promote the accumulation of supplementary retirement wealth for households and increase households' long-term demand for European equity. Both objectives are particularly relevant in Europe, where population ageing and the persistent shortage of risk capital are central policy concerns.

Relation to the literature. This paper contributes primarily to the literature on the stock market participation puzzle. As reviewed by Guiso and Sodini (2013) and Gomes et al. (2021), a large literature has proposed several explanations for why households stay out of the stock market despite the sizeable long-run equity premium. These include fixed entry and participation costs (Vissing-Jørgensen, 2002), limited trust in financial markets and institutions (Guiso et al., 2008; Georgarakos and Pasini, 2011), information and awareness barriers (Guiso and Jappelli, 2005), misperceptions about the knowledge required to invest in stocks (Duraj et al., 2024), behavioral preferences such as loss aversion (Gomes, 2005; Dimmock and Kouwenberg, 2010), aversion to news about losses (Pagel, 2018), narrow framing and loss aversion (Benartzi and Thaler, 1995; Barberis et al., 2006), and ambiguity aversion (Dow and da Costa Werlang, 1992). Many of these mechanisms receive empirical support and can account for important features of limited stock-market participation, including its strong concentration among lower-wealth households and its persistence even among some affluent investors.

Our contribution is not to offer a new explanation for the participation puzzle, but to

study an investment instrument that may make equity participation attractive to households that would otherwise remain outside the market. Several features of the ECEF map naturally into the mechanisms emphasized by the existing literature and we show evidence consistent with ECEF overcoming barriers to participation originating from entry costs and limited trust in financial markets.

Moreover, emphasizing the accumulation of returns over several decades may help investors appreciate the power of compounding and mitigate exponential-growth bias (Wagenaar and Sagaria, 1975; Stango and Zinman, 2009). Most importantly, we show evidence that, presenting equity investment in terms of the fund's value at age 70, together with its high expected return per euro contributed and low probability of a terminal loss, makes equity exposure attractive to loss-averse investors who would reject the same investment when framed as a sequence of short-horizon stock-market bets, consistent with theories of loss aversion and narrow framing (Benartzi and Thaler, 1995; Gomes, 2005; Barberis et al., 2006; Dimmock and Kouwenberg, 2010; Pagel, 2018).

The rest of the paper proceeds as follows. Section 2 describes the ECEF and its life cycle risk–return profile. Section 3 presents the ISCE survey and the main experimental design, and Section 4 outlines the empirical approach. Section 5 reports the effects of the ECEF treatments on take-up, contribution amounts, the allocation of the Newborn Bonus, and the role of information clarity. Section 6 investigates why non-stockholders are willing to invest in the ECEF, focusing on participation costs, trust, and behavioral mechanisms. Section 7 presents the Wave 12 experiment on investment-horizon framing. Section 8 quantifies the implications for newborn enrollment, long-run stock-market participation, aggregate equity holdings, and the fiscal cost of the guarantee. Section 9 concludes.

2 A European Child Equity Fund

This section describes the ECEF: the instrument, its relation to existing international programs, and its life-cycle risk and return profile. The ECEF builds on a growing set of child-account initiatives: the U.S. Trump Accounts, Israel's Savings for Every Child, Germany's proposed Frühstartrente, and related Italian and European arrangements (Appendix A). These programs share an early start, small contributions, and long horizons, but differ in eligibility, public support, investment options, and withdrawal rules.

The proposed instrument is the European Child Equity Fund (ECEF), a long-term investment account opened in the name of a child aged 0 to 5. In its baseline version, the ECEF is presented as a European, non-profit, zero-fee investment vehicle managed by an independent public authority. Family members initially contribute to the fund, while the beneficiary continues contributing after reaching adulthood. The proposed annual contribution is €120, equivalent to €10 per month, implying total contributions of €8,400 over 70 years. Returns are tax-exempt and automatically reinvested, and in the baseline design the accumulated capital can be withdrawn only when the beneficiary reaches age 70.

The fund is presented as serving two related objectives: promoting long-term wealth accumulation for retirement and channeling household savings toward equity investment. Respondents are informed that, based on historical simulations, the expected value of the fund at age 70 is about €150,000, compared with €8,400 in total contributions. The questionnaire also makes the risk-return trade-off explicit by reporting both downside and upside scenarios: approximately a 2% probability that the terminal value falls below total contributions, a 10% probability that it is below €18,000, and a 10% probability that it exceeds €320,000. The ECEF should therefore be viewed simultaneously as a child-start equity account and as a very early form of supplementary retirement saving.

At the same time, the ECEF combines a set of features that are not generally present together in existing programs: very early entry into equity markets, small recurring contributions, a diversified low-cost equity default, and an exceptionally long investment horizon extending into retirement.

Figure 1, panel (a) illustrates the life-cycle logic of the instrument. The annual contribution is €120, or €10 per month. The accumulated capital would rise slowly at first and then accelerate strongly because of compound returns. The baseline calibration assumes a broadly diversified European or global equity portfolio, with a mean annual real return of 6.5%, and a standard deviation of annual returns of 19%, with returns drawn from a lognormal distribution and values in line with the historical experience of the European market: the geometric (compound) average real return over 1948–2025 is approximately 6.7 percent per year, and the historical volatility about 18 percent (see Appendix D).[2] This is consistent with long-run international evidence on equity returns and with the ECEF's proposed diversified investment structure.

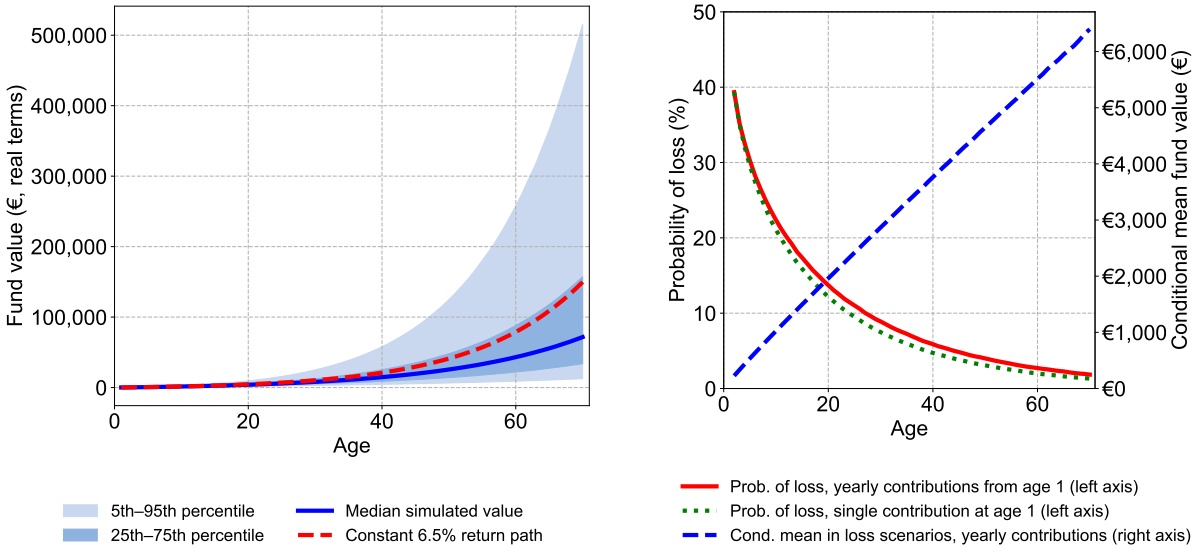
The figure is based on 500,000 simulated return paths. For each simulated path, the value of the fund is updated year by year by applying the realized annual return along the path to the accumulated balance and then adding the yearly contribution. The chart reports the median simulated fund value, the interquartile range (25th–75th percentile), the 5th–95th percentile range, and, for comparison, the path implied by a constant annual return of 6.5%.

The figure highlights two main results. First, the expected long-run accumulation potential is substantial: under an average 6.5% annual real return, the fund reaches about €150,000 by age 70. In the stochastic simulation, the mean terminal value is €149,700, essentially identical to the analytical benchmark of €149,768. Second, uncertainty is very large. Because returns are volatile, the median terminal value is much lower, about €71,700, while the distribution of outcomes is very wide: at age 70, the 25th–75th percentile range is approximately €33,900 to €157,100, and the 5th–95th percentile range is approximately €12,600 to €515,400. This reflects the strong compounding effect of return volatility over long horizons. In other words, the fund has substantial upside potential, but realized outcomes can differ greatly across individuals depending on the sequence of returns experienced over the life cycle.

Figure 1, panel (b) focuses on downside risk. It reports the probability that the value of the fund falls below cumulative contributions and the mean fund value conditional on such a

[2]These are the same values used in the survey information (see Appendix C).

Figure 1: Simulated ECEF value and downside risk over the life cycle



(a) ECEF value over the life cycle **(b) Downside risk over the life cycle**

Notes: The figure reports simulated outcomes for an ECEF account with annual contributions of €120 from age 1 to age 70. Simulations are based on 500,000 return paths, with annual returns drawn from a lognormal distribution with a mean annual real return of 6.5% and a standard deviation of 19%, the model and values used in the survey information, in line with the historical experience of the European market (geometric average real return of about 6.7 percent per year, volatility of about 18 percent). Panel (a) reports the median fund value, the interquartile range (25th–75th percentiles), the 5th–95th percentile range, and the accumulation path under a constant annual return of 6.5%. Panel (b) reports, from age 2 onward, the probability that the fund value falls below cumulative contributions (solid red line) and the mean fund value conditional on such a loss (dashed blue line), for an account with annual contributions starting at age 1. The dotted green line reports the probability of a loss for an account funded by a single contribution at age 1; this probability does not depend on the amount contributed. At age 1 the first contribution has just been invested and has earned no return.

loss. The probability of a loss is relatively high at short horizons but declines sharply as the investment horizon lengthens, falling to about 2% by age 70. An account funded by a single contribution at age 1, rather than by yearly contributions, would carry a somewhat lower probability of a loss at every later age (dotted green line): about 1.3% by age 70, against 1.9% with yearly contributions. Although the size of the shortfall conditional on a loss increases as cumulative contributions rise, it remains relatively limited at the end of the horizon: at age 70, the average shortfall is about €2,000. Thus, even conditional on ending below total contributions, the fund retains on average roughly €6,400 of the €8,400 contributed over the life cycle.

The cumulative effect of the equity premium over such a long horizon is substantial. If the €120 annual contribution were instead invested each year in a risk-free bond yielding 1.5% in real terms, the terminal value after 70 years would be €14,684, roughly one tenth of the expected value of the equity fund (€149,768). The bond outcome corresponds approximately to the 7th percentile of the simulated equity distribution: in more than 93% of paths the equity fund ends above the value of the safe alternative.

3 The survey and the experiment

This section describes the survey (Section 3.1), the experimental design and the treatments (Section 3.2), and the characteristics and balance of the sample (Section 3.3).

3.1 The Italian Survey of Consumer Expectations

Our analysis uses data from the Italian Survey of Consumer Expectations (ISCE; Guiso and Jappelli, 2026). ISCE is a large-scale, high-frequency online survey of Italian residents aged 18–75, organized as a quarterly rotating panel. Its design is inspired by related international surveys, including the Federal Reserve Bank of New York's Survey of Consumer Expectations and the European Central Bank's Consumer Expectations Survey.

The ISCE sample is stratified by region of residence, age, gender, education, and employment status to achieve broad representativeness of the Italian population, following an approach similar to that used in the Bank of Italy's Survey of Household Income and Wealth (SHIW). Each wave includes approximately 5,000 respondents. Survey participation is encouraged through a combination of individual incentives and charitable donations, and the survey achieves an average response rate of around 30–40 percent, with some variation across waves.

ISCE has been conducted quarterly since October 2023 and has collected 12 waves to date. Its rotating-panel structure allows respondents to be followed over time, with an average retention rate of about 80% between consecutive waves, while regular sample refreshment helps preserve representativeness. Interviews are conducted using Computer Assisted Web Interviewing (CAWI). Guiso and Jappelli (2026) describe the survey in detail and compare the ISCE sample with the 2022 SHIW. The two surveys display similar distributions of gender, age, household composition, education, and homeownership, and broadly comparable median consumption. ISCE respondents report somewhat lower income, and somewhat higher financial wealth and participation in financial markets. In ISCE, we define stockholders as respondents who hold equities either directly or indirectly through mutual funds.

3.2 Experimental design: five ECEF treatment arms

A particularly useful feature for the present study is that ISCE regularly incorporates randomized experimental modules designed to study expectations, preferences, and economic behavior. In April 2026 (Wave 11 of ISCE), we implemented a randomized survey experiment to measure how different features of the ECEF affect respondents' willingness to invest in the fund. The sample was randomly assigned to five equally sized groups, stratified by gender, age, and geographic area, which we denote T1–T5. All groups received the baseline ECEF description summarized in Section 2: an annual contribution of €120, zero fees, tax-exempt reinvested returns, no early withdrawals, withdrawal at age 70, and information on the simulated distribution of possible fund values.

Group T1 received only the baseline description and therefore identifies baseline demand for the ECEF. Each of the remaining groups received the same baseline information plus one additional treatment. Respondents assigned to T2 were shown the value their ECEF would have reached today (or at age 70 for older respondents) had they contributed to the fund since birth, using the historical sequence of equity returns relevant to their age. This treatment tests whether making the benefits of long-term equity investment more personal and salient increases willingness to subscribe.

Because realized historical returns differ across cohorts, both the accumulated fund value and the return per euro contributed vary with respondents' age. The historical returns are the real total returns on a portfolio of ten European stock markets with Euro Stoxx 600 country weights, constructed from the Jordà et al. (2019) Macrohistory Database and extended to 2025 (Appendix D). Over 1948–2025 the geometric (compound) average real return is 6.7 percent per year (the arithmetic mean of annual returns is approximately 8 percent), with a standard deviation of 18 percent; annual returns range from –40 percent (2008) to +58 percent (1954). Among respondents aged 18–75, the value shown ranges from about €4,300 for the youngest cohort (born in 2008, €2,160 contributed) to about €200,000 for cohorts born in the early 1950s (€8,400 contributed), that is, from about 2 to about 24 euros per euro contributed. Cohorts born around 1950 benefited the most: with the same €8,400 of contributions at age 70, a respondent born in 1952 would have accumulated about €200,000, against about €150,000 for one born in 1955. Despite these large differences in accumulated multiples, average annual returns differ much less across cohorts: the internal rate of return implied by each cohort's contributions and fund value varies roughly between 5.5 and 7.5 percent per year among respondents aged 18–75, around the geometric average of the series (see Table A11 in the Online Appendix).

Respondents assigned to T3 are told that the state guarantees the fund: if its terminal value falls below total contributions, the state covers the shortfall; if the fund performs well, the state retains a small share of the gains, below 1%. This treatment isolates the role of downside protection and risk aversion.[3] Respondents in T4 are told that, during the first 18 years of the child's life, the state pays €60 of the €120 annual contribution. This treatment tests whether a public co-contribution raises take-up by reducing the private cost of contributing. Finally, T5 relaxes the baseline withdrawal restriction: respondents are told that, once the beneficiary reaches adulthood, the fund can be liquidated at any time rather than only at age 70. This treatment tests whether the long lock-in is a barrier to take-up and whether greater liquidity increases willingness to invest.

Other design elements found also in international experience (public contributions, default

[3]One concern with the government guarantee is that it may have financial stability implications if a whole cohort of participants has to be bailed out at age 70. The fiscal risk associated with the government guarantee appears limited: the 70-year lock-in restricts payouts to retiring cohorts, while the low probability of terminal losses implies modest expected fiscal costs (for Italy, about €13 million a year under full enrollment of a cohort, less than 0.001% of GDP, and at most about 0.13% of GDP in a year in which a retiring cohort lost its entire fund). If ECEF was adopted at the EU level an EU-wide guarantee could further mitigate sovereign risk by pooling exposure across member states.

investment arrangements, restrictions on withdrawals, and public or regulated management) provide natural benchmarks for thinking about alternative versions of the fund. Public contributions may reduce the private cost of contributing; downside guarantees may make equity investment more attractive to risk-averse households; public management may reduce complexity and alleviate distrust; and withdrawal rules determine how strongly the account operates as a long-term commitment device. Finally, information about accumulated long-run returns may make the benefits of equity investment more salient. Our randomized treatments vary these features to identify which of them are most effective in attracting households that currently remain outside the stock market.

All respondents then answer the same set of outcome questions. First, they report whether the description of the fund and its features is clear. Second, they state whether they would subscribe to the ECEF for a child or grandchild. Third, they report the annual amount they would be willing to contribute, with zero allowed for respondents who do not wish to subscribe. Fourth, they are asked how they would allocate the €1,000 government transfer currently available in Italy at the birth of a child (which we term here *Newborn Bonus*). Respondents indicate whether they would invest all the transfer in the ECEF, invest part of it, invest none of it, or are unsure; those choosing partial investment also report the amount they would allocate to the fund.

The main outcome variables are whether the respondent is willing to invest in the ECEF and, if so, the amount they would contribute, capturing the extensive and intensive margins of take-up. The additional outcome includes the share of the Newborn Bonus allocated to the ECEF. The experimental design therefore allows us to identify which features of the fund increase or reduce willingness to invest on the extensive and intensive margin.

Table 1 summarizes the experimental design, while Appendix B.1 reports the full questions asked. The five treatments isolate four potential determinants of demand for ECEF: personalized information, downside protection, public co-financing, and liquidity. Each treatment modifies a single feature relative to the common baseline, allowing differences in subscription and contribution decisions across groups to be interpreted as the effect of that specific fund characteristic. Random assignment to equally sized groups ensures comparability across treatments. Table 2 summarizes the second experiment.

3.3 Respondents' characteristics and balance test

ISCE routinely collects a broad set of respondent characteristics, including demographics, education, household composition, income and wealth, financial-market participation, and measures of preferences and trust. These variables are useful for examining why households that do not currently participate in the stock market may nevertheless be willing to invest in the ECEF. Risk tolerance is measured by respondents' self-assessed willingness to take risks on a scale from 1 (completely unwilling) to 10 (completely willing), following Dohmen et al. (2011). Patience is measured on a similar 1–10 scale by asking respondents how willing they are to give up something today in order to obtain a benefit in the future. We also elicit trust

Table 1: Experiment design in Wave 11 (April 2026)

Group	Treatment	What varies relative to baseline	Purpose
T1	Baseline	Standard FAEB description only.	Benchmark willingness to subscribe and contribute.
T2	Personalized information	Adds the counterfactual value the respondent would have accumulated if enrolled at birth.	Tests whether personal, age-specific information changes demand.
T3	Guarantee	Adds a State guarantee: losses below contributions are covered; a small share of gains is retained.	Tests demand for downside protection.
T4	State contribution	The government pays EUR60 of the EUR120 annual contribution during the first 18 years.	Tests the effect of public co-financing.
T5	Liquidity	Allows the adult beneficiary to liquidate the fund early at any time.	Tests the role of withdrawal flexibility.

Notes: The common information shown to all groups is: respondents are introduced to the European Child Equity Fund (FAEB), a zero-fee, tax-exempt fund opened for children aged 0-5, with annual contributions of EUR120, reinvested returns, total contributions of EUR8,400 over 70 years, and expected value at age 70 of about EUR150,000. The sample is divided into five random groups of equal size, homogeneous by gender, age, and geographical area.

in financial markets and trust in EU institutions, both on scales from 1 (no trust) to 10 (a great deal of trust).

Table 3 reports weighted descriptive statistics for the 5,007 respondents in the Wave 11 experimental sample. The sample is balanced by gender, with women accounting for just over half of respondents. Average household size is 2.8, 19% of respondents hold a college degree, and 77% are homeowners. Average trust is relatively modest, at 4.1 for financial markets and 4.5 for EU institutions on the 1–10 scales. Most importantly for our purposes, participation in financial markets is limited, as only about one in five respondents (21.8%) currently own stocks, leaving substantial scope for the ECEF to broaden stock-market participation.

The table also provides a first description of responses to the experiment. Overall, 35.9% of respondents say that they would contribute to the ECEF, while 25.1% say they would not and 39.0% remain undecided. The relatively large fraction of undecided respondents suggests that there may be considerable scope for the information and design features studied in

Table 2: Experiment design in Wave 12 (July 2026)

G1	**Baseline: 1-year horizon**	**EUR100 invested is worth EUR107 on average after one year; the probability of loss is 40% and the probability of gain is 60%.**	**Benchmarks willingness to invest when equity returns and risk are framed over a short horizon.**
G2	15-year horizon	EUR100 invested is worth EUR260 on average after 15 years; the probability of loss is 15% and the probability of gain is 85%	Tests whether presenting equity investment over a longer horizon increases willingness to invest and the amount invested.
G3	30-year horizon	EUR100 invested is worth EUR660 on average after 30 years; the probability of loss is 7% and the probability of gain is 93%.	Tests whether a very long investment horizon further increases willingness to invest as the probability of loss declines.

Notes: All respondents are presented with the same diversified European equity fund, managed by an independent non-profit European authority, with zero fees, tax-exempt and reinvestable returns, and full liquidity. The expected annual return is 6.5%. Treatments differ only in the horizon over which returns and downside risk are presented. Respondents are randomly assigned to the three groups, which are proportionally balanced by gender, age, and geographical area. The main outcomes are willingness to subscribe to the fund and, conditional on subscribing, the amount respondents would choose to invest

the experiment to affect take-up decisions. About half of respondents choose to watch the explanatory video. When asked about the €1,000 Newborn Bonus, 27.3% would invest the entire amount in the ECEF and a further 22.8% would invest part of it.

Random assignment generated comparable treatment groups: Table A1 in Appendix B shows that none of the pre-treatment characteristics differs across the five groups at the 5% level, so that differences in outcomes across treatment groups reflect only the experimental treatments.

4 Empirical approach

This section describes the specification used to estimate the treatment effects and the dimensions of heterogeneity we explore.

The core specification estimates intention-to-treat effects:

$$Y_i = \alpha + \beta_2 T_{2i} + \beta_3 T_{3i} + \beta_4 T_{4i} + \beta_5 T_{5i} + X_i'\gamma + \varepsilon_i \tag{1}$$

Table 3: Descriptive statistics

	Total sample	Non stockholders	Stockholders
Male	0.50	0.46	0.64
Age 35 to 50	0.28	0.29	0.27
Age 51 to 65	0.36	0.36	0.37
Age 66 to 75	0.12	0.11	0.15
Family size	2.82	2.84	2.77
College degree	0.19	0.16	0.30
North	0.46	0.42	0.60
Centre	0.20	0.20	0.21
Financial wealth	23.94	17.95	45.40
Homeowner	0.77	0.74	0.88
Child	0.03	0.04	0.03
Grandchild	0.09	0.09	0.10
Grandchild future	0.09	0.08	0.12
Trust in financial markets	4.12	3.83	5.18
Trust in EU institutions	4.51	4.32	5.18
Risk tolerant	0.41	0.36	0.58
Patient	0.66	0.64	0.76
Stockholder	0.22	0.00	1.00
Outcomes of survey experiment			
Willing to contribute	0.36	0.32	0.49
Not willing to contribute	0.25	0.26	0.21
DK if contribute	0.39	0.41	0.30
Amount of contribution, unconditional	107.46	86.41	182.77
Amount of contribution, conditional	299.49	267.37	375.87
Video	0.50	0.48	0.56
More willing after video	0.15	0.15	0.17
Less willing after video	0.07	0.07	0.08
Same willing after video	0.71	0.71	0.71
DK after video	0.07	0.08	0.04
Bonus all	0.27	0.24	0.39
Bonus part	0.23	0.22	0.26
Bonus no	0.26	0.28	0.18
Bonus DK	0.24	0.26	0.17

Notes: The table reports weighted means for the full sample and separately for non-stockholders and stockholders. Statistics are computed using the survey sampling weights. Financial wealth is expressed in thousands of euros. The unconditional contribution amount is set to zero for respondents unwilling to contribute, whereas the conditional contribution amount is computed only among respondents reporting a positive contribution. The full sample includes 5,007 respondents assigned to the five experimental groups (T1–T5).

(1)

where Y_i denotes one of the outcomes described above. Depending on the outcome, Y_i can be a binary indicator, for instance, whether the respondent is willing to invest in the ECEF or a continuous variable, such as the desired annual contribution allocated to the fund, such as the desired annual contribution or the share of the Newborn Bonus allocated to the fund. For the continuous variables, when appropriate, we estimate a Tobit model.

The variables T_{2i} through T_{5i} are indicators for the four treatments, with T1, the baseline ECEF, as the omitted category. X_i includes pre-treatment characteristics and the variables used to stratify random assignment. Because treatment assignment is randomized, estimates without controls identify the treatment effects; including X_i serves primarily to improve precision and provides a robustness check.

The coefficients $\beta_2, \ldots, \beta_5$ measure the causal effect of each treatment relative to the baseline ECEF. Thus, β_2 captures the effect of making the long-run returns to the fund more personal and salient; β_3 the effect of providing downside protection through a government guarantee; β_4 the effect of the public co-contribution; and β_5 the effect of relaxing the withdrawal restriction. For binary outcomes, we estimate probit models and report average marginal effects. For contribution amounts and other bounded outcomes, we also use two-limit Tobit models to account for censoring and mass points at the bounds. We also estimate equation (1) separately for stockholders and non-stockholders and for respondents with cash on hand above and below the sample median.

5 Results

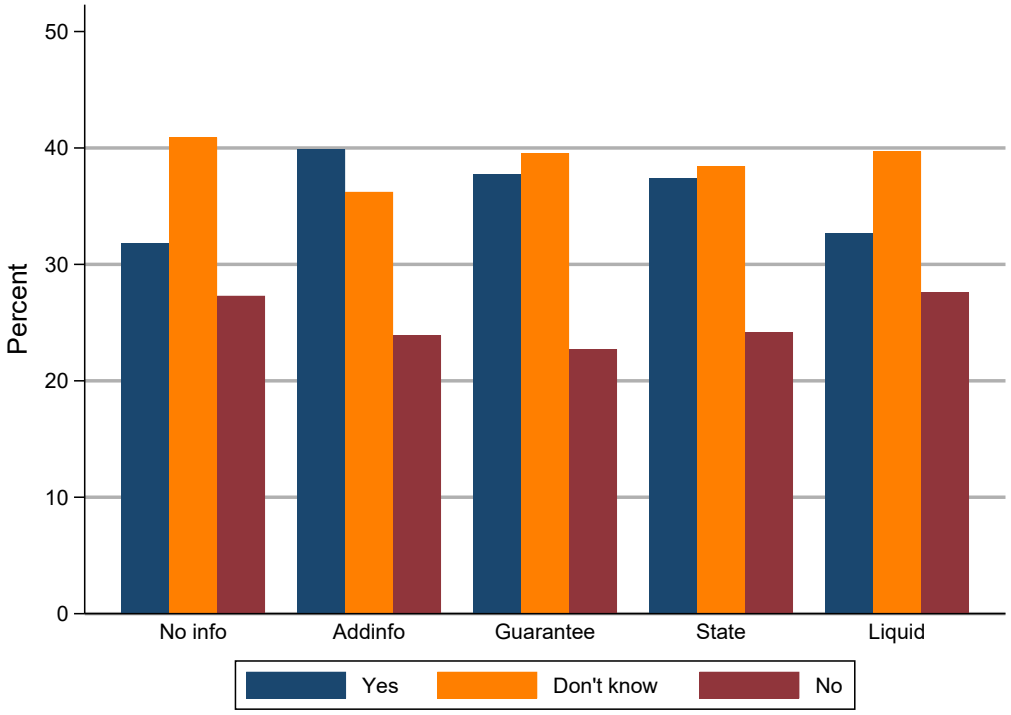
This section reports the effects of the treatments on the extensive margin of take-up (Section 5.1), on the intensive margin of contributions (Section 5.2), and on the allocation of the Newborn Bonus (Section 5.3).

5.1 Extensive margin

Before turning to the regression estimates, we examine average willingness to invest in the ECEF across treatment groups. Figure 2 reports, for each of the five groups, the shares of respondents who are willing to invest, unwilling to invest, or undecided. In the baseline group, 34% of respondents are willing to invest in the ECEF. This is already substantial given that only 21.8% of respondents in the sample currently own stocks, suggesting that the baseline ECEF attracts a sizeable number of households with no previous direct exposure to the stock market.

Figure 2 points to two conclusions. First, much of the appeal of the ECEF comes from the baseline product itself. Second, among the additional design features, personalized information about long-run accumulated returns appears to have the strongest effect. Government insurance and public co-financing also produce sizeable increases in take-up, while greater

Figure 2: Willingness to contribute to ECEF, by treatment group



Notes: Bars report weighted group means for the three response categories to the willingness-to-contribute question: Yes, Don't know, and No. Shares are expressed in percent and computed after collapsing the respondent-level data by treatment group. T1 is the baseline group ("No info"); T2 provides personalized/additional information ("Addinfo"); T3 adds the capital guarantee ("Guarantee"); T4 adds the state co-contribution ("State"); and T5 adds the liquidity option ("Liquid").

withdrawal flexibility has little effect.

Another notable feature is the large share of respondents who remain undecided. In the baseline group, 39% report that they do not know whether they would subscribe, compared with 27% who explicitly reject the fund. The personalized information treatment produces the largest shift in take-up: when respondents are shown what the fund would be worth today had they invested in an ECEF since birth, the share willing to subscribe rises to 40%. Both the government guarantee and the public co-contribution also increase subscription relative to the baseline, mostly by attracting respondents who would not otherwise have subscribed. Allowing the beneficiary to withdraw the fund after reaching adulthood produces little visible change in take-up. The regression analysis below assesses the magnitude and statistical significance of these differences.

Table 4 reports the estimated effects of the four treatments on willingness to contribute to the ECEF. Column 1 includes the treatment indicators only, while column 2 adds the pre-treatment demographic and financial controls. Personalized information (T2) has the largest effect, increasing the probability of contributing by 7.6 percentage points relative to the baseline group. The government guarantee (T3) raises take-up by 5.3 percentage points, while the State co-contribution (T4) has a smaller effect of 4.0 percentage points, significant

at the 10% level. By contrast, greater withdrawal flexibility (T5) has essentially no effect on take-up. Adding the controls leaves the treatment effects little changed: the estimates for T2 and T3 are 7.6 and 5.5 percentage points, respectively, while the effect of T4 falls modestly to 3.6 percentage points and remains significant at the 10% level. This stability is consistent with successful randomization.

Table 4: Baseline probit regressions

	No controls	With controls		With controls
T2 Addinfo	0.08***	0.08***	North	0.00
	(0.02)	(0.02)		(0.01)
T3 Guarantee	0.05**	0.06***	Centre	0.03
	(0.02)	(0.02)		(0.02)
T4 State	0.04*	0.04*	Financial wealth	0.002***
	(0.02)	(0.02)		(0.00)
T5 Liquid	0.01	0.01	Homeowner	0.05***
	(0.02)	(0.02)		(0.02)
Male		0.07***	Child	0.11***
		(0.01)		(0.04)
Age 35 to 50		-0.03	Grandchild	0.10***
		(0.02)		(0.02)
Age 51 to 65		-0.05**	Grandchild future	0.12***
		(0.02)		(0.02)
Age 66 to 75		-0.01	Trust in financial markets	0.02***
		(0.03)		(0.004)
Family size		0.02***	Trust in EU institutions	0.02***
		(0.01)		(0.003)
College degree		0.02	Risk tolerant	0.00
		(0.01)		(0.01)
			Patient	0.11***
				(0.01)
Baseline T1	0.34	0.34		
N	5,007	5,007		

Notes: The dependent variable is an indicator equal to one if the respondent is willing to contribute to the ECEF. Reported coefficients are average marginal effects from probit regressions. Column 1 includes the treatment indicators T2–T5, with T1 as the omitted baseline category. Column 2 adds the pre-treatment demographic and financial controls reported in the table. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The controls also reveal several plausible correlates of ECEF take-up. Take-up is higher among men, respondents with greater cash on hand, homeowners, patient respondents, and those reporting greater trust in financial markets and EU institutions, broadly consistent with recent evidence on the determinants of stock-market participation in Europe (Christelis et al.,

2026). Take-up is also substantially higher among respondents with a potential beneficiary (a child or grandchild, or those expecting to have a grandchild in the future) suggesting that concern for the long-term welfare of younger family members is an important determinant of take-up in a voluntary program of this kind. Even though including these controls has only a limited effect on the estimated treatment effects, we retain them in the subsequent specifications. For brevity, however, we generally do not report the control coefficients.

Table 5 explores heterogeneity in willingness to invest in the ECEF, splitting the sample between stockholders and non-stockholders (columns 1 and 2) and between respondents with financial wealth above and below the sample median (columns 3 and 4).[4] These distinctions are particularly relevant for a child-equity-fund policy whose objective is to broaden stock-market participation among households with limited exposure to equities and fewer financial resources.

Table 5: Treatment effects by stock market participation and financial wealth

	Stockholders	Non-stockholders	High wealth	Low wealth
T2 Addinfo	0.04	0.09***	0.03	0.11***
	(0.04)	(0.02)	(0.03)	(0.03)
T3 Guarantee	0.01	0.07***	0.03	0.07***
	(0.04)	(0.02)	(0.03)	(0.03)
T4 State	-0.06	0.07***	-0.01	0.08***
	(0.04)	(0.02)	(0.03)	(0.03)
T5 Liquid	-0.03	0.03	-0.02	0.04
	(0.04)	(0.02)	(0.03)	(0.03)
N	1,225	3,782	2,313	2,694
Baseline T1	0.52	0.28	0.42	0.26

Notes: The dependent variable is an indicator equal to one if the respondent is willing to contribute to the ECEF. Reported coefficients are average marginal effects from probit regressions estimated separately for the indicated subsamples. T1 is the omitted baseline group, and treatment effects for T2–T5 are therefore measured relative to T1. The first two columns split the sample by stock-market participation; the last two split respondents by financial wealth. The row "Baseline T1" reports the mean of the dependent variable in the T1 group within each estimation sample. All specifications include the demographic controls used in the baseline regressions. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Two patterns emerge clearly. First, baseline subscription is strongly associated with prior financial-market participation and wealth. Among stockholders, 51.7% are willing to invest in the baseline ECEF, compared with 28.2% of non-stockholders. Similarly, baseline

[4]Consistent with previous evidence in the household-finance literature, stock-market participation in our sample is strongly associated with financial wealth, trust, and risk tolerance. Relative to respondents in the first wealth quartile, the probability of holding stocks is 17.4 percentage points higher in the second quartile, 21.9 points higher in the third, and 35.5 points higher in the top quartile. Risk-tolerant respondents are 9.0 percentage points more likely to hold stocks, while each additional point of trust in financial markets is associated with a 3.1 percentage point increase in the probability of stockholding.

take-up is 42.5% among high-wealth respondents but only 26.0% among those with financial wealth below the median. The willingness of more than one-quarter of non-stockholders and low-wealth respondents to invest even in the baseline fund is itself notable, since these are precisely the groups that are least likely to hold equities through conventional channels.

Second, the response to the additional fund features is concentrated among these groups. Among stockholders, none of the four treatment effects is statistically significant. Among non-stockholders, by contrast, personalized information raises take-up by 8.8 percentage points, the government guarantee by 6.8 points, and the State co-contribution by 6.7 points, all statistically significant at the 1% level. These effects increase predicted take-up from a baseline of 28.2% to approximately 37%, 35%, and 35%, respectively. Greater liquidity has a smaller effect of 3.0 percentage points and is not statistically significant. One interpretation is that information on long-run accumulated returns and the additional protection or subsidy offered by T3 and T4 provide relatively little new value to households already familiar with equity investment, but substantially increase its attractiveness to households currently outside the stock market.

The wealth split reinforces this interpretation. None of the treatments has a statistically significant effect among respondents with above-median financial wealth. Among low-wealth respondents, however, personalized information increases take-up by 11.4 percentage points, while the guarantee and State co-contribution increase it by 7.5 and 7.9 points, respectively. Starting from a baseline rate of 26.0%, these treatments raise predicted take-up to about 34–37%. The liquidity treatment again has a smaller effect, 4.4 percentage points, which is not statistically significant. Thus, the treatments that make long-run returns more salient, protect against downside risk, or reduce the private cost of investing are most effective among households that are currently least exposed to financial markets.

The evidence therefore supports the central objective of child equity funds: broadening stock-market participation among households that are currently less exposed to equities. This is especially relevant because the strongest responses come from non-stockholders and low-wealth respondents. Among these groups, personalized information is particularly effective, indicating that disclosing long-run equity returns materially increases the appeal of the ECEF. Section 6 shows that these effects are even more concentrated among non-stockholders with low financial wealth.

We next distinguish between negative and uncertain responses. When asked whether they would contribute to the ECEF, respondents can answer "Yes," "No," or "Don't know." The binary probit estimates reported above combine the latter two responses into a single category and therefore cannot distinguish between outright rejection of the fund and uncertainty about whether to subscribe. We address this issue by estimating a multinomial logit model with the three response categories. Table 6 reports the average marginal effect of each treatment on the probabilities of answering "No," "Don't know," and "Yes." In the baseline T1 group, 33.9% of respondents are willing to contribute, 27.1% are unwilling, and 39.0% are undecided.

The results reveal different mechanisms across treatments. Personalized information (T2) raises the probability of answering "Yes" by 7.6 percentage points. This increase is

Table 6: Treatment effects on willingness to contribute: Multinomial Logit

	Pr(No)	Pr(Don't know)	Pr(Yes)
T2 Addinfo	-4.06**	-3.53	7.59***
	(1.92)	(2.18)	(2.16)
T3 Guarantee	-5.02***	-0.28	5.30**
	(1.93)	(2.16)	(2.17)
T4 State	-2.62	-1.40	4.03*
	(1.91)	(2.18)	(2.19)
T5 Liquid	-0.22	-0.32	0.54
	(1.88)	(2.17)	(2.21)
Observations	5,007	5,007	5,007
Baseline T1	27.10	39.00	33.90

Notes: The table reports average marginal effects from multinomial logit regressions in which the dependent variable distinguishes among three responses to the question on willingness to contribute to the ECEF: No, Don't know, and Yes. T1 is the omitted baseline treatment, so the reported marginal effects for T2–T5 are measured relative to T1. Each column reports the effect of the treatment on the probability of the corresponding response category. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Marginal effects and standard errors are in percentage points.

associated with a 4.1 percentage point reduction in outright "No" responses and a 3.5 point reduction in "Don't know" responses, although only the former is statistically significant. Thus, personalized information appears to operate both by making the fund more attractive to respondents who would otherwise reject it and by reducing indecision. The government guarantee (T3) raises the probability of answering "Yes" by 5.3 percentage points and reduces "No" responses by 5.0 points, while leaving the probability of answering "Don't know" essentially unchanged. The guarantee therefore appears primarily to convert negative responses into positive ones rather than to resolve uncertainty.

The State co-contribution (T4) raises the probability of answering "Yes" by 4.0 percentage points, significant at the 10% level, with smaller declines in both "No" and "Don't know" responses that are not individually statistically significant. By contrast, the liquidity treatment (T5) has virtually no effect on any response category. The multinomial results reinforce the main findings of the binary analysis while providing additional insight into the mechanisms involved: personalized information affects both rejection and uncertainty, whereas the government guarantee operates almost entirely by reducing outright rejection of the ECEF.

5.2 Intensive margin

Individuals are also asked how much they would be willing to contribute to the ECEF. Although the baseline description proposes an annual contribution of €120, respondents are

free to choose any amount, including zero if they do not wish to invest. To help them assess the long-run implications of their choice, they are told that an additional €10 contributed each year from birth would increase the expected fund value at age 70 by about €12,500. In the baseline treatment group, the average annual contribution, conditional on contributing, is €300. Among respondents reporting a positive contribution, 92% would contribute at least €100 per year, 80% at least €120, 64% more than €120, and 31% at least twice the proposed baseline contribution of €120.

Table 7 reports average marginal effects from Tobit models for the desired annual contribution to the ECEF. The first two columns refer to the full sample, without and with controls, respectively; the third restricts the sample to non-stockholders, and the fourth to respondents with financial wealth below the sample median. Columns 2–4 include the full set of demographic and household controls, although, the table reports only selected covariates of particular interest. The treatment effects closely parallel those found for the extensive margin. In the full sample, personalized information increases the annual contribution by about €38, the government guarantee by about €30, and the State co-contribution by about €39. All three effects are statistically significant at the 1% level and are economically sizeable relative to the baseline contribution of €93. By contrast, greater liquidity has a small and statistically insignificant effect. The treatment coefficients are very similar with and without controls, consistent with the randomized design.

The selected controls reported in the table point to several additional determinants of contribution size. Contributions rise significantly with financial wealth and are higher among respondents with a current or prospective family beneficiary. In the full sample, having a child or a grandchild is associated with contributions that are about €33 higher, while respondents expecting a grandchild contribute about €55 more. Trust also matters: each additional point of trust in financial markets is associated with roughly €9 more in annual contributions, and each additional point of trust in EU institutions with about €10 more. Risk-tolerant respondents contribute about €19 more, while patient respondents contribute about €57 more. The particularly large association with patience is consistent with the very long horizon of the ECEF, which requires respondents to trade off current resources against benefits accruing far in the future.

The results for non-stockholders are especially informative. The effects of personalized information, the guarantee, and the State co-contribution remain large and statistically significant, at approximately €37, €32, and €40, respectively. These magnitudes are close to those estimated in the full sample, while the effect of greater liquidity remains small and insignificant. Thus, the stronger extensive-margin response of non-stockholders documented in Table 5 is accompanied by a sizeable response in the amount they are willing to contribute.

The effects are largest among respondents with low financial wealth. Personalized information raises annual contributions by about €64, the government guarantee by €43, and the State co-contribution by €63. These effects are substantially larger than in the full sample and are all significant at the 1% level. Greater liquidity again has a positive but statistically insignificant effect. Taken together with the results in Table 5, the evidence

Table 7: Regressions for amount of contribution

	Total sample			
	No controls	Controls	Non-stockholders	Low wealth
T2 Addinfo	35.49***	38.04***	37.23***	64.34***
	(11.44)	(11.25)	(10.20)	(17.37)
T3 Guarantee	29.54**	30.18***	31.74***	43.37***
	(11.56)	(10.87)	(11.01)	(15.58)
T4 State	40.09***	39.09***	40.32***	62.90***
	(13.32)	(12.83)	(12.64)	(18.82)
T5 Liquid	0.16	5.23	7.55	17.59
	(10.86)	(10.33)	(9.98)	(14.27)
Financial wealth		0.76***	0.55***	3.00***
		(0.15)	(0.17)	(1.00)
Child		33.22**	37.95**	22.69
		(16.28)	(16.18)	(22.20)
Grandchild		32.52***	18.19*	14.64
		(11.15)	(10.85)	(15.68)
Grandchild future		55.13***	45.63***	70.25***
		(13.40)	(15.49)	(18.99)
Trust in financial markets		8.88***	5.17**	6.55**
		(2.39)	(2.21)	(3.00)
Trust in EU institutions		9.80***	9.22***	10.38***
		(2.15)	(2.21)	(2.75)
Risk tolerant		19.19**	5.89	15.93
		(8.21)	(8.26)	(11.16)
Patient		56.96***	51.68***	62.93***
		(9.14)	(8.79)	(12.48)
Observations	5,007	5,007	3,782	2,694
Baseline T1	93.17	93.17	70.30	63.26

Notes: The dependent variable is the annual amount respondents are willing to contribute to the ECEF, in euros. The table reports average marginal effects from Tobit regressions, with contributions censored at zero. T1 is the omitted baseline group, so the coefficients on T2–T5 measure treatment effects relative to T1. Column (1) includes no additional controls. Columns (2)–(4) include the full set of demographic and household controls. To conserve space, coefficients on gender, age, household size, education, region of residence, and homeownership are included in the regressions but not reported in the table. Column (3) restricts the sample to non-stockholders, and column (4) to low-wealth respondents. "Baseline T1" reports the mean contribution among respondents assigned to T1 within each estimation sample. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

indicates that the treatments operate on both the extensive and intensive margins and that their strongest effects are concentrated among households with limited financial resources. In particular, making long-run returns more salient, reducing downside risk, and lowering the private cost of contributing appear especially effective in encouraging these households to invest in the ECEF.

5.3 Newborn Bonus destination

Participants are also asked how much of the €1,000 Newborn Bonus they would invest in the European Child Equity Fund if given this option. The share can range from zero to one, depending on whether respondents would use the entire bonus immediately or allocate some or all of it to the ECEF. About 47.8% would invest none of the bonus, 29.2% would invest the full amount, and 23.0% would invest only part of it. Among those choosing a partial allocation, the average share invested is about 40% of the bonus. We test whether this allocation responds to the treatments using a two-limit Tobit model, accounting for censoring at zero and one.

Table 8 reports average marginal effects from two-limit Tobit models for the share of the €1,000 Newborn Bonus allocated to the ECEF. The first two columns refer to the full sample, without and with controls, while columns 3 and 4 restrict the sample to non-stockholders and respondents with financial wealth below the sample median. The specifications with controls include the full set of demographic and household characteristics, although the table reports only selected covariates of particular interest.

The main results closely mirror those for willingness to subscribe and contribution amounts. In the full sample, personalized information (T2) increases the share of the Bonus allocated to the ECEF by about 4.9 percentage points, while the government guarantee (T3) raises it by 5.7 points. Relative to the baseline allocation of 35.5%, these correspond to increases of roughly 14% and 16%, respectively. The State co-contribution (T4) has a smaller effect of about 3.1 percentage points, significant only at the 10% level once controls are included, while the coefficient of the liquidity treatment (T5) is small and statistically insignificant. The estimates are very similar with and without controls.

The effects are stronger among households with less exposure to financial markets. Among non-stockholders, T2 and T3 raise the share invested by 7.4 and 7.7 percentage points, respectively, relative to a baseline allocation of 30.1%. The State co-contribution also has a sizeable effect of 5.8 percentage points and is significant at the 1% level. Among low-wealth respondents, personalized information raises the share invested by 6.2 percentage points and the guarantee by 7.6 points, relative to a baseline of 28.3%; the effect of the State co-contribution is smaller and not statistically significant. Greater liquidity again has no significant effect in either subsample.

Table 8: Treatment effects on the share of the Bonus Bebè allocated to the ECEF

	Tobit	Tobit with controls	Non-stockholders	Low wealth
T2 Addinfo	4.84**	4.93***	7.40***	6.24**
	(1.92)	(1.82)	(2.07)	(2.44)
T3 Guarantee	5.55***	5.74***	7.71***	7.57***
	(1.93)	(1.82)	(2.06)	(2.36)
T4 State	3.07	3.07*	5.75***	3.73
	(1.96)	(1.85)	(2.13)	(2.46)
T5 Liquid	0.85	1.60	2.91	2.73
	(1.95)	(1.84)	(2.08)	(2.42)
Child		0.68	-0.003	0.38
		(3.22)	(3.53)	(4.00)
Grandchild		3.36	3.55	2.67
		(2.26)	(2.61)	(3.05)
Grandchild future		10.30***	11.90***	11.20***
		(2.20)	(2.55)	(2.99)
Trust in financial markets		1.27***	1.22***	1.39***
		(0.36)	(0.41)	(0.47)
Trust in EU institutions		1.84***	1.79***	1.96***
		(0.32)	(0.36)	(0.42)
Risk tolerant		1.53	-0.62	0.84
		(1.32)	(1.50)	(1.77)
Patient		10.60***	11.60***	10.90***
		(1.43)	(1.58)	(1.85)
Observations	5,007	5,007	3,782	2,694
Baseline T1	35.50	35.50	30.10	28.30

Notes: The dependent variable is the share of the Bonus Bebè that respondents would allocate to the ECEF, ranging from zero to one. The table reports average marginal effects from Tobit regressions, with the dependent variable censored at zero and one. T1 is the omitted baseline group, so the coefficients on T2–T5 measure treatment effects relative to T1. Column (1) reports estimates for the full sample without controls; column (2) adds the full set of controls; column (3) restricts the sample to non-stockholders; and column (4) to low-wealth respondents. The specifications with controls include gender, age, household size, education, geographical area, and homeownership; to conserve space, the coefficients on these variables are not reported in the table. "Baseline T1" reports the mean of the dependent variable among respondents assigned to T1 within each estimation sample. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively. Marginal effects and standard errors are in percentage points.

5.4 Information processing and treatment responses

To examine whether responses vary with perceived clarity, respondents are asked, after reading the ECEF description and treatment-specific information, how clear they found the information, choosing among "Very clear," "Fairly clear," "Somewhat clear," and "Not at all clear." We classify the first two responses as indicating clear information; about 59%

of respondents fall into this category. Since the treatments operate through information about specific fund features, their effects may be attenuated when respondents do not fully understand the information provided.

Clear communication appears to strengthen the effectiveness of ECEF incentives. Although perceived clarity is not randomly assigned, the results suggest that simple, transparent explanations of returns, guarantees, public co-contributions, and withdrawal rules can complement the financial design of the program. To examine whether responses to the experiment vary with the perceived clarity of the information provided. After reading the description of ECEF and the treatment-specific information, respondents are asked how clear they found the description, choosing among four answers: "Very clear," "Fairly clear," "Somewhat clear," and "Not at all clear." We classify the first two responses as indicating that the information was clear. About 59% of respondents fall into this category. Because the treatments operate by providing information about specific features of the fund, treatment effects may be attenuated when respondents do not fully understand the information they receive.

Table 9 compares the treatment effects in the full sample with those obtained among respondents who report that the information was clear and repeats the exercise for non-stockholders. Two patterns emerge. First, willingness to contribute is substantially higher among respondents who perceive the information as clear even in the baseline group. In the full sample, the T1 take-up rate rises from 33.9% to 49.2% when the sample is restricted to respondents reporting clear information. Among non-stockholders, it rises from 28.2% to 42.7%.

Table 9: Treatment effects by information clarity and stock market participation

	Total sample	Information clear	Non-stockholders	Non-stockholders, information clear
T2 Addinfo	0.07***	0.09***	0.09***	0.11***
	(0.02)	(0.03)	(0.02)	(0.03)
T3 Guarantee	0.05***	0.08***	0.07***	0.09***
	(0.02)	(0.03)	(0.02)	(0.03)
T4 State	0.04*	0.06**	0.07***	0.10***
	(0.02)	(0.03)	(0.02)	(0.04)
T5 Liquid	0.01	0.04	0.03	0.06*
	(0.02)	(0.03)	(0.02)	(0.03)
N	5,007	2,934	3,782	2,104
Baseline T1	0.34	0.49	0.28	0.43

Notes: The dependent variable is an indicator equal to one if the respondent is willing to contribute to the ECEF. The table reports average marginal effects from probit regressions. T1 is the omitted baseline group, so the reported effects for T2–T5 are measured relative to T1. Column (1) reports estimates for the full sample; column (2) restricts the sample to respondents who report that the information about the ECEF is clear; column (3) restricts the sample to non-stockholders; and column (4) to non-stockholders who report that the information is clear. All specifications include the demographic and household controls used in the baseline regressions; their coefficients are not reported in the table. "Baseline T1" reports the mean of the dependent variable among respondents assigned to T1 within each estimation sample. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

Second, the estimated treatment effects are generally larger among respondents who perceive the information as clear. In the full sample, the effect of personalized information (T2) rises from 7.5 to 9.0 percentage points, that of the guarantee (T3) from 5.4 to 7.7 points, and that of the State co-contribution (T4) from 3.6 to 6.4 points; the latter becomes statistically significant at the 5% level. The liquidity treatment (T5) also increases, from 1.2 to 4.2 points, although it remains statistically insignificant. The pattern is similar among non-stockholders: the effects of T2, T3, and T4 rise respectively from 8.8 to 10.7, 6.8 to 8.9, and 6.7 to 9.5 percentage points. The effect of liquidity increases from 3.0 to 6.2 percentage points and becomes statistically significant at the 10% level.

6 What drives non-stockholders' willingness to invest in ECEF?

In this section, we explore the mechanisms that may account for the high willingness to contribute to ECEF that we observe in our survey experiment. In particular, we ask whether the design of ECEF (both in its baseline form and through the features introduced by the treatments) attenuates some of the frictions that discourage conventional stock-market participation. Drawing on the literature on the stock-market participation puzzle, we consider three broad explanations: lifting participation costs, attenuating mis-trust, and appealing to investors with non-expected-utility preferences. This analysis therefore also provides indirect evidence on which frictions are most relevant for explaining non-participation in equity markets. Throughout the section, we focus on respondents who do not currently own stocks, who account for roughly three quarters of the sample. We exploit both heterogeneity in observable characteristics and the randomized treatments to assess the empirical relevance of each of these mechanisms.

6.1 Fixed participation costs

Starting with Vissing-Jørgensen (2002), a large literature emphasizes fixed participation costs as an explanation for the stockholding puzzle. If entering the stock market entails a fixed cost, an individual compares this cost with the expected benefit of investing in equities rather than in a safe asset. Because this benefit generally increases with the amount invested, fixed-cost models imply a wealth threshold below which stock-market participation is unattractive. This mechanism can rationalize one of the most robust features of household portfolios: stock-market participation rises strongly with wealth (e.g., Guiso et al., 2002; Campbell, 2006; Guiso and Sodini, 2013). The participation threshold can be lowered by reducing participation costs, increasing the expected payoff from equity investment, or reducing its perceived risk.

To assess whether this mechanism helps explain the appeal of the ECEF, we restrict the sample to non-stockholders and estimate the take-up equation separately for respondents

with financial wealth below and above the sample median. Table 10 reports the results. Even under the baseline treatment, willingness to invest is strongly related to wealth: 24.4% of low-wealth non-stockholders are willing to subscribe, compared with 34.5% of high-wealth non-stockholders. This difference is consistent with the well-documented positive association between wealth and stock-market participation.

Table 10: Treatment effects among non stockholders: heterogeneity by wealth and trust in finance

	Low wealth	High wealth	Low trust	High trust
T2 Addinfo	0.10***	0.06	0.12***	0.04
	(0.03)	(0.04)	(0.03)	(0.04)
T3 Guarantee	0.08***	0.06	0.06**	0.08**
	(0.03)	(0.04)	(0.03)	(0.04)
T4 State	0.09***	0.03	0.10***	0.02
	(0.03)	(0.04)	(0.03)	(0.04)
T5 Liquid	0.05*	-0.004	0.03	0.03
	(0.03)	(0.04)	(0.03)	(0.04)
N	2,390	1,392	2,159	1,623
Baseline T1	0.24	0.34	0.21	0.39

Notes: The sample is restricted to respondents who do not hold stocks. The dependent variable is an indicator equal to one if the respondent is willing to contribute to the ECEF. The table reports average marginal effects from probit regressions estimated separately by financial wealth and trust in financial markets. Columns (1) and (2) split respondents according to whether financial wealth is below or above the sample median. Columns (3) and (4) split respondents according to trust in financial markets: high-trust respondents are those with a trust score above 5 on the 1–10 scale, while low-trust respondents have a score of 5 or below. T1 is the omitted baseline group, so the reported effects for T2–T5 are measured relative to T1. All specifications include the demographic and household controls used in the baseline regressions; their coefficients are not reported. "Baseline T1" reports the mean of the dependent variable among respondents assigned to T1 within each estimation sample. Robust standard errors are reported in parentheses. ***, **, and * denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The treatment responses are also markedly different across the two groups. Among low-wealth non-stockholders, personalized information (T2) increases take-up by 10.5 percentage points, the government guarantee (T3) by 7.9 points, and the State co-contribution (T4) by 8.9 points; all three effects are significant at the 1% level. Greater liquidity (T5) raises take-up by 5.1 percentage points and is significant at the 10% level. Among high-wealth non-stockholders, by contrast, none of the four treatment effects is statistically significant, and the point estimates are generally smaller.

The magnitudes are economically sizeable. Starting from a baseline take-up rate of 24.4%, personalized information raises predicted take-up among low-wealth non-stockholders to about 35%, while the guarantee and the State co-contribution raise it to roughly 32–33%. These treatments therefore close most of the initial take-up gap relative to high-wealth non-stockholders. The results suggest that relatively simple changes in information, downside

protection, and public co-financing can substantially increase the attractiveness of equity investment among households that are otherwise least likely to participate.

6.2 Trust in financial markets

Trust has been shown to predict stock-market participation (e.g., Guiso et al., 2008; Georgarakos and Pasini, 2011) and to help explain non-participation even among households with sufficient wealth to invest. Guiso et al. (2008) model trust as the subjective probability that an investor will not be cheated and will receive the promised return on the investment. Low trust therefore reduces the perceived expected payoff from stocks and, if sufficiently severe, can make equity investment unattractive even in the absence of participation costs.

To examine this mechanism, we again restrict the sample to non-stockholders and split respondents according to their reported trust in financial markets. Table 10 shows a large difference already in the baseline group: 39.4% of high-trust non-stockholders are willing to subscribe to the ECEF, compared with only 21.0% of low-trust non-stockholders. Thus, even for the same investment product, baseline willingness to participate is strongly associated with trust.

Treatment responses differ sharply across the two groups. Among low-trust non-stockholders, personalized information (T2) raises take-up by 11.9 percentage points and the State co-contribution (T4) by 10.2 points, with both effects significant at the 1% level. The government guarantee (T3) increases take-up by 6.0 percentage points and is significant at the 5% level, while the liquidity treatment has a smaller and statistically insignificant effect. Starting from a baseline rate of 21.0%, T2 therefore raises predicted take-up to about 33%, and T4 to about 31%.

Among high-trust non-stockholders, treatment effects are generally smaller. Personalized information and the State co-contribution have modest and statistically insignificant effects, while the government guarantee raises take-up by 7.8 percentage points and is significant at the 5% level. Thus, the guarantee increases willingness to invest in both trust groups, whereas the effects of personalized information and public co-financing are concentrated among respondents with low trust. This pattern is consistent with the idea that making the benefits of long-run investment more tangible, or increasing the payoff on the household's own contribution, can partly offset the deterrent effect associated with distrust in financial markets.

6.3 Non-expected-utility preferences

ECEF may also attenuate behavioral and market frictions that are distinct from participation costs and trust. One is ambiguity about equity returns. If households perceive stock returns as difficult to assess, ambiguity aversion can discourage stock-market participation even when expected returns are attractive (Dow and da Costa Werlang, 1992; Cao et al., 2005; Campanale, 2011; Dimmock et al., 2016; Peijnenburg, 2018). The design of ECEF may

mitigate this problem by presenting the consequences of long-term equity investment in a simple and tangible form. The baseline description T1 provides explicit information on contributions, expected returns, and the value accumulated over the life cycle, while T2 goes further by showing respondents the counterfactual value they would have accumulated had they contributed from birth. By converting an unfamiliar distribution of stock returns into concrete monetary outcomes, these features may reduce perceived ambiguity and make the investment easier to evaluate.

A related, but conceptually distinct, mechanism is limited understanding of compound returns. Households often underestimate how strongly small amounts can accumulate over long horizons (Stango and Zinman, 2009). ECEF makes compounding particularly salient because modest annual contributions are explicitly linked to the value of the fund many decades later. The attractiveness of the fund may therefore reflect not only its financial characteristics, but also a presentation that makes the gains from long-term compounding easier to appreciate.

ECEF may also overcome market-access and product-selection frictions. The proposed fund combines small periodic contributions, no transaction fees, negligible management costs, automatic reinvestment, and diversification. Comparable low-cost investment opportunities may not be equally accessible in all markets or to all households. Even when they exist, inexperienced investors may be unaware of them or may face search, account-opening, and product-selection costs. ECEF therefore differs from simply advising households to buy equities: it packages long-term equity investment in a standardized and readily accessible instrument.

A further behavioral mechanism concerns loss aversion and the horizon over which equity risk is evaluated. Loss aversion can deter stock-market participation when investors place disproportionate weight on possible losses, even for small investments with positive expected returns (e.g., Barberis et al., 2006; Dimmock and Kouwenberg, 2010). To illustrate the mechanism, consider an investor offered a one year €120 investment in the same diversified equity portfolio underlying ECEF. With an expected annual return of 6.5% and a standard deviation of 19%, a linear-utility loss-averse investor would reject the one-year investment for values of the loss-aversion parameter above approximately 2.4. A loss aversion of around 2.25 is what characterizes most investors loss aversion in the classical Tversky and Kahneman (1992) paper and is close to conventional empirical estimates of loss aversion (Brown et al., 2024). [5]

The calculation changes dramatically when the same type of equity exposure is evaluated

[5]Let V denote the terminal value of the fund, C cumulative contributions, $p = \Pr(V > C)$, and λ the coefficient of loss aversion. Taking cumulative contributions as the reference point, the expected reference-dependent payoff is $p\,E(V - C \mid V > C) - \lambda(1-p)\,E(C - V \mid V < C)$. With an expected annual return of 6.5% and a standard deviation of 19%, and assuming log-normally distributed one-year returns, $p = 0.605$. Faced with a one year horizon, the investor prefers not to invest when λ exceeds approximately 2.45. Brown et al. (2024) provide a meta-analysis of empirical estimates of loss aversion. Their preferred specification implies a mean coefficient of $\lambda = 1.96$, with a 95% interval of (1.82 2.10), close to the classic benchmark of 2.25.

over the very long horizon embedded in ECEF. Consider instead contributions totaling €8,400 over the life cycle, beginning at birth and invested until age 70. Because the probability that the final fund value falls below cumulative contributions becomes extremely small over such a horizon, the degree of loss aversion required to reject the investment becomes extraordinarily large, about 3,800 in our illustrative calculation.[6] The relevant distinction is therefore not simply between investing and not investing in stocks, but between evaluating equity risk over short horizons and evaluating the accumulated outcome of a long-horizon investment. A fund such as ECEF may make equity participation more attractive to loss-averse households by shifting attention away from frequent short-run gains and losses toward the distribution of long-run outcomes.

These mechanisms suggest that the long horizon of ECEF may itself be an important part of the fund's appeal. In Section 7, we investigate this channel directly using the experiment in the wave 12 survey where respondents are presented with the same equity investment but with returns and downside risk framed over different investment horizons. This allows us to test whether willingness to invest changes when households are induced to evaluate equity risk over much longer horizons than one year.

7 Investment horizon framing and equity participation

The experiment deliberately strips away several features of the ECEF in order to focus more directly on horizon framing. Respondents are asked to consider a one-off investment of an amount of their choice in a diversified fund investing in European equities. The fund is managed by an independent European non-profit authority, charges no fees, and its returns are tax-exempt and can be reinvested. Unlike the baseline ECEF studied in Wave 11, the investment is fully liquid and can be withdrawn at any time. The underlying investment opportunity is identical across treatment groups; what varies is the horizon over which its expected value and probability of loss are described.

As shown in Table 2, respondents are randomly assigned to three groups. In the one-year baseline group, G1, they are told that every €100 invested is worth about €107 on average after one year, with a 40% probability of a loss and a 60% probability of a gain. In G2, the same investment is presented over a 15-year horizon: every €100 invested is worth about €260 on average, with a 15% probability of a loss and an 85% probability of a gain. In G3, the horizon is extended to 30 years: every €100 invested is worth about €660 on average, with a 7% probability of a loss and a 93% probability of a gain. In all three groups, the expected annual return is 6.5%. Appendix B.2 reports the complete wording of the experiment.

[6]The same calculation produces a very different threshold over the long horizon relevant for ECEF. Assuming log-normal returns and evaluating the fund at age 70, the probability that its value exceeds cumulative contributions is $p = 0.981$. The loss-aversion coefficient would therefore have to exceed a very large value ($\lambda = 3{,}800$) for the investor to reject ECEF. Thus, the long investment horizon substantially reduces the degree of loss aversion required to make the investment unattractive.

After receiving the treatment-specific information, respondents are asked whether they would be willing to subscribe to a fund with these characteristics. The experiment therefore provides a direct test of whether presenting equity investment over progressively longer horizons affects the extensive and intensive margins of demand.[7]

Figure 3 reports the distribution of answers by horizon group. Table 11 reports the effects on willingness to subscribe. The results are large and monotonic. Relative to the one-year treatment, presenting the same equity investment over a 15-year horizon raises the probability of subscribing by 11.2 percentage points in the specification without controls and by 10.8 percentage points when demographic and financial characteristics are included. Extending the horizon to 30 years raises willingness to invest by 14.7 and 14.6 percentage points, respectively. These are large effects relative to the baseline subscription rate of 19.1%. Using the specification with controls, predicted take-up rises to approximately 30% under the 15-year presentation and 34% under the 30-year presentation. The treatment estimates are virtually unchanged when controls are added, as expected under random assignment.[8]

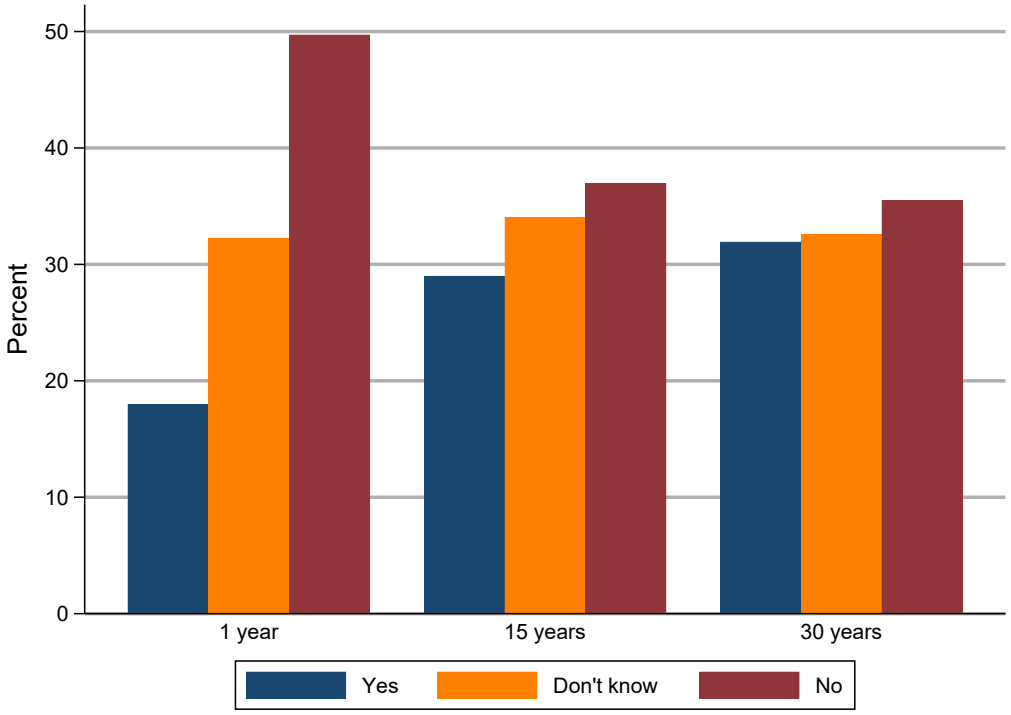
The pattern provides direct evidence that the horizon over which equity investment is presented matters for participation. When respondents are shown the same annual expected return over a longer horizon, together with the associated accumulation of returns and decline in downside risk, willingness to invest rises sharply. The larger point estimate for the 30-year treatment is also consistent with a stronger response as the investment horizon lengthens, although the table does not test whether the 30-year effect is statistically different from the 15-year effect.

These results complement the evidence from the first experiment. The high take-up of the baseline ECEF may reflect not only its institutional features, such as small contributions, zero fees, and tax advantages, but also the fact that equity risk is evaluated over a very long horizon rather than through short-run fluctuations. This interpretation is consistent with mechanisms based on narrow framing and loss aversion: short-horizon presentations make the relatively high probability of an equity loss particularly salient, whereas long-horizon presentations emphasize cumulative returns and a much lower probability of ending below the initial investment (Benartzi and Thaler, 1995).

[7]Table A2 in Appendix B reports descriptive statistics for the 5,027 respondents in Wave 12. Overall, 24.2% are willing to invest in the fund, 43.0% are unwilling, and 32.8% report that they do not know. Table A3 assesses balance across the three randomized horizon treatments. Pre-treatment characteristics are very similar across groups, and none of the joint tests rejects equality of means at the 5% level.

[8]The experiment should not be interpreted as separately identifying the effect of the passage of time from the effect of the information associated with it. Moving from one to 15 or 30 years mechanically changes both the cumulative expected value of the investment and the probability of loss. The treatment therefore identifies the causal effect of long-horizon framing as a package (higher cumulative expected returns combined with lower downside risk) rather than the independent contribution of each component. This distinction is important for interpreting the mechanism, but it does not alter the main conclusion: the way in which the investment horizon is communicated has a quantitatively large effect on willingness to enter the equity market.

Figure 3: Willingness to invest in a long term equity fund, by investment horizon



Notes: The figure reports the weighted distribution of responses to the question asking whether respondents would be willing to subscribe to a loan term equity fund. In Wave 12, respondents were randomly assigned to three groups differing only in the investment horizon presented: 1 year (T1, 50% of the sample), 15 years (T2, 25%), and 30 years (T3, 25%). Bars report the percentage answering "Yes," "Don't know," or "No." Survey weights are applied.

8 Macroeconomic implications

We now assess the aggregate implications of households' stated willingness to sponsor an ECEF account in Italy and extend the estimates to Europe. We first describe the model and its calibration. We then characterize the transition and steady state under a baseline ECEF policy and examine the effects of three accompanying policies. We keep the presentation streamlined and refer to Appendix E for the full details of the analysis.

The model is a partial-equilibrium overlapping-generations model with exogenous transition probabilities. Households consist of two adults of the same age and their children living at home. When children leave home, they form new households by pairing with other individuals of the same age, creating links across generations. Births, deaths, migration, household formation, and entry into and exit from the stock market occur according to age-specific probabilities. The ECEF is introduced at the beginning of the simulation. Each newborn has up to three potential sponsors: the parents' household and, if still alive, the two grandparents' households. An account is opened in the child's name if at least one potential sponsor is willing to contribute. Sponsors make annual contributions until the child turns 18, after which the beneficiary continues contributing until the account is liquidated at age 70.

Table 11: Investment horizon and willingness to subscribe to the fund

	No controls	With controls
G2: 15 years investment	0.11***	0.11***
	(0.01)	(0.01)
G3: 30 years investment	0.15***	0.15***
	(0.01)	(0.01)
Male		0.12***
		(0.01)
Age 35 to 50		-0.06***
		(0.02)
Age 51 to 65		-0.09***
		(0.02)
Age 66 to 75		-0.18***
		(0.02)
Family size		0.01
		(0.01)
College degree		0.07***
		(0.01)
North		0.01
		(0.01)
Centre		0.01
		(0.02)
Financial wealth		0.002***
		(0.00)
Homeowner		0.04**
		(0.02)
N	5,027	5,027
Baseline T1	0.19	0.19

Notes: The table reports average marginal effects from Probit regressions in which the dependent variable equals one if the respondent is willing to subscribe to the fund and zero otherwise. The omitted category is T1, in which fund returns are presented over a one-year investment horizon. T2 and T3 present the same fund over 15-year and 30-year horizons, respectively. The first column includes only treatment indicators; the second column additionally controls for gender, age, household size, college education, geographical area, financial wealth, and homeownership. The last row reports the mean of the dependent variable in the baseline T1 group for the corresponding estimation sample. Robust standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10, 5, and 1 percent levels, respectively.

Contributions earn a constant annual real return of 6.5%, consistent with the mean return assumed in Section 2, and the model tracks the expected value of each account over time.

A household is considered a stock-market participant if it holds equities independently of the ECEF or owns an ECEF account itself. A household decides whether to sponsor an account for its children at the first birth following the introduction of the program, and for its grandchildren at the birth of its first grandchild. Once established, willingness to

contribute remains unchanged, reflecting the long-term commitment implicit in the proposed instrument. The probability of contributing is calibrated to the survey estimates and is higher among existing stockholders than among non-stockholders. Because sponsoring or owning an ECEF account makes a household a stock-market participant, the program can also increase willingness to contribute in subsequent generations. Willingness is correlated across generations through the intergenerational transmission of financial preferences and assortative mating.

We also consider three accompanying policies, introduced at launch and added sequentially: (i) extending eligibility to children aged 1–10 at launch; (ii) allowing households to open an account for a future child up to five years before birth; and (iii) providing a €1,000 government contribution when an account is opened. In the absence of the third policy, no initial contribution is provided.

Our objective is to produce comparable simulations for Italy and the EU. We therefore use the Household Finance and Consumption Survey (HFCS) to calibrate stock-market participation (direct and indirect stockholding through mutual funds), its age profile and entry and exit rates from the stock market.[9] For each economy, we simulate one million households, starting in 1960, to reproduce the official population age structure and empirical age profiles of survival, household formation, fertility, and stock-market participation at the time of the ECEF's introduction. Family relationships across generations are generated within the model. Following the program's introduction, births and migration evolve according to official demographic projections (Istat, 2025; Eurostat, 2023b).

The probabilities of willingness to contribute are calibrated to the stated take-up rates in Table 5 under four ECEF designs: the baseline (T1), personalized information on historical returns (T2), a government guarantee (T3), and public co-contributions (T4).[10] Intergenerational transmission and assortative mating are calibrated using estimates from Black et al. (2017) and Fagereng et al. (forthcoming). As in Section 2, we assume an annual real return of 6.5% and an annual contribution of €120. We benchmark ECEF holdings against current stock-market capitalization, 46% and 77% of GDP in Italy and the EU, respectively.

We report three aggregate outcomes: the stock-market participation rate, the newborn enrollment rate, and total ECEF holdings. Stock-market participation includes households holding equity outside ECEF, households whose head owns an ECEF account, and households with a child living at home who owns an ECEF account. Households that only contribute to an account held by a child or grandchild living elsewhere are excluded from this measure

[9]The HFCS provides harmonized measures of household stockholding across countries, ensuring a consistent empirical basis for the two calibrations. For Italy, the HFCS data are drawn from the 2022 Bank of Italy Survey of Household Income and Wealth (SHIW). The age profile of stock-market participation is hump-shaped, rising from 3% at age 20 to 17% at age 57 and declining to 4% at age 90. For the EU, we retain the same age profile, scaled to match the HFCS participation rate of 21.2% (European Central Bank, 2023). Simulations calibrated using ISCE data yield broadly comparable results.

[10]We exclude the liquidity treatment (T5) because it does not significantly increase stated take-up. Moreover, allowing early withdrawals could increase fiscal risks associated with the government guarantee, potentially reinforcing the sovereign–fund diabolic loop discussed in Appendix E.7.

and reported separately as sponsors; a given child may receive contributions from more than one donor, such as parents and grandparents. The newborn enrollment rate is the share of newborns with an ECEF account. Total ECEF holdings are measured relative to current stock-market capitalization and capture the gross equity demand generated by the program, abstracting from portfolio reallocation and general-equilibrium adjustments. Appendix E describes the simulation procedure in detail.

Table 12 shows that in Italy the participation rate rises from 12.9% before the program to 18.4% after ten years, 27.1% after thirty years, and 42.0% in the steady state. In Europe, it rises from 18.6% to 26.5%, 36.4%, and 52.5%, respectively. Thus, participation increases substantially in both economies, reaching more than three times its initial level in Italy and about 2.8 times its initial level in Europe. The composition of participation changes markedly over time. In the first decades, the increase comes from children living at home who hold ECEF accounts: they account for 5.8% of Italian households after ten years and 14.2% after thirty years, and for 8.1% and 16.0% in Europe. As these cohorts grow older and establish their own households, ECEF ownership increasingly appears as direct ownership by the household head.

Table 12: Stock market participation and holdings: transition and steady state

	Italy			**Europe**		
	Year 10	Year 30	Steady state	Year 10	Year 30	Steady state
Participation rate, all households (%)	18.4	27.1	42.0	26.5	36.4	52.5
Of which, households with:						
(i) Equity outside the ECEF	12.6	12.0	11.9	18.4	17.6	16.9
(ii) A head owns an account	0.0	1.0	21.7	0.0	2.9	29.8
(iii) A child at home owns an account	5.8	14.2	8.4	8.1	16.0	5.9
Enrollment rate of newborns (%)	55.2	58.6	64.5	58.4	65.2	76.1
Value of ECEF holdings as a share of today's stock-market capitalization (%)	0.15	2.1	37.9	0.12	1.7	39.7
Sponsoring only (%)	3.8	5.5	6.6	4.7	6.6	7.0

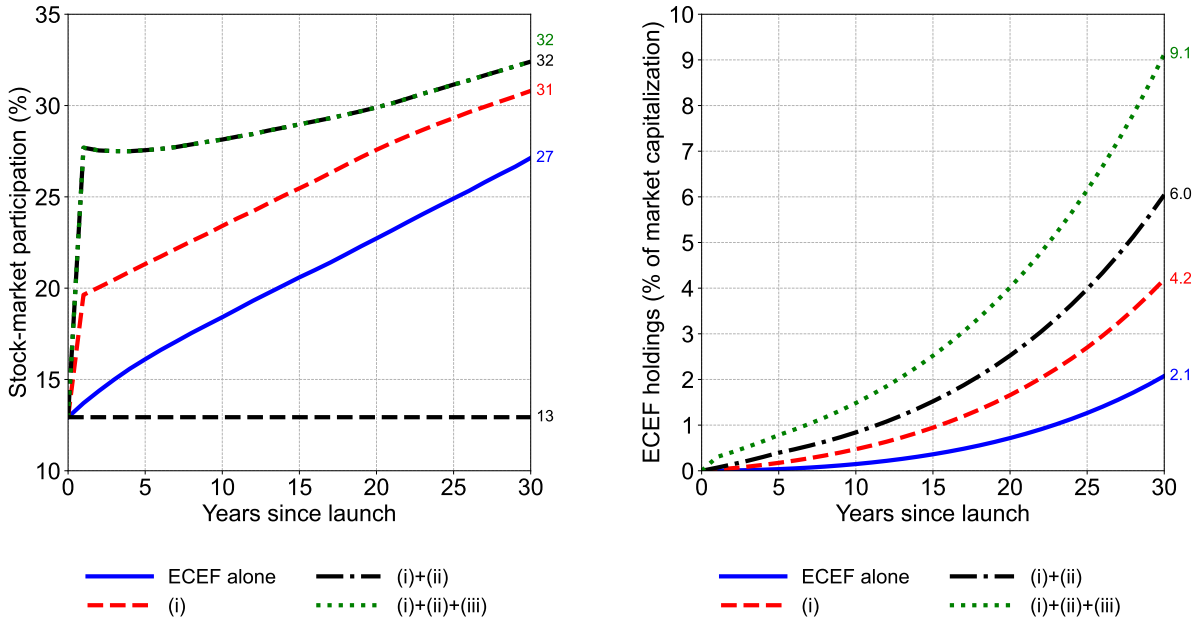
Notes: The table reports simulated stock-market participation, newborn enrollment, and ECEF holdings under the baseline design (T1), separately for Italy and Europe, at year 10, year 30, and in the steady state. Pre-program stock-market participation is 12.9% in Italy and 18.6% in Europe. Participating households are divided into three mutually exclusive categories: (i) households holding equity outside the ECEF; (ii) households in which the head owns an ECEF account; and (iii) households in which a child living at home owns an ECEF account. Up to rounding, the sum of these three categories equals the total participation rate reported in the first row. The enrollment rate is the share of newborns with an ECEF account. ECEF holdings are reported as a percentage of current stock-market capitalization (€1,042 billion in Italy and €14.6 trillion in Europe) and measure gross additional equity demand, abstracting from portfolio reallocation and general-equilibrium adjustments. The final row reports the share of households that only sponsor an ECEF account, namely parents or grandparents who contribute to an account without themselves being counted as stockholders.

Notice that the share of households with a child at home holding an ECEF account eventually declines, from 14.2% at year 30 to 8.4% in the Italian steady state and from 16.0% to 5.9% in Europe. This does not reflect declining take-up. The three groups are exclusive:

once the parents themselves own an account, as the first enrolled cohorts form their own households, the household is counted in group (ii). In addition, fewer households contain children in the steady state, as births follow the official projections, even as the newborn enrollment rate rises to 64% in Italy and 76% in Europe.

Sponsorship follows a separate pattern. The share of households that contribute to an ECEF account without themselves holding equity through one of the three participation categories rises from 3.8% after ten years to 6.6% in the Italian steady state, and from 4.7% to 7.0% in Europe. These figures capture the additional involvement of parents and grandparents in financing children's accounts, but are deliberately kept separate from the measure of equity ownership.[11]

Figure 4: Transition in stock-market participation and holdings



(a) Stock-market participation **(b) Holdings**

Notes: The figure reports simulated stock-market participation (panel (a)) and ECEF holdings (panel (b)) in Italy over the first 30 years following the program's introduction, under the baseline design (T1). The four lines represent the baseline ECEF alone (solid blue), with policy (i), enrolling children aged 1–10 at launch (dashed red); with policies (i) and (ii), allowing accounts to be opened up to five years before the birth of a child (dash-dotted black); and with all three policies, including (iii), a €1,000 government contribution at account opening (dotted green). Policies are introduced cumulatively. Participation is expressed as a percentage of all households, while ECEF holdings are measured relative to current Italian stock-market capitalization (€1.04 trillion). The horizontal dashed line in panel (a) indicates the pre-program participation rate (12.9%). Values at year 30 are reported at the right edge of each panel.

[11] Appendix E reports other exercises. Intergenerational transmission and feedback through stock-market participation have limited effects on the transition and account for about 3 percentage points of steady-state participation in Italy and 5 in Europe. Results are robust to alternative assumptions about family transmission and sorting. Even if only 70% of stated willingness translates into actual enrollment, steady-state ECEF holdings remain substantial, at about 30% of current market capitalization. Clearer communication of the program could further increase participation and holdings.

ECEF holdings accumulate much more slowly. After ten years they amount to only 0.15% of current stock-market capitalization in Italy and 0.12% in Europe; after thirty years, the corresponding shares are 2.1% and 1.7%, before reaching 37.9% and 39.7% in the steady state. The baseline ECEF therefore broadens equity ownership progressively as enrolled children become adult account holders, while substantial asset accumulation requires several decades of contributions and compounded returns. These holdings measure gross equity demand and should not be interpreted as an equivalent increase in aggregate equity wealth, since the simulations abstract from portfolio reallocation and general-equilibrium adjustments.

Figure 4 shows the transition in stock-market participation and ECEF holdings in Italy under the baseline design T1 adding the three accompanying policies sequentially. Policy (i), which allows children aged 1–10 to be enrolled at launch, mainly brings forward participation: its effect is large initially but fades as these cohorts age. Policy (ii), which allows an account to be opened before the birth of a child, has a similar short-run effect on participation but a more persistent effect on ECEF holdings, because contributions start earlier and compound for longer. Policy (iii), the €1,000 government contribution at account opening, does not affect participation directly but further increases the amount accumulated in the fund. The two panels therefore highlight a useful distinction. The accompanying policies have their strongest effect on the timing of participation, while their more persistent impact is on asset accumulation. With all three policies, ECEF holdings become sizeable within the first two decades and continue to grow thereafter. Results for Europe are qualitatively similar, and are reported in Appendix E.

The Appendix further shows that providing more information about ECEF, as in the information treatment, has a sizable effect. When combined with policies (i)–(iii), it raises participation in the first year from 28% under T1 to 31% in Italy and increases steady-state holdings by more than 7 percentage points of market capitalization. The guarantee and public co-contribution designs generate effects of a similar order. Relative to T1, the designs raise newborn enrollment at launch from 55% to about 62–65% in Italy and from 59% to 64–68% in Europe, while also producing somewhat higher steady-state participation.

9 Conclusions

This paper studies a survey experiment on the demand for a European Child Equity Fund. Three findings stand out. The baseline fund attracts about one-third of respondents, well above the current stock market participation rate. Demand is substantial among non-stockholders, and it responds most to personalized information on historical returns, with the government guarantee and the public co-contribution close behind among households with fewer resources. Under plausible assumptions on family decisions, these estimates imply a near-tripling of stock market participation in the long run and a sizeable addition to the demand for European equity.

A single European equity market is a long-standing objective of the European Union. The effects of the ECEF would be significant at the EU level only if all member states

participate. A European fund would also diversify country risk and strengthen the integration of European capital markets. The implications discussed in this paper should therefore be read as the case for a European, rather than purely national, initiative.

Our results also carry implications for design. The costly features of the program—the government guarantee, a contingent fiscal liability, and the State co-contribution, a direct budgetary cost—are especially effective among non-stockholders with relatively low financial wealth, and much less so among wealthier households. Withdrawal flexibility involves a different trade-off: it may attract households with limited liquid resources, but its estimated take-up effect is modest, and greater liquidity may reduce the wealth that remains invested over the long run. There is thus no reason to offer every feature on identical terms to all participants. Co-contributions could be concentrated among households with limited financial resources, and the guarantee could be capped or restricted to contributions below a given amount. The experimental evidence helps distinguish the features that belong to the basic architecture of the ECEF from those best targeted to households whose take-up is particularly responsive to them.

Instead, our results suggest that relatively inexpensive personalized information about historical returns and a simple, informative tutorial on the properties of the fund can increase take up substantially: treatment effects are much stronger when the fund's features are perceived as clear.

European equity indices are heavily concentrated in a few countries. In indices such as the Euro Stoxx 600 and MSCI Europe, the UK accounts for roughly 20–24% of the index, France for 15–17%, Switzerland for 14–15%, Germany for 13–14%, and the Netherlands for about 8%. Household holdings of the ECEF would instead track birth shares, which are more balanced and aligned with population size. The shares of new EU births of Germany (19.0%) and France (18.7%) are broadly in line with their index weights, but Italy (10.4% of new EU births), Spain (8.9%), and Poland (7.1%) account for much larger shares of births than of European market capitalization, while the UK and Switzerland are not part of the EU. Some rebalancing of the investment portfolio relative to standard indices may therefore be needed to ensure adequate representativeness across countries. A key advantage of the ECEF remains: European savings would stay invested in Europe, rather than being channeled into global indices heavily tilted toward the United States, which as of early 2026 accounts for about 75% of the MSCI World Index, up from roughly 30% in the 1990s.

The ECEF could also support European venture capital by allocating a small, capped share of its assets to diversified venture capital funds. A 1% allocation of steady-state European holdings would amount to about €57–61 billion, roughly one-third of the €170 billion currently managed by the European venture capital industry and about 5% of the assets of the U.S. industry, although the associated illiquidity, valuation uncertainty, and management costs warrant some caution.

The ECEF may also operate as a large-scale tool of financial education. Experiences with financial markets early in life durably shape risk attitudes, expectations, and stock market participation (Malmendier and Nagel, 2011). A child equity account builds on this

evidence by design: the beneficiary grows up observing contributions, returns, and the power of compounding, and accumulates direct experience of market fluctuations well before adulthood (Malmendier et al., 2025). Our simulations try to incorporate these effects in a very conservative way by assuming that once grown up, children with an account stay in the stock market and continue to contribute to ECEF. But effects could be broader. Sponsors may benefit as well. Parents and grandparents who open and follow the account become familiar with basic investment concepts, and peer and network interactions can spread this familiarity more broadly.

Two caveats qualify these conclusions. Our estimates are based on stated willingness in a hypothetical setting, and actual enrollment would likely be lower. Our macroeconomic projections hold program design and household behavior constant over decades. Even so, the evidence suggests that a simple, transparent, and inexpensive child equity fund could bring a large share of European households into the stock market, and with them a substantial flow of long-term capital to European firms. By extending stock-market participation to low-wealth households, ECEF allows them to share in firms' profits and to earn the higher returns that equity has historically offered, making the distribution of capital income, and of returns to wealth, more equal. This is especially relevant given the large profits that firms are expected to earn from the AI revolution.

References

Acharya, V. V., I. Drechsler, and P. Schnabl (2014). A Pyrrhic Victory? Bank Bailouts and Sovereign Credit Risk. *Journal of Finance 69*(6), 2689–2739.

Aladangady, A., J. Bricker, A. C. Chang, S. Goodman, J. Krimmel, K. B. Moore, S. Reber, A. H. Volz, and R. A. Windle (2023, October). Changes in U.S. Family Finances from 2019 to 2022: Evidence from the Survey of Consumer Finances. Technical report, Board of Governors of the Federal Reserve System, Washington, DC.

Banca d'Italia (2022). Survey on Household Income and Wealth (Indagine sui bilanci delle famiglie italiane): historical archive, version 12.2 (waves 1977–2022), and 2022 wave, microdata. https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/distribuzione-microdati/. Files storico_stata.zip and ind22_stata.zip, downloaded 11 September 2026.

Barberis, N., M. Huang, and R. H. Thaler (2006). Individual Preferences, Monetary Gambles, and Stock Market Participation: A Case for Narrow Framing. *American Economic Review 96*(4), 1069–1090.

Benartzi, S. and R. H. Thaler (1995). Myopic Loss Aversion and the Equity Premium Puzzle. *The Quarterly Journal of Economics 110*(1), 73–92.

Black, S. E., P. J. Devereux, P. Lundborg, and K. Majlesi (2017). On the Origins of Risk-Taking in Financial Markets. *Journal of Finance 72*(5), 2229–2278.

Brown, A. L., T. Imai, F. M. Vieider, and C. F. Camerer (2024). Meta-Analysis of Empirical Estimates of Loss Aversion. *Journal of Economic Literature 62*(2), 485–516.

Brunnermeier, M. K., L. Garicano, P. R. Lane, M. Pagano, R. Reis, T. Santos, D. Thesmar, S. Van Nieuwerburgh, and D. Vayanos (2016). The Sovereign-Bank Diabolic Loop and ESBies. *American Economic Review 106*(5), 508–512.

Campanale, C. (2011). Learning, Ambiguity, and Life-Cycle Portfolio Allocation. *Review of Economic Dynamics 14*(2), 339–367.

Campbell, J. Y. (2006). Household Finance. *Journal of Finance 61*(4), 1553–1604.

Cao, H., T. Wang, and H. Zhang (2005). Model Uncertainty, Limited Market Participation, and Asset Prices. *Review of Financial Studies 18*(4), 1219–1251.

Center for Social Development (2026). SEED for Oklahoma Kids (SEED OK). Washington University in St. Louis, csd.wustl.edu. Accessed 23 September 2026.

Charles, K. K. and E. Hurst (2003). The Correlation of Wealth across Generations. *Journal of Political Economy 111*(6), 1155–1182.

Charles, K. K., E. Hurst, and A. Killewald (2013). Marital Sorting and Parental Wealth. *Demography 50*(1), 51–70.

Christelis, D., D. Georgarakos, T. Jappelli, G. Kenny, and J. Meyer (2026). Stockholding in Europe: Evidence from the Consumer Expectations Survey. ECB Working Paper 3239, European Central Bank.

Cochrane, J. H. (2005). The Risk and Return of Venture Capital. *Journal of Financial Economics 75*(1), 3–52.

Dimmock, S. G. and R. Kouwenberg (2010). Loss Aversion and Household Portfolio Choice. *Journal of Empirical Finance 17*(3), 441–459.

Dimmock, S. G., R. Kouwenberg, O. S. Mitchell, and K. Peijnenburg (2016). Ambiguity Aversion and Household Portfolio Choice Puzzles: Empirical Evidence. *Journal of Financial Economics 119*(3), 559–577.

Dohmen, T. J., A. Falk, D. Huffman, U. Sunde, J. Schupp, and G. G. Wagner (2011). Individual Risk Attitudes: New Evidence from a Large, Representative, Experimentally Validated Survey. *Journal of the European Economic Association 9*(3), 522–550.

Dow, J. and S. R. da Costa Werlang (1992). Uncertainty Aversion, Risk Aversion, and the Optimal Choice of Portfolio. *Econometrica 60*(1), 197–204.

Draghi, M. (2024, September). The Future of European Competitiveness. Part A: A Competitiveness Strategy for Europe. Technical report, European Commission, Brussels. https://commission.europa.eu/topics/eu-competitiveness/draghi-report_en.

Duraj, K., D. Grunow, M. Haliassos, C. Laudenbach, and S. Siegel (2024). Rethinking the Stock Market Participation Puzzle: A Qualitative Approach. IMFS Working Paper Series 210, Goethe University Frankfurt.

European Central Bank (2023). Household Finance and Consumption Survey: Statistical tables, wave 2021. https://www.ecb.europa.eu/home/pdf/research/hfcn/HFCS_Statistical_Tables_Wave_2021_July2023.pdf. July 2023, consulted 11 September 2026.

European Commission (2026). Recovery and Resilience Facility. https://commission.europa.eu/funding-and-tenders/find-funding/eu-funding-programmes/recovery-and-resilience-facility_en. Consulted 26 September 2026.

European Investment Bank (2026). European Fund for Strategic Investments (EFSI). https://www.eib.org/en/products/mandates-partnerships/efsi/index. Consulted 26 September 2026.

Eurostat (2023a). EU-SILC: share of young people living with their parents by age group (ilc_lvps08) and estimated average age of young people leaving the parental household (yth_demo_030). https://ec.europa.eu/eurostat/api/dissemination/statistics/1.0/data/. Downloaded 11 September 2026.

Eurostat (2023b). EUROPOP2023: population projections at national level, baseline (datasets proj_23np and proj_23ndbi). https://ec.europa.eu/eurostat/api/dissemination/statistics/1.0/data/. Dataset updated 12 May 2026, downloaded 11 September 2026.

Eurostat (2024). Demography statistics: population on 1 January by age and sex (demo_pjan), life tables (demo_mlifetable), live births by mother's age and birth order (demo_fordagec), demographic balance (demo_gind), and GDP and main components (nama_10_gdp). https://ec.europa.eu/eurostat/api/dissemination/statistics/1.0/data/. Downloaded 11, 15 and 16 September 2026.

Eurostat (2026). Financial balance sheets: annual (nasa_10_f_bs) and quarterly (nasq_10_f_bs) data, households and non-profit institutions serving households, listed shares (F.511), assets, non-consolidated. https://ec.europa.eu/eurostat/api/dissemination/statistics/1.0/data/nasa_10_f_bs. Annual dataset updated 26 September 2026, quarterly 27 July 2026; downloaded 26 September 2026.

Fagereng, A., L. Guiso, and L. Pistaferri (forthcoming). Marriage, Assortative Mating and Wealth Inequality. Review of Economic Studies, forthcoming.

Fagereng, A., M. Mogstad, and M. Rønning (2021). Why Do Wealthy Parents Have Wealthy Children? *Journal of Political Economy 129*(3), 703–756.

Fama, E. F. and K. R. French (1988). Permanent and Temporary Components of Stock Prices. *Journal of Political Economy 96*(2), 246–273.

Farhi, E. and J. Tirole (2018). Deadly Embrace: Sovereign and Financial Balance Sheets Doom Loops. *Review of Economic Studies 85*(3), 1781–1823.

Georgarakos, D. and G. Pasini (2011). Trust, Sociability, and Stock Market Participation. *Review of Finance 15*(4), 693–725.

Gomes, F. (2005). Portfolio Choice and Trading Volume with Loss-Averse Investors. *Journal of Business 78*(2), 675–706.

Gomes, F., M. Haliassos, and T. Ramadorai (2021). Household Finance. *Journal of Economic Literature 59*(3), 919–1000.

Guiso, L., M. Haliassos, and T. Jappelli (2002). *Household Portfolios*. Cambridge, MA: MIT Press.

Guiso, L. and T. Jappelli (2000). Household Portfolios in Italy. CSEF Working Paper 43, CSEF, University of Naples Federico II.

Guiso, L. and T. Jappelli (2005). Awareness and Stock Market Participation. *Review of Finance 9*(4), 537–567.

Guiso, L. and T. Jappelli (2026). The Italian Survey of Consumer Expectations (ISCE). Working paper, EIEF and CSEF.

Guiso, L., P. Sapienza, and L. Zingales (2008). Trusting the Stock Market. *Journal of Finance 63*(6), 2557–2600.

Guiso, L. and P. Sodini (2013). Household Finance: An Emerging Field. In G. M. Constantinides, M. Harris, and R. M. Stulz (Eds.), *Handbook of the Economics of Finance*, Volume 2B, pp. 1397–1532. Elsevier.

Harris, R. S., T. Jenkinson, and S. N. Kaplan (2014). Private Equity Performance: What Do We Know? *Journal of Finance 69*(5), 1851–1882.

Invest Europe (2025). *Positioned for the Challenge: Capital Under Management & Dry Powder 2024*. Brussels: Invest Europe. Published 24 July 2025. Venture capital: portfolio at cost €111 billion and uncalled commitments €59 billion at end-2024.

Invest Europe (2026). *The Performance of European Private Equity: Benchmark Report 2025*. Brussels: Invest Europe.

Istat (2025). Demographic statistics: population projections, base 1 January 2025 (median scenario), fertility rates by birth order and age of the mother, cohort fertility by birth order, life tables. SDMX web service, https://esploradati.istat.it/SDMXWS/rest/data/, dataflows DCIS_PREVDEM1, DCIS_ARCH_FEC_8, DCIS_ARCH_FEC_9, DCIS_MORTALITA1_2. Downloaded 11 September 2026.

Jordà, O., K. Knoll, D. Kuvshinov, M. Schularick, and A. M. Taylor (2019). The Rate of Return on Everything, 1870–2015. *Quarterly Journal of Economics 134*(3), 1225–1298.

Korteweg, A. and M. Sørensen (2010). Risk and Return Characteristics of Venture Capital-Backed Entrepreneurial Companies. *Review of Financial Studies 23*(10), 3738–3772.

Leiserson, G. (2025). Trump Accounts Serve No Clear Purpose and Would Exclude Vulnerable Children. Blog post, Tax Law Center at NYU Law, 12 June 2025. https://taxlawcenter.org/blog/trump-accounts-serve-no-clear-purpose-and-would-exclude-vulnerable-children.

Li, G. (2014). Information Sharing and Stock Market Participation: Evidence from Extended Families. *Review of Economics and Statistics 96*(1), 151–160.

Malmendier, U. and S. Nagel (2011). Depression Babies: Do Macroeconomic Experiences Affect Risk Taking? *Quarterly Journal of Economics 126*(1), 373–416.

Malmendier, U., M. Neufing, C. Ochsner, C. Schaffranka, and M. Schwarz (2024). Die Portfoliowertentwicklung des Kinderstartgelds: Technische Dokumentation zum Policy Brief "Ein Kinderstartgeld für Deutschland". Arbeitspapier 04/2024, Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung.

Malmendier, U., C. Schaffranka, and M. Schwarz (2025). Generation Frühstart-Rente. Arbeitspapier 02/2025, Sachverständigenrat zur Begutachtung der gesamtwirtschaftlichen Entwicklung.

Murphy, J. J., P. G. Allen, T. H. Stevens, and D. Weatherhead (2005). A Meta-Analysis of Hypothetical Bias in Stated Preference Valuation. *Environmental and Resource Economics 30*(3), 313–325.

National Audit Office (2023). Investigation into Child Trust Funds. Report, National Audit Office, London.

NVCA (2025). *NVCA Yearbook 2025*. Washington, DC: National Venture Capital Association.

OECD (2024). OECD Family Database, indicator SF2.5: Childlessness. https://webfs.oecd.org/els-com/Family_Database/SF_2_5_Childlessness.pdf. Updated September 2024, consulted 11 September 2026.

Pagel, M. (2018). A News-Utility Theory for Inattention and Delegation in Portfolio Choice. *Econometrica 86*(2), 491–522.

Peijnenburg, K. (2018). Life-Cycle Asset Allocation with Ambiguity Aversion and Learning. *Journal of Financial and Quantitative Analysis 53*(5), 1963–1994.

Poterba, J. M. and L. H. Summers (1988). Mean Reversion in Stock Prices: Evidence and Implications. *Journal of Financial Economics 22*(1), 27–59.

PwC (2025). IPO Watch Europe 2024: European IPO market rebounds in 2024 with proceeds more than doubling compared to last year. Press release, 2 January 2025, https://www.pwc.co.uk/press-room/press-releases/research-commentary/2024/european-ipo-market-rebounds-in-2024-with-proceeds-more-than-dou.html. Consulted 26 September 2026.

Stango, V. and J. Zinman (2009). Exponential Growth Bias and Household Finance. *Journal of Finance 64*(6), 2807–2849.

Tversky, A. and D. Kahneman (1992). Advances in Prospect Theory: Cumulative Representation of Uncertainty. *Journal of Risk and Uncertainty 5*, 297–323.

Vissing-Jørgensen, A. (2002). Limited Asset Market Participation and the Elasticity of Intertemporal Substitution. *Journal of Political Economy 110*(4), 825–853.

Wagenaar, W. A. and S. D. Sagaria (1975). Misperceptions of Exponential Growth. *Perception & Psychophysics 18*(6), 416–422.

Online Appendix

This online appendix collects supplementary material. Appendix A reviews international child saving accounts and related programs. Appendices B.1 and B.2 report the full design of the survey experiments fielded in Wave 11 (April 2026) and Wave 12 (July 2026) of the ISCE, the balance test of the Wave 11 experiment, and the descriptive statistics, balance test and heterogeneity results of Wave 12. Appendix C describes the simulations of the ECEF: the baseline design, life-cycle results, the comparison with a risk-free bond, the cost of the government guarantee, the allocation of 1% of the fund to European venture capital, robustness checks, the alternative assumption of normally distributed returns, and serially correlated returns. Appendix D documents the construction of the historical European real equity return series and the resulting fund values for the cohorts born since 1948. Appendix E describes the model and the simulations of Section 8 in full: the model, the calibration, the results under the four ECEF designs, the accompanying policies, and the robustness of the results.

A International Child Saving Accounts

A number of countries have introduced, or are considering, policies that encourage asset accumulation from an early age. Although the programs differ substantially in eligibility, public support, investment options, and withdrawal rules, they share several features with the European Child Equity Fund (ECEF) studied in this paper: an early start, relatively small contributions, long investment horizons, and some degree of public involvement. Sections A.1 to A.5 review, in turn, the U.S. Trump Accounts, Germany's Frühstartrente, Israel's Savings for Every Child, Sweden's Premium Pension, and the Italian arrangements.

This Appendix summarizes the main international experiences. The comparison is useful because it highlights the different choices policymakers face when designing child investment accounts: whether enrollment should be universal or voluntary; whether contributions should come from the government, families, or both; whether assets should be invested in equities by default; how much investment choice families should have; and when beneficiaries should be allowed to withdraw accumulated wealth.

A.1 United States: Trump Accounts

The most recent example is the child investment account created by the U.S. federal government under the One Big Beautiful Bill Act (OBBBA), signed by President Trump on July 4, 2025, and launched as "Trump Accounts" in 2026.[12]

An account can be opened on behalf of any child under age 18. Contributions may be made by parents, relatives, employers, and other eligible sponsors, up to an annual limit of

[12] See https://home.treasury.gov/news/press-releases/sb0554.

$5,000. Assets are invested in low-cost diversified U.S. equity index funds, such as funds tracking the S&P 500. The program contains an explicit public contribution for children born between 2025 and 2028, who may receive a one-time federal seed contribution of $1,000. Private individuals and corporations may make additional contributions.[13]

The account is intended to remain invested throughout childhood. Funds are generally unavailable until the beneficiary reaches age 18, at which point the account becomes an individual retirement account. The design therefore combines early exposure to equity markets with a very long investment horizon and an explicit retirement-saving objective.

The main characteristics of Trump Accounts are therefore:

Eligibility: children under age 18;

Funding: voluntary family and third-party contributions, together with a $1,000 federal seed contribution for eligible newborn cohorts;

Investment: low-cost diversified U.S. equity funds;

Public support: federal initial contribution and tax advantages;

Liquidity: highly restricted during childhood;

Long-run objective: wealth accumulation and retirement saving.

The program is particularly relevant for our analysis because one of its stated objectives is to broaden the share of the population benefiting from equity-market growth.[14] However, aggregate take-up alone does not reveal whether it succeeds in bringing previously non-participating households into the stock market. Take-up could instead be concentrated among households already familiar with financial markets and with sufficient disposable resources to make additional contributions.[15]

[13]For example, Michael Dell, the CEO of Dell Technologies, has donated $6.25 billion to the Trump Account. With the Dells' donation, an additional $250 will be added to each newborn account. Another $250 contribution will go accounts open on behalf of children age 10 and under who live in ZIP codes with median incomes below $150,000.

[14]See https://edition.cnn.com/2026/07/04/business/trump-accounts-faq. There are no yet official statistics. Data reported by the IRS CEO, Frank Bisignano, in a meeting on June 2026, show that over 1 million people filled in form 4557 – the forms needed to file for the accounts (see https://usdotyorktel.rev.vbrick.com/#/videos/61de962d-7e28-4ddf-9bad-1356f3ff1a22 , minute 30th).

[15]Commentaries in the U.S. press echo these arguments. For instance, Michelle Singletary, a personal finance columnist for the Washington Post, wrote on July 11, 2026 that many low-income families would lack the disposable income needed for the accounts to grow significantly by age 18. She argued that "by relying on families to invest up to $5,000 annually to see meaningful growth, Trump accounts do not solve the fundamental problem of poverty." Greg Leiserson (2025), warned the program may exclude vulnerable children, those in "unstable or complex living situations" and those "whose caregivers have very low incomes and do not file a tax return." This is a distinct administrative/take-up critique: since enrollment is tied to tax filing (Form 4547) or the online portal, very low-income non-filing households may not access the $1,000 seed money at all, independent of any question about their ability to make ongoing contributions.

A.2 Germany: Frühstartrente

Germany is currently introducing the *Frühstartrente*, a publicly supported child investment account intended to promote early participation in capital markets and build supplementary retirement wealth. The federal cabinet approved the draft legislation on August 12, 2026, but the program is not yet in operation. The legislation is expected to enter into force on January 1, 2027, starting with children born in 2020 and 2021; contributions for the 2020 cohort will be credited retroactively for 2026.

Under the proposed scheme, the federal government contributes €10 per month for each child from age 6 until age 18 into an individual, funded retirement account. Parents can open the account with an eligible private provider and make additional voluntary contributions, currently allowed up to €6,840 per year. If parents do not open an individual account, the child nevertheless receives the public contribution, which is invested collectively in capital markets and managed by the Deutsche Bundesbank. The scheme therefore effectively provides automatic coverage irrespective of parental enrollment decisions.

Individual accounts are restricted to certified standard retirement-investment products. These products are subject to an effective cost ceiling of 1 percent and cannot charge entry or distribution fees before the beneficiary reaches adulthood. Investment returns accumulate tax-free during the saving phase. At age 18, the account becomes part of the beneficiary's tax-favored private retirement saving, while the publicly supported capital is generally unavailable for withdrawal before age 65. The main characteristics of the proposed German program are:

Eligibility: children resident in Germany from age 6 to 18;

Funding: a government contribution of €10 per month, supplemented by optional private contributions;

Investment: funded capital-market investment through certified private retirement accounts, or collective investment when no individual account is opened;

Public support: recurring government contributions and tax-favored accumulation;

Costs: regulated products with capped costs and no entry or distribution fees during childhood;

Liquidity: the publicly supported capital is generally locked in until age 65;

Long-run objective: supplementary retirement wealth, early familiarity with capital-market investment, and broader participation in capital markets.

The *Frühstartrente* is particularly relevant for the ECEF because the two instruments share the idea of combining relatively small contributions with a very long investment horizon. The German government also explicitly motivates the program as a way to expose broad segments of the population to capital-market investment from an early age and, in the long run, to strengthen capital-market financing. There are nevertheless important differences. Unlike ECEF, the *Frühstartrente* does not begin at birth but at age 6, and the government rather than the family provides the basic contribution during childhood.

Moreover, while ECEF is explicitly presented as a diversified equity fund, the German scheme operates through certified retirement-investment accounts and does not require a single equity portfolio. The German experience therefore provides a particularly close policy benchmark while also illustrating an alternative model in which public contributions and automatic coverage play a more prominent role.

Simulations of the portfolio value development of the original Kinderstartgeld proposal, on which the Frühstartrente builds, are provided in Malmendier et al. (2024): with a fully equity-based portfolio, median values rise substantially with the investment horizon and the probability that the portfolio falls below cumulative contributions declines to about 2 percent after 25 years.

A.3 Israel: Savings for Every Child

Israel's *Savings for Every Child* program is one of the clearest examples of an operational universal child asset account. Under the program, the government makes regular contributions into an individual account for each eligible child. Parents can supplement the public contribution using part of the child allowance, thereby increasing the amount accumulated on behalf of the child.

Families can choose among different investment arrangements and risk profiles. When parents do not make an active choice, default investment rules determine where the child's savings are placed. The system therefore combines universal public funding with some degree of parental investment choice.

Unlike a pure retirement account, accumulated assets eventually become available to the beneficiary at a relatively young age. The Israeli system is therefore primarily an asset-building program rather than a retirement-saving instrument. Its principal characteristics are:

Eligibility: broadly universal coverage of children;

Funding: regular government contributions, with an option for parents to add matching contributions;

Investment: alternative investment profiles and financial institutions;

Public support: direct recurring government contributions;

Default: an investment option is assigned if parents do not make an active choice;

Liquidity: assets become accessible in early adulthood;

Long-run objective: building financial wealth for young adults.

The Israeli experience shows that a universal child benefit can be converted into an asset-building program while preserving some choice over both contributions and investment allocation.

A.4 Sweden: the Premium Pension as a Related Institutional Benchmark

Sweden does not provide a directly comparable universal child equity account. Its premium pension system is nevertheless useful as an institutional benchmark for the investment architecture of an ECEF.

The Swedish system combines a publicly organized default investment fund with regulated private investment alternatives. Individuals who make no active investment choice are allocated to a collective default fund, while those wishing to choose can select among approved investment products. Centralized administration and fund selection can reduce fees and complexity, while the existence of a default prevents non-participation arising simply from inertia or lack of financial knowledge.

The relevant characteristics for the design of a child equity fund are:

Default investment: a diversified collective fund for individuals making no active choice;

Choice: regulated alternatives for investors who wish to select their portfolio;

Costs: centralized administration helps contain investment costs;

Governance: strong public oversight of eligible funds;

Policy lesson: a public default can coexist with individual investment choice.

Thus, the Swedish experience is relevant less as an example of a child account than as a model for how an ECEF could combine simplicity, low fees, professional management, and some investor choice.

A.5 Italy: Bonus Nuovi Nati and Regional Child Pension Saving

Italy does not currently have a nationwide child equity account comparable to the U.S. or Israeli programs. Two existing policies are nevertheless closely related to the design studied in this paper.

At the national level, the *Bonus Nuovi Nati* provides a one-off transfer of €1,000 at the birth of a child. The transfer is currently designed as an immediate benefit rather than as a long-term investment. One possibility would be to allow families to invest all or part of this transfer in a child equity account.

Our experiment directly studies this possibility. Respondents are asked whether they would invest all, part, or none of a €1,000 newborn transfer in the ECEF. This provides a measure of the trade-off households make between current liquidity and long-term wealth accumulation.

A second relevant experience exists at the regional level. Trentino-Alto Adige has introduced a scheme supporting supplementary pension saving from birth through Pensplan. Public contributions of up to approximately €1,100 can be paid into a pension position opened for the child, subject to family co-contributions after the initial period.

The Italian arrangements can therefore be summarized as follows:

National Bonus Nuovi Nati: a €1,000 transfer associated with the birth of a child, but without mandatory long-term investment;

Regional Pensplan scheme: public support for supplementary pension saving beginning in childhood;

Investment structure: existing pension products rather than a dedicated equity fund;

Policy relevance: both could provide a starting point for a broader child investment account.

B Survey questionnaires, balance test and wave-12 results

B.1 Experiment design in wave 11 (April 2026)

This appendix reproduces the full text of the Wave 11 experimental module: the preliminary risk and patience questions, the description of the fund shown to each treatment group, and the outcome questions.

T1.1. Using a scale from 1 to 10, where 1 means "Completely unwilling to take risks" and 10 means "Completely willing to take risks," how willing are you to take risks? When answering, please think about the choices you make every day in your daily life.

1: Completely unwilling to take risks

10: Completely willing to take risks

Sub-section on European Child Equity Fund (FAEB).

To all respondents

T1.2. Using a scale from 1 to 10, to what extent are you willing to give up something today in order to obtain a benefit in the future? Please indicate your answer on a scale from 1 to 10, where 1 means "Not at all willing to give up something today for a future benefit" and 10 means "Very willing to give up something today for a future benefit."

1: Not at all willing to give up something today

10: Very willing to give up something today

Survey experiment

Divide the sample into five groups of equal size, approximately 1,000 respondents each, balanced by gender, age, and geographical area. The groups are labelled T1–T5.

Information shown to all groups

Governments in several European countries, including Italy, are discussing saving instruments for newborn children; in some countries, such instruments have already been

introduced. Their objectives are to promote long-term saving, including for retirement, and to support the financing of innovative firms.

Consider the following instrument, called the European Child Equity Fund (ECEF/FAEB). All values are expressed in today's prices.

- The Fund is opened in the name of a child aged 0–5.
- It is managed by an independent European non-profit authority and charges no fees.
- The annual contribution is €120.
- Contributions are initially made by family members and are continued by the beneficiary after reaching adulthood.
- Returns are tax-exempt and reinvested in the Fund.
- Under the baseline design, the capital can be withdrawn only when the beneficiary turns 70.
- Total contributions amount to €8,400 over 70 years.
- Based on historical data, the average value of the Fund at age 70 is estimated at about €150,000. At age 70, the probability that the Fund is worth less than total contributions (€8,400) is approximately 2%; the probability that it is worth less than €18,000 is approximately 10%; and the probability that it exceeds €320,000 is approximately 10%.

Treatment-specific information

T1 – Baseline. Respondents receive only the common information above.

T2 – Personalized information. In addition to the common information, respondents are shown the value that an ECEF account would have accumulated had they invested from birth, based on their age and historical European equity returns. For respondents below age 70, the current hypothetical fund value and cumulative contributions are reported; for respondents aged 70 or above, the hypothetical value at age 70 is reported.

T3 – Guarantee. Respondents are additionally told that the value of the Fund is guaranteed: if its value at maturity is below total contributions, the State covers the difference; if it exceeds contributions, the State retains a small share of returns, below 1%.

T4 – State co-contribution. The annual contribution remains €120, but during the first 18 years of the child's life the State pays €60 of the €120 annual contribution. All other features are unchanged.

T5 – Liquidity. The restriction on withdrawals is modified: once the beneficiary becomes an adult, the Fund can be liquidated at any time rather than only at age 70. All other features are unchanged.

To all respondents

T0. From the information you have just read about the European Child Equity Fund, are the characteristics of this Fund clear to you?

☐ Yes, very clear
☐ Yes, fairly clear

☐ Yes, not very clear
☐ No, not clear at all
☐ I don't know

T1. Would you be willing to subscribe to this type of instrument, the European Child Equity Fund, for a son/daughter or a grandson/granddaughter?

☐ Yes
☐ No
☐ I don't know

T2. In the description of the European Child Equity Fund that we have just shown you, the proposed contribution is €120 per year. If you could choose the amount to allocate to this Fund, how much would you like to contribute per year?

Please consider that each variation of €10 per year corresponds to approximately €12,500 more or less in the final value that the beneficiary will be able to withdraw when he or she turns 70.

[Show if T1 = 2 or 3] If you are not interested in the Fund, you may also enter 0 euros.

Open-ended answer:

Desired annual contribution, in euros: _____ € per year

T3. In Italy, there is a "Bonus Nuovi Nati" that consists of a one-off payment of €1,000 by the State at the birth of a new child.

This Bonus could be invested in the European Child Equity Fund (FAEB) that we have just described to you. If invested, the expected value of the Fund when the beneficiary turns 70 would increase by about €82,000.

If you were a beneficiary of the "Bonus Nuovi Nati", would you allocate the €1,000 Bonus to the European Child Equity Fund?

☐ Yes, I would allocate the full €1,000 to the Fund
☐ Yes, I would allocate part of the €1,000 to the Fund and I would like to receive the rest immediately → Please indicate the amount you would allocate to the Fund: _____ € [min. €1, max. €999]
☐ No, I would like to receive the full €1,000 immediately
☐ I don't know

Table A1 reports the balance test for the Wave 11 experiment. Assignment was stratified by gender, age, and geographical area; the table also covers household composition, education, cash on hand, homeownership, the presence of children or grandchildren, and trust. None of the F-tests rejects equality of group means at the 5% level.

Table A1: Balance test of pre-treatment characteristics (Wave 11)

	T1	T2	T3	T4	T5	F-test
Male	0.48	0.48	0.48	0.49	0.48	0.06
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.99)
Age 35 to 50	0.32	0.30	0.32	0.31	0.31	0.21
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.93)
Age 51 to 65	0.37	0.39	0.38	0.41	0.39	0.72
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.58)
Age 66 to 75	0.13	0.12	0.12	0.10	0.12	0.87
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.48)
Family size	2.78	2.75	2.82	2.86	2.78	1.38
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.24)
College degree	0.27	0.27	0.29	0.28	0.25	0.83
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.51)
North	0.47	0.46	0.45	0.43	0.45	0.88
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.47)
Centre	0.18	0.21	0.20	0.20	0.21	0.71
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.59)
Financial wealth	27.81	26.39	26.04	26.55	25.09	1.29
	(0.89)	(0.84)	(0.85)	(0.87)	(0.84)	(0.27)
Homeowner	0.81	0.81	0.78	0.79	0.78	1.27
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.28)
Child	0.03	0.04	0.03	0.04	0.03	1.15
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.33)
Grandchild	0.10	0.09	0.08	0.09	0.09	0.61
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.66)
Grandchild future	0.10	0.08	0.09	0.11	0.10	1.95
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.10)
Trust in financial markets	4.04	4.25	4.26	4.22	4.09	2.07
	(0.07)	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)
Trust in EU institutions	4.50	4.68	4.61	4.65	4.58	0.84
	(0.08)	(0.07)	(0.07)	(0.08)	(0.08)	(0.50)
Risk tolerant	0.42	0.41	0.42	0.43	0.42	0.27
	(0.02)	(0.01)	(0.01)	(0.02)	(0.02)	(0.90)
Patient	0.70	0.68	0.68	0.68	0.67	0.36
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.83)

Notes: The table reports OLS estimates from separate regressions of each pre-treatment characteristic on indicators for the five randomized treatment groups, T1–T5, estimated without a constant so that the reported coefficients correspond to group-specific means. Robust standard errors are reported in parentheses below each coefficient. The last column reports the F-statistic for the joint null hypothesis that the five treatment-group coefficients are equal; the associated p-value is reported in parentheses below the F-statistic. The balance tests are unweighted and are based on the experimental sample. The sample includes 5,007 observations.

B.2 Experiment design in wave 12 (July 2026)

This appendix reproduces the design of the Wave 12 follow-up experiment on investment-horizon framing: the assignment of respondents to three groups and the fund descriptions shown to each group. Divide the sample into three random groups as follows:

G1 = 50% (2,500 respondents)

G2 = 25% (1,250 respondents)

G3 = 25% (1,250 respondents)

Each group reads different information, corresponding to the three treatments described below.

To all respondents

We will now discuss financial investments, income expectations, and inheritances.

Show to Group G1

Suppose you could invest today, as a one-off, an amount of money of your choice in a diversified equity fund investing in the European market. This fund is managed by an independent European non-profit authority, charges no fees, and its returns are tax-exempt and can be reinvested.

You can withdraw the capital at any time.

The expected average return is 6.5% per year: every €100 invested is worth, on average, about €107 after one year.

However, the investment is risky and its value may fall below the initial amount you invested.

After one year:

- there is a 40% probability that the investment is at a loss, that is, that it is worth less than the amount you invested;
- there is a 60% probability that the investment is at a gain, that is, that it is worth more than the amount you invested;
- these probabilities do not depend on the amount you decide to invest.

Show to Group G2

Suppose you could invest today, as a one-off, an amount of money of your choice in a diversified equity fund investing in the European market. This fund is managed by an independent European non-profit authority, charges no fees, and its returns are tax-exempt and can be reinvested.

You can withdraw the capital at any time.

The expected average return is 6.5% per year: every €100 invested is worth, on average, about €260 after 15 years.

However, the investment is risky and its value may fall below the initial amount you invested.

After 15 years:

- there is a 15% probability that the investment is at a loss, that is, that it is worth less than the amount you invested;
- there is an 85% probability that the investment is at a gain, that is, that it is worth more than the amount you invested;
- these probabilities do not depend on the amount you decide to invest.

Show to Group G3

Suppose you could invest today, as a one-off, an amount of money of your choice in a diversified equity fund investing in the European market. This fund is managed by an independent European non-profit authority, charges no fees, and its returns are tax-exempt and can be reinvested.

You can withdraw the capital at any time.

The expected average return is 6.5% per year: every €100 invested is worth, on average, about €660 after 30 years.

However, the investment is risky and its value may fall below the initial amount you invested.

After 30 years:

- there is a 7% probability that the investment is at a loss, that is, that it is worth less than the amount you invested;
- there is a 93% probability that the investment is at a gain, that is, that it is worth more than the amount you invested.
- these probabilities do not depend on the amount you decide to invest.

To all respondents

B1. Would you be willing to subscribe to a fund with these characteristics?

☐ Yes
☐ No
☐ I don't know

If B1 = 1

B2. If you could freely choose the amount to invest today, how much would you like to invest in a fund with these characteristics?

Desired amount (in euros): _____ € (minimum value: 1)

Table A2 reports descriptive statistics for the 5,027 respondents in Wave 12. The sample closely resembles that used in the main experiment: 21.3% of respondents hold stocks and

77.4% are homeowners. Overall, 24.2% are willing to invest in the fund, 43.0% are unwilling, and 32.8% report that they do not know. Thus, willingness to invest is relatively limited when the equity investment is presented in the short- and medium-horizon setting of the follow-up experiment.

Table A3 assesses balance across the three randomized horizon treatments. Pre-treatment characteristics are very similar across groups, and none of the joint tests rejects equality of means at the 5% level. The smallest p-value is 0.059 for homeownership; all other p-values are comfortably above conventional significance levels. Overall, the results support the validity of the random assignment.

Table A4 shows that the effect of presenting equity returns over longer horizons is positive and statistically significant in all subsamples. Relative to the one-year baseline, the 15-year presentation raises willingness to invest by 7.9–14.9 percentage points, while the 30-year presentation raises it by 12.8–18.7 points. The effects are therefore not confined to respondents currently outside the stock market or with low financial wealth. Point estimates are somewhat larger among stockholders and high-wealth respondents, especially for the 15-year treatment, although the table does not formally test differences across subsamples.

Table A2: Descriptive statistics (Wave 12)

Label	Mean	SD
Male	0.50	0.50
Age 35 to 50	0.28	0.45
Age 51 to 65	0.36	0.48
Age 66 to 75	0.12	0.33
Family size	2.82	1.13
College degree	0.19	0.40
North	0.46	0.50
Centre	0.20	0.40
Financial wealth	24.39	26.57
Stockholding	0.21	0.41
Homeowner	0.77	0.42
Willing to contribute	0.24	0.43
Not willing to contribute	0.43	0.49
DK if contribute	0.33	0.47

Notes: The table reports weighted means and standard deviations for respondents assigned to the three experimental groups (T1–T3) in wave 12. Statistics are computed using the survey sampling weights. Financial wealth is expressed in thousands of euros. The sample includes 5,027 observations.

Table A3: Balance test of pre-treatment characteristics (Wave 12)

Variable	T1	T2	T3	F-test
Male	0.49	0.48	0.47	0.88
	(0.01)	(0.01)	(0.01)	(0.41)
Age 35 to 50	0.33	0.31	0.30	2.00
	(0.01)	(0.01)	(0.01)	(0.14)
Age 51 to 65	0.38	0.40	0.40	1.43
	(0.01)	(0.01)	(0.01)	(0.24)
Age 66 to 75	0.12	0.11	0.12	0.48
	(0.01)	(0.01)	(0.01)	(0.62)
Family size	2.81	2.75	2.80	1.13
	(0.02)	(0.03)	(0.03)	(0.32)
College degree	0.27	0.27	0.28	0.03
	(0.01)	(0.01)	(0.01)	(0.97)
North	0.46	0.45	0.45	0.36
	(0.01)	(0.01)	(0.01)	(0.70)
Centre	0.20	0.20	0.20	0.07
	(0.01)	(0.01)	(0.01)	(0.93)
Financial wealth	26.14	27.99	26.96	1.94
	(0.53)	(0.78)	(0.78)	(0.14)
Homeowner	0.81	0.77	0.80	2.83
	(0.01)	(0.01)	(0.01)	(0.06)

Notes: The table reports OLS estimates from separate regressions of each pre-treatment characteristic on indicators for the three randomized treatment groups, T1–T3, estimated without a constant so that the reported coefficients correspond to group-specific means. Robust standard errors are reported in parentheses below each coefficient. The last column reports the F-statistic for the joint null hypothesis that the five treatment-group coefficients are equal; the associated p-value is reported in parentheses below the F-statistic. The balance tests are unweighted and are based on the experimental sample. The sample includes 5,027 observations.

C Simulation of the ECEF

This appendix documents the simulations of the ECEF: the design of the simulation (C.1), the life-cycle results (C.2), the comparison with a risk-free bond (C.3), the cost of the government guarantee (C.4), the allocation of 1% of the fund to European venture capital (C.5), robustness checks (C.6), the alternative assumption of normally distributed returns (C.7), and serially correlated returns (C.8).

C.1 Design of the simulation

The simulation tracks an ECEF account receiving a contribution of €120 at the end of each year from birth to age 70. Annual real returns are drawn i.i.d. from a lognormal distribution,

Table A4: Investment horizon and willingness to subscribe: heterogeneity by stockholding and financial wealth (Wave 12)

	Stockholders	Non-stockholders	High wealth	Low wealth
15 years investment	0.15***	0.09***	0.15***	0.08***
	(0.03)	(0.01)	(0.02)	(0.02)
30 years investment	0.19***	0.13***	0.17***	0.13***
	(0.03)	(0.01)	(0.02)	(0.02)
N	1,203	3,824	2,346	2,681
Baseline T1	0.36	0.14	0.23	0.16

Notes: The table reports average marginal effects from Probit regressions estimated separately for stockholders and non-stockholders and for respondents with financial wealth above and below the sample median. The dependent variable equals one if the respondent is willing to subscribe to the fund and zero otherwise. T1, which presents fund returns over a one-year investment horizon, is the omitted category; T2 and T3 present returns over 15-year and 30-year horizons, respectively. All specifications include controls for gender, age, household size, college education, geographical area, financial wealth, and homeownership. The last row reports the mean of the dependent variable in the baseline T1 group for the corresponding estimation sample. Robust standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10, 5, and 1 percent levels, respectively.

the model used in the survey information: the gross return $1+r$ is lognormal with parameters $s^2 = \ln[1+\sigma^2/(1+\mu)^2]$ and $m = \ln(1+\mu) - s^2/2$ ($m = 0.047$, $s = 0.177$), so that the mean annual real return is 6.5% and the standard deviation 19%, the values used in the survey information; the mean is close to the historical geometric (compound) average return of about 6.7 percent, and the standard deviation to the historical volatility of about 18.3% (both over 1948–2025, see Appendix D). The fund value evolves as $V(t) = V(t-1)(1+r(t)) + 120$, with $V(0) = 0$. All values are in real terms (today's prices). We simulate 500,000 independent return paths with a fixed random seed, so all results are exactly reproducible. The analytical expected value at age 70 is $120 \times [(1.065)^{70} - 1]/0.065 =$ €149,768, since the arithmetic mean return does not depend on the distribution; the simulated mean is within 0.05% of this benchmark. The code is in the project folder (PythonStataCode) and runs from a single Stata master file (main.do) that calls Python.

C.2 Life-cycle results

Figure 1 in the main text is produced from this simulation and is not reproduced here. Panel (a) reports the median fund value, the interquartile range, the 5th–95th percentile range, and the accumulation path under a constant 6.5% return. Panel (b) reports the probability that the fund value falls below cumulative contributions and the mean fund value conditional on such a loss, from age 2 onward (at age 1 the first contribution has just been invested). It also reports the probability of a loss for an account funded by a single contribution at age 1, computed on the same simulated paths: this probability does not depend on the amount contributed and equals $\Phi(-\sqrt{t-1}\,m/s)$ at age t. Table A5 reports the underlying life-cycle

statistics; Table A6 reports the full distribution of the fund value at age 70.

Table A5: ECEF value and downside risk at selected ages

Age	Contributions (€)	E[V] analytical (€)	Mean (€)	Median (€)	P5 (€)	P95 (€)	Prob. of loss (%)	Cond. mean if loss (€)
10	1,200	1,619	1,619	1,519	929	2,645	22.36	1,025
20	2,400	4,659	4,656	4,017	1,889	9,524	13.72	1,962
30	3,600	10,365	10,356	8,110	3,055	25,065	8.90	2,868
40	4,800	21,076	21,072	14,783	4,558	57,948	5.88	3,764
50	6,000	41,182	41,152	25,655	6,495	124,865	4.00	4,647
60	7,200	78,923	79,002	43,190	9,105	257,712	2.72	5,516
70	8,400	149,768	149,706	71,670	12,573	515,447	1.85	6,399

Notes: 500,000 simulated paths; lognormal returns with mean 6.5% and standard deviation 19%. Loss is defined as a fund value at or below cumulative contributions.

Table A6: Distribution of the ECEF value at age 70

Statistic	Fund value at age 70 (€)
P1	6,814
P5	12,573
P10	17,963
P25	33,916
P50	71,670
P75	157,127
P90	328,620
P95	515,447
P99	1,226,481
Mean	149,706
Std. dev.	304,359
Prob. value $\leq$ contributions (%)	1.85
Cond. mean if loss (€)	6,399
Avg. loss if loss (€)	2,001

Notes:

C.3 Comparison with a risk-free bond

If the €120 annual contribution were invested in a risk-free bond yielding 1.5% in real terms, the value after 70 years would be €14,684, roughly one tenth of the expected value of the equity fund. The bond outcome corresponds approximately to the 7th percentile (6.9%) of the simulated equity distribution: the equity fund ends above the safe alternative in more than 93% of paths.

C.4 Cost of the government guarantee

The break-even fee of a guarantee is the share α of the terminal fund value, paid when the fund ends above the guaranteed floor, that equals the expected shortfall payment: $\alpha = E[\max(F - V, 0)]/E[V \cdot 1(V \geq F)]$, where F is the floor. With F equal to total contributions (€8,400), $\alpha = 0.025\%$: the shortfall probability is 1.85% and the average shortfall €2,001. With F equal to the bond value (€14,684), $\alpha = 0.20\%$, about eight times more expensive, reflecting the higher trigger probability (6.9%) and the larger average payout, but still modest.

C.5 Allocating 1% of the fund to European venture capital

We calibrate the return of a diversified European venture capital fund as follows. All simulation parameters are real, net of inflation. Invest Europe (2026) reports a since-inception net IRR of 11.25% per year for European VC funds; this is a nominal return. Subtracting average euro-area inflation of about 2.2% per year yields a mean annual real return of approximately 9%, which we use in the simulation. The classic US reference is Cochrane (2005), who estimates, at the level of individual VC investments and correcting for selection bias, an arithmetic mean return of 59% with a standard deviation of 107% (nominal). A diversified VC fund is far less volatile than a single investment: fund-level studies imply betas on public equity between 1.9 and 2.4 (Korteweg and Sørensen, 2010) and de-smoothed fund-level volatilities in the 30–45% range; US fund performance is surveyed in Harris et al. (2014). We therefore set the annual real standard deviation to 35% and the correlation with the European public equity return to 0.6. VC returns are lognormal with these moments, correlated with the equity return through the log-return shocks, and the portfolio return is r = 0.99 r_equity + 0.01 r_VC. Table A7 compares the baseline ECEF with the 1% VC allocation: the expected value at age 70 rises by about €1,900 while downside risk is essentially unchanged.

Table A7: Baseline ECEF versus 1% allocation to European venture capital

Statistic	Baseline ECEF	1% in European VC
Mean annual return (%)	6.50	6.53
Return std. dev. (%)	19.00	19.02
Expected value at 70, analytical (€)	149,768	151,696
Mean value at 70, simulated (€)	149,706	151,634
Median value at 70 (€)	71,670	72,477
P5 at 70 (€)	12,573	12,663
P95 at 70 (€)	515,447	522,779
Prob. value $\leq$ contributions at 70 (%)	1.85	1.81

Notes: 500,000 simulated paths per distribution; mean annual real return 6.5% and standard deviation 19% in both cases.

C.6 Robustness

We verified the robustness of the simulation results in three directions, always relative to the lognormal baseline. First, alternative volatilities: repeating the simulation with an annual standard deviation of 18.5% (the historical estimate) or 20%, with the lognormal parameters re-matched so that the mean stays 6.5%, leaves the expected value at age 70 unchanged and moves the probability of a terminal loss from 1.9% to 1.5% and 2.7%, respectively, with the median moving from about €71,700 to €74,200 and €66,400. Second, different random seeds: across independent 500,000-path runs, the median value at age 70 varies by less than 0.5% and the loss probability by less than 0.05 percentage points. Third, sample size: increasing the number of simulated paths to 2,000,000 leaves all reported statistics essentially unchanged. Results are therefore very similar across all these variations.

C.7 Normal returns

The baseline draws annual returns from a lognormal distribution, as in the survey information and the original simulations of the policy proposal. As an alternative, we draw returns from a normal distribution with the same first two moments (mean 6.5%, standard deviation 19%). Table A8 compares the two. The mean value at age 70 is unchanged, at about €150,000, since it depends only on the mean return. The normal thickens the left tail: the probability of ending below total contributions rises from 1.9% to 2.7%, the 5th percentile falls from about €12,600 to about €11,100, and the median is somewhat lower (about €69,500 versus €71,700). Differences are therefore modest and concentrated in the tails, and the qualitative conclusions of the paper are unaffected by the distributional assumption.

Table A8: Lognormal baseline versus normal returns (same mean and standard deviation)

Statistic	Lognormal (baseline)	Normal returns
Mean value at 70 (€)	149,706	150,278
Median value at 70 (€)	71,670	69,486
P5 at 70 (€)	12,573	11,073
P10 at 70 (€)	17,963	16,156
P90 at 70 (€)	328,620	334,589
P95 at 70 (€)	515,447	529,517
Prob. value $\leq$ contributions at 70 (%)	1.85	2.74
Cond. mean if loss at 70 (€)	6,399	6,132
Prob. of loss at age 10 (%)	22.36	22.99

Notes: 500,000 simulated paths per distribution; mean annual real return 6.5% and standard deviation 19% in both cases.

C.8 Serially correlated returns

The baseline assumes i.i.d. returns. Annual equity returns display little serial correlation, with some evidence of mean reversion over longer horizons (Fama and French, 1988; Poterba and Summers, 1988). In our historical European series (1948–2025, Appendix D), the estimated first-order autocorrelation is −0.03 (standard error 0.11) and the second-order autocorrelation −0.10. A reasonable calibration is therefore a modest negative value; we set $\rho = -0.1$, within one standard error of the point estimate and in the direction indicated by the mean-reversion literature. Serial correlation is applied to the lognormal baseline: the log gross return $x(t) = \ln(1 + r(t))$ follows $x(t) = m + \rho\,[x(t-1) - m] + \varepsilon(t)$, with the innovation variance scaled so that each year's return remains lognormal with unconditional mean 6.5% and unconditional standard deviation 19%. We consider five scenarios for the state of the market in the first year of life: the log return starts at its unconditional mean, one or two standard deviations below it, and one or two standard deviations above it. All scenarios use the same sequence of shocks, so differences reflect only the initial state.

Table A9 reports the results, which carry two messages. First, initial conditions are irrelevant for the ECEF: across the five scenarios the mean value at age 70 varies by less than half a percent, the median by about €200, and the loss probability not at all. The state of the market at birth decays within a few years, and almost no capital is invested in those years. Starting below the mean is, if anything, marginally favorable, because mean reversion raises subsequent returns. Second, mean reversion dampens compounding in both tails: relative to the i.i.d. baseline, the expected value at age 70 falls to about €128,800 (the far right tail is trimmed), while the probability of a loss falls from about 1.9% to about 1.1% and the median falls only slightly. Serial correlation of this size therefore makes the fund somewhat safer, at the cost of a lower expected value, with the one-year mean return unchanged at 6.5%.

Table A9: Serially correlated returns: initial-state scenarios (ρ = –0.1)

Initial state	First-year return (%)	Mean at 70 (€)	Median at 70 (€)	P5 (€)	P95 (€)	Prob. of loss (%)
2 sd below mean	-26.41	128,994	70,512	14,454	422,338	1.11
1 sd below mean	-12.16	128,879	70,458	14,448	421,917	1.11
Unconditional mean	4.84	128,767	70,406	14,442	421,549	1.11
1 sd above mean	25.15	128,656	70,357	14,436	421,132	1.11
2 sd above mean	49.38	128,547	70,309	14,429	420,732	1.12

Notes: AR(1) on log returns, x(t) = m + ρ[x(t–1) – m] + ε(t), with each year's return lognormal with unconditional mean 6.5% and unconditional standard deviation 19%; 500,000 paths; identical shock sequences across scenarios. The first-year return equals the initial state; the value of the fund is unaffected by it directly, since contributions start at the end of year one.

D Historical returns of ECEF by cohort

This appendix documents the historical-returns evidence: the data and the construction of the European real equity return series (D.1), the fund values and internal rates of return of the cohorts born since 1948 (D.2), and the data sources and replication files (D.3).

D.1 Data and construction of the return series

Historical real equity returns are taken from the Jordà–Schularick–Taylor Macrohistory Database, release R6 (Jordà et al., 2019; `www.macrohistory.net/database`). For each country, the nominal total equity return (price appreciation plus dividends) is converted into a real return using the country CPI: Req(t) = (1 + eq_tr(t)) × CPI(t–1)/CPI(t) – 1.

The European return is a weighted average of ten countries, with weights that approximate the country composition of the Euro Stoxx 600 (stoxx.com factsheet, March 2025): UK 23.3%, France 16.9%, Switzerland 14.5%, Germany 14.0%, Netherlands 6.4%, Sweden 5.1%, Italy 4.8%, Spain 4.5%, Denmark 4.2%, Finland 1.7%. The raw weights sum to 0.954 and are renormalized to sum to one. The series is extended to 2021–2025 using the real return of an ETF on the Euro Stoxx 600 net of inflation: 22.3% (2021), –19.0% (2022), 10.4% (2023), 6.4% (2024), and 17.6% (2025). The final series covers 1948–2025. Over this period the geometric (compound) average return is approximately 6.7 percent per year in real terms: one euro invested in 1948 grows at that compound rate. This is the relevant benchmark for the 6.5 percent used in the paper, which is therefore slightly conservative. The arithmetic mean of annual returns is higher, approximately 8 percent (Table A10), because of return volatility.

Table A10: Descriptive statistics of the European real equity return, 1948–2025

Statistic	Value
Years covered	1948–2025
Number of years	78
Mean annual real return, arithmetic (%)	8.28
Mean annual real return, geometric (%)	6.66
Standard deviation (%)	18.32
Minimum (%)	-40.32
Maximum (%)	58.38
Positive years	54
Negative years	24
Mean return in positive years (%)	17.62
Mean return in negative years (%)	-12.74

Notes: real total returns; weighted average of ten European markets with renormalized Euro Stoxx 600 weights; 2021–2025 from an ETF on the Euro Stoxx 600, net of inflation.

D.2 Cohort fund values

For each cohort born on 1 January of year b (1948–2025), we compute the value of a fund receiving €120 on 1 January of each year from birth, with all returns reinvested and no taxes or fees: V(y) = (V(y–1) + 120) × (1 + Req(y)). The value is reported at the beginning of 2026; for cohorts older than 70 the value is reported at age 70, so the maximum number of contributions is 70 (€8,400 in total). All values are real. Table A11 reports twenty representative cohorts, one every four birth years; the full set of results is in the project files. For each cohort the table also reports the implied internal rate of return, the constant annual return that makes the sequence of €120 contributions grow to the reported fund value. No cohort has a fund value below its cumulative contributions. While the value per euro contributed ranges from about 1.2 for the youngest cohorts to about 24 for the oldest, the internal rate of return varies much less, roughly between 5.5 and 7.5 percent per year for cohorts with at least ten years of contributions: differences in accumulated multiples mainly reflect the length of the investment period, not differences in average returns. Note that the internal rate of return is a compound annual return: it fluctuates around the geometric average of the series, approximately 6.7 percent per year, which is below the arithmetic mean of approximately 8 percent because of return volatility (Table A10). The last column of the table reports the distribution of the Wave 11 respondents across the corresponding cohort classes, computed from the survey data: the sample spans the cohorts born between 1951 and 2008, with most respondents born between the mid-1950s and the mid-1990s.

D.3 Data sources and replication

Data files (JSTdatasetR6.dta, Historicalreturn.dta) are stored in the project folder OriginalData; all code (Python simulation, Stata construction of the return series and of the cohort values) is in PythonStataCode and runs from main.do; the readme file in the simulation folder documents which program produces each figure and table. Data on live births used for the aggregate calculations are from Eurostat fertility statistics; Italian GDP is from Istat national accounts. Euro Stoxx 600 capitalization is from stoxx.com. Venture capital assets under management are from NVCA (2025) for the United States and Invest Europe (2025) for Europe.

E Simulation appendix

This appendix completes Section 8. Appendix E.1 gives the model in full, including the probabilities of willingness, and Appendix E.2 the order of events within a year and the transition rules. Appendix E.3 gives the calibration, with every parameter, target and source. Appendix E.4 verifies the simulation and reports the results by design, Appendix E.5 the complete results of the accompanying policies, Appendix E.6 the robustness checks and the limits of the exercise, and Appendix E.7 the cost of the guarantee for public finances and the

Table A11: Historical value and internal rate of return for 22 representative cohorts

Birth year	Years invested	Contributions (€)	Fund value (€)	Value / contributions	IRR (% per year)	Respondents (%)
1948	70	8,400	202,113	24.06	6.95	0.00
1951	70	8,400	178,815	21.29	6.72	0.58
1954	70	8,400	151,289	18.01	6.40	2.52
1957	69	8,280	157,655	19.04	6.60	3.50
1960	66	7,920	133,239	16.82	6.66	5.01
1963	63	7,560	119,635	15.82	6.85	6.93
1966	60	7,200	105,659	14.67	7.03	7.37
1969	57	6,840	90,432	13.22	7.15	8.29
1972	54	6,480	79,047	12.20	7.35	8.47
1975	51	6,120	67,927	11.10	7.54	7.79
1978	48	5,760	53,121	9.22	7.47	8.37
1981	45	5,400	39,952	7.40	7.28	7.23
1984	42	5,040	28,061	5.57	6.81	6.03
1987	39	4,680	20,901	4.47	6.49	5.27
1990	36	4,320	16,403	3.80	6.34	3.65
1993	33	3,960	12,743	3.22	6.14	5.75
1996	30	3,600	9,777	2.72	5.85	5.37
1999	27	3,240	7,767	2.40	5.74	3.52
2002	24	2,880	6,709	2.33	6.26	2.44
2005	21	2,520	5,287	2.10	6.31	1.34
2008	18	2,160	4,273	1.98	6.80	0.58
2011	15	1,800	3,232	1.80	7.02	0.00

Notes: real values at the beginning of 2026; cohorts older than 70 report the value at age 70. Based on the historical European real return series of Table A10. The internal rate of return solves $120(1+r)[(1+r)^n - 1]/r =$ fund value, with n the number of contributions. Over very short horizons the internal rate of return is dominated by the most recent years (for the 2024 cohort, by the strong 2024–2025 returns). The last column reports the share of Wave 11 respondents (5,007 individuals) in each cohort class, computed from the survey variable eta (birth year = 2026− age). The class of the first row contains respondents born in or before 1948, and each later row the three calendar years ending with its birth year (row 1951: born 1949–1951; row 1954: born 1952–1954; and so on). Shares sum to 100 percent. The first and last rows contain no respondents by construction, because respondents are aged 18 to 75 (born 1951–2008): they are included to show the coverage of the survey sample. Source: the official ISCE wave dataset (data_1_2_3_4_5_6_7_8_9_10_11.dta), Wave 11.

scope for investing part of the fund in venture capital. Every figure and table is produced by the code that runs the model.

E.1 The model

Section 8 summarizes the model. Here we describe the accounts and the households, then give the state of a household, stock-market participation and the probabilities of willingness, then the rules of the accounts and of the accompanying policies, and finally the aggregates and the simulation. The model has no gender: the two heads of a household are not distinguished by sex.

Time t is measured in years. An individual born in year b has age $a = t - b$ in year t, and no one survives beyond age $\bar{a}$. All age-specific rates are indexed by this age; the population statistics of Appendix E.3 index age in completed years at the start of the year, one less

than a.

ECEF accounts The ECEF is launched in year t_0. Every child born from t_0 onward is eligible and has up to three *potential sponsors*: the household of its parents and, if alive, the households of its two sets of grandparents. An account is opened in the child's name at birth if at least one potential sponsor is willing to contribute; there is one account per child, whatever the number of sponsors. The account receives an initial contribution B, zero unless paid by the government (policy (iii) below), and then C a year: from the sponsors while the child is a *minor* (aged 0 to 17), and from the child thereafter. A sponsor participates in the stock market as long as it contributes. Contributions compound at the mean real return r, so that after n contributions the expected value of the account is $B(1+r)^n + C\frac{(1+r)^n-1}{r}$. Returns are stochastic in the simulation of a single account in Section 2; here, as in the main text, we track the expected value. The account is closed at the owner's death and liquidated at age 70, when its value is paid to the owner.

Households A household consists of two heads of the same age and their children who are still at home. A child who leaves home forms a new household with another individual who leaves in the same year; the two become its *heads*. A household is linked to at most two *parent households*, the households in which its heads were born, if still alive, which are the *grandparent households* of its children; and to the *child households* formed by its children who have left home.

The state of a household, $\mathbf{s}$, listed in Table A12, is

$$\mathbf{s} = \Big[\, a,\ k,\ \ell,\ a_1,\ a_2,\ a_3,\ m,\ w_p,\ w_{gc},\ o;\ \ a_{gp1},\ w_{gp1},\ a_{gp2},\ w_{gp2},\ a_{gc} \,\Big]. \tag{A.1}$$

The first ten entries are variables of the household and the last five describe its linked parent and child households. The household has age a and $k \in \{0,1,2,3\}$ children; of these, $\ell \leq k$ have left home. Children are ordered by age, from youngest to oldest, with ages $a_1 \leq a_2 \leq a_3$ and $a_i = \emptyset$ if the i-th child does not exist. The variable $m \in \{0,1\}$ is an exogenous indicator of whether the household holds stocks for reasons unrelated to the ECEF. The variables w_p and w_{gc} denote the heads' willingness to sponsor an ECEF account for their children and grandchildren, respectively: 1 if the heads are willing to sponsor the account, 0 if they are not, and u if their willingness has not yet been determined. Finally, $o \in \{0,1\}$ indicates whether the heads own an ECEF account; by assumption, either both heads own an account or neither does. For each of the two parent households, indexed by $i = 1,2$, the state contains its age, a_{gpi}, and its willingness to sponsor an ECEF account for its grandchildren, $w_{gpi} \in \{u,0,1\}$; if parent household i is dead or does not exist, $a_{gpi} = \emptyset$ and $w_{gpi} = 0$. From the linked child households, the state contains the age of the youngest grandchild, a_{gc}, the smallest a_1 among all child households, with $a_{gc} = \emptyset$ if no grandchild has been born.

Stock-market participation The *stock-market participation* status of a household is denoted by $\mu \in \{0,1\}$, with $\mu = 1$ indicating participation. A household participates if it

Table A12: The state of a household

Variable	Values	Meaning	Updated by
Own variables			
a	$0, \ldots, \bar{a}$	age of the heads	aging
k	$0, 1, 2, 3$	children born to the household	births
ℓ	$0, \ldots, k$	children who have left (or died at home)	leaving, deaths
a_1, a_2, a_3	$\emptyset, 0, 1, \ldots$	ages of the children, youngest first ($\emptyset$: no such child)	births, aging
m	$0, 1$	exogenous stock-market participation	entry h_a, exit δ_a
w_p	$u, 0, 1$	willingness to sponsor an ECEF for the children	first occasion as parents
w_{gc}	$u, 0, 1$	willingness to sponsor an ECEF for the grandchildren	first occasion as grandparents
o	$0, 1$	the heads own an ECEF account	formation, withdrawal at 70
Linked-household variables			
a_{gp1}, a_{gp2}	$\emptyset, 0, 1, \ldots, \bar{a}$	age of parent households 1 and 2 ($\emptyset$: dead or none)	aging, deaths
w_{gp1}, w_{gp2}	$u, 0, 1$	their willingness to sponsor grandchildren (0: dead or none)	their w_{gc}, deaths
a_{gc}	$\emptyset, 0, 1, \ldots$	age of the youngest grandchild ($\emptyset$: none)	births in child households

Notes: The date t is common to all households and is not listed. Accounts are attached to individuals (Appendix E.1); o summarizes the accounts of the heads; w_{gpi} is the w_{gc} of parent household i, written $w_{gc}(i)$ below. Under policy (ii), the state also records whether the household holds an account opened for its next child, its balance and the number of contributions it has received.

holds equity: we set $\mu = 1$ if at least one of the following conditions holds: the household holds stocks for reasons unrelated to the ECEF, $m = 1$; the heads own an ECEF account, $o = 1$; a child living at home owns an ECEF account, whoever contributes to it; or, under policy (ii), the household holds an account opened for its next child. Before the launch at t_0, $\mu = m$. A household that only contributes to the account of a child or grandchild living elsewhere ($w_p = 1$ with a minor child who has left home, or $w_{gc} = 1$ with a minor grandchild) is not a participant; we report such sponsor-only households separately.

Willingness to sponsor Stock-market participation μ records whether a household holds equity; its willingness, w_p and w_{gc}, records whether it is prepared to pay into an ECEF account for a child or a grandchild. A household settles w_p at the first birth of a child after the launch and w_{gc} at the first birth of a grandchild; policies (i) and (ii) below add further occasions. Once settled, willingness never changes. The building block is the *baseline probability of willingness* τ_μ: the probability, measured in our survey, that a household with participation status μ is willing to sponsor an account, τ_0 for non-participants and τ_1 for participants. Since an account owned by the heads or by a child living at home makes a household a participant, the program raises the share of households that are willing

with probability τ_1 rather than τ_0. Three parameters make willingness correlated within families. Heads who own an ECEF account themselves ($o = 1$) are willing to sponsor their children with probability at least ρ_o. A household that sponsors its children ($w_p = 1$) is willing to sponsor its grandchildren with probability at least ρ_w. Finally, with probability α a household takes its willingness to sponsor its children from that of one of its parent households to sponsor their grandchildren, instead of drawing it with probability τ_μ; α captures the resemblance between a household and its parent households, arising either from marriage-market sorting or from the intergenerational transmission of preferences. At a birth, the grandparent households settle their willingness before the household of the parents. The probabilities are as follows.

Consider a child born in household j, and let i denote one of the newborn's two grandparent households. The grandparent households set their willingness first. If $w_{gc}(i)$ has not yet been set, household i is willing to sponsor an ECEF account for its grandchildren with probability

$$\Pr\Big[w_{gc}(i) = 1\Big] = \rho_w \, w_p(i) + \Big[1 - \rho_w \, w_p(i)\Big] \, \tau_{\mu(i)}, \tag{A.2}$$

where $\rho_w \in [0, 1]$ and $\tau_{\mu(i)}$ is the baseline willingness probability measured in the survey, which depends on household i's stock-market participation status $\mu(i)$. A household that did not sponsor an ECEF account for its own children, $w_p(i) \neq 1$, is willing to sponsor one for its grandchildren with the baseline probability $\tau_{\mu(i)}$.[16] By contrast, a household that did sponsor an account for its children, $w_p(i) = 1$, is willing to sponsor one for its grandchildren with the higher probability $\rho_w + (1 - \rho_w) \, \tau_{\mu(i)}$. Thus, ρ_w measures the extent to which willingness to sponsor one's own children carries over to willingness to sponsor one's grandchildren.

Household j then sets its willingness $w_p(j)$ conditional on the willingness of one of its parent households, denoted by i^*. If only one parent household is alive, i^* is that household; if both are alive, either is selected with probability one half.[17] The probability that household j is willing to sponsor an ECEF account for its children is

$$\Pr\Big[w_p(j) = 1 \mid w_{gc}(i^*)\Big] = \rho_o \, o(j) + [1 - \rho_o \, o(j)] \, \Big[\alpha \, w_{gc}(i^*) + (1 - \alpha) \, \tau_{\mu(j)}\Big], \tag{A.3}$$

where $\rho_o \in [0, 1]$ and $\alpha \in [0, 1]$. The parameter ρ_o in the first term of (A.3) captures the extent to which heads who own an ECEF account, $o(j) = 1$, are more willing to sponsor an account for their children. The parameter α within the square brackets links the willingness of household j to that of its parent household, $w_{gc}(i^*)$. It captures the resemblance in willingness between a household and its parent household, arising either from marriage-market sorting or from the intergenerational transmission of preferences.

In equations (A.2) and (A.3), μ is the participation status at the start of the year, and a willingness settled at an earlier occasion is retained. Two implications follow. A grandparent household with a minor child at home who owns an account is a participant at its first occasion as a grandparent, so if its willingness is drawn it is willing with probability τ_1 rather

[16] In equation (A.2), a willingness that has not yet been set, u, enters as 0.

[17] If i^* does not exist, because both parent households of j have died or because the heads of j are migrants with no parent household, $w_p(j)$ is drawn as if $\alpha = 0$: $\Pr[w_p(j) = 1] = \rho_o \, o(j) + [1 - \rho_o \, o(j)] \, \tau_{\mu(j)}$.

than τ_0. A household with children born before the launch settles w_p at its first birth after the launch.

Accounts The value of an account evolves as $V_{t+1} = (1 + r)V_t + C$, with $V = 0$ before the first contribution: contributions are paid at the end of the year. The owner keeps the account when leaving home.

Table A13 collects the terms used in this appendix.

Table A13: Terminology

Term	Definition
Heads	The two individuals who formed the household; parents of its children, grandparents of the children of its child households.
Parent household	The household in which a head was born; a grandparent household of the household's children.
Child household	A household formed by a child of the household.
Minor	A child from its birth to the year in which it is aged 17; its sponsors pay its contributions.
Occasion	A birth from t_0 on, or a launch or pre-birth occasion under the accompanying policies, at which the household and its parent households settle their willingness if not yet settled.
Sponsor	A potential sponsor of a child (its parents' household or one of their parent households) that is willing; it pays the contributions while the child is a minor.
Enrollment	The opening of an ECEF account in the name of a child.
Account owner	The child in whose name the account is opened; it pays the contributions from the year in which it is aged 18 and withdraws in the year in which it is aged 70, after seventy years of contributions.

Accompanying policies We study three accompanying policies, introduced at launch and designed to speed up the transition to the steady state, added one at a time: (i), (i)+(ii), and (i)+(ii)+(iii).

(i) Enrolling children already born. Under (i), households with children aged 1 to 10 living at home can fund an ECEF account for them at launch, t_0. The household and its living parent households draw their willingness as at birth, and the child is enrolled if at least one of the three is willing to contribute.

(ii) An account for the next child. Under (ii), a household that can still have another child may open an account before the child is born. In addition to births, the launch year t_0 and the formation of a household are occasions for opening such an account. The account is opened if the household or one of its living parent households is willing to sponsor it. It receives the yearly contribution for up to five years, for a total of at most €600, and compounds like the other accounts. At the next birth, the account becomes the newborn's

account. If no further child is born, the balance is transferred to the account of the youngest child or, if the household has no child, refunded.

(iii) A government contribution. Without policy (iii), $B = 0$. Under policy (iii), the government pays a lump-sum contribution of $B = €1,000$ into every account opened.

The accompanying policies leave the rule of willingness unchanged. Under (i), the launch occasion comes before the births of the year, and a child enrolled at launch receives its first contribution in t_0. Under (ii), the fertile ages of the launch occasion are those at which the heads can still have a child; the balance of an account not used for a birth is settled when the heads leave the fertile ages or die. Under (iii), the lump sum is paid in the year the account is opened: at birth for a newborn, in t_0 for a child enrolled at launch, and at the birth for an account opened before it.

Aggregates Before the program, $\mu = m$, and the share of households aged a that participate at the start of the year is the profile p_a, carried forward by the hazards: $p_{a+1} = p_a + (1 - p_a)h_a - p_a\delta_a$. With $\mathcal{H}_t$ the set of H_t households at the end of year t, $\Pi_t = H_t^{-1} \sum_{j \in \mathcal{H}_t} \mu_j$. θ_t is the average, over the households with a birth in t, of the probability that at least one of the three potential sponsors is willing; it depends on their states and has no closed form. $S_t = \sum_{i \in \mathcal{A}_t} V_{i,t}$ over the accounts $\mathcal{A}_t$ open at the end of year t: those of living owners and, under policy (ii), those opened for a child not yet born. Two further aggregates are reported: the flows into and out of participation (households that become participants, by channel: entry into m, an account received by a child at home (or, under policy (ii), a next-child account), a new household whose heads participate or bring an account; households that cease to participate, by cause: exit from m, the departure or death of the last child at home with an account, the withdrawal at 70; and deaths of participant households), the share of sponsor-only households (households that contribute to an account without being participants), and the cost of the opening contribution of policy (iii), B times the accounts opened for children, in the first year and cumulated over ten years, in percent of M.

Simulation The population of 1960 is a scaled replica of the country's households by age, each simulated household representing the same number of actual households. From 1960 to $t_0 - 1$ the births, the migrants and the hazards are the historical ones and m follows h_a and δ_a; at t_0 every household whose heads are aged 66 or less has parent households, child households and grandchildren generated by the model, and no link is imposed. Every draw uses a fixed seed: all simulations start from the same population at t_0 and use the same random numbers. With one million households the sampling standard error of a participation share is at most 0.05 percentage points. Four identities hold by construction and are verified in every run: the births of every year equal N_t; the households by age reproduce the projection to its horizon; without the program the participation profile reproduces p_a; and with $\rho_o = \rho_w = 0$, $\alpha = 0$ and draws on m, the enrollment rate at t_0 equals the static formula of Section 8.

E.2 Timing and transitions

In year t, N_t children are born and $E_{t,a}$ individuals aged a enter the economy through net migration, both as in the official population projections. The survival probabilities s_a, the leaving-home hazard $\lambda(a)$, the fertility hazards $\pi(a,k)$, the stock-market entry and exit hazards h_a and δ_a, the pre-launch participation profile p_a and the factor ϕ_t are calibrated in Appendix E.3. In year t the following events occur in this order; conditional on the state, each is drawn independently across households and individuals.

1. *Aging.* Every age in the state rises by one.
2. *Deaths.* The heads of a household aged a die together with probability $1 - s_a$, with certainty at $\bar{a}$; each child at home aged a_i dies with probability $1 - s_{a_i}$. The household of deceased heads dissolves, and the accounts of the dead are closed. In every child household of deceased heads, a_{gpi} becomes $\emptyset$ and w_{gpi} becomes 0.
3. *Leaving and formation.* Each child at home aged a_i leaves with probability $\lambda(a_i)$, and all children leave if the heads have died. Each leaver draws $m = 1$ with probability p_{a_i}, the pre-program participation rate at its age, and keeps its account status o. Leavers are paired at random within cells of the same age, the same m and the same o: pairing by m reflects the sorting of spouses by attitudes toward financial markets, while pairing by o keeps account ownership a property of the household. If the number of leavers in a cell is odd, the remaining leaver is paired with a copy of itself. Each pair forms a household with $k = \ell = 0$, $a_1 = a_2 = a_3 = \emptyset$, $w_p = w_{gc} = u$ and the common m and o, linked to the two parent households of the leavers, whose ℓ rises by one. Migrants aged 16 and over form households in the same way, with $m = 1$ with probability p_a, $o = 0$ and no parent households.[18]
4. *Births.* A household with $k < 3$ has a child with probability $\phi_t\,\pi(a,k)$, with ϕ_t such that births equal N_t. The newborn has $a_1 = 0$ and k rises by one; in each parent household $a_{gc} = 0$.
5. *Exogenous stock-market participation.* m switches from 0 to 1 with probability h_a and from 1 to 0 with probability δ_a, for every household.
6. *Willingness and accounts.* From t_0 on, each birth, and under the accompanying policies each launch or formation occasion, is an occasion for the household and its parent households, with the probabilities (A.2) and (A.3).
7. *Contributions and withdrawal.* The accounts of the owners aged 70 are withdrawn and closed; every other open account receives the contribution of the year.
8. *Measurement.* The aggregates are computed.

[18] Younger migrants enter as children without a parent household and leave home with the same hazard $\lambda(a)$ as other children. A negative inflow removes households and children of that age at random, in proportion to their numbers.

E.3 Calibration

Section 8 summarizes the calibration. Table A14 lists the calibrated parameters and their sources, Table A16 the targets and the model values, and Figure A1 shows the main calibrated objects. We first give the conventions and the details of the demography, then those of stock-market participation, willingness and transmission, and finally the parameters. Every source is an official statistical table or our survey; the raw downloads, with their URLs, are kept with the replication code.

Table A14: Calibrated parameters

Parameter	Italy	EU-27	Source
Exit hazard δ_a at ages 40, 60, 80	0.10, 0.12, 0.12	same as Italy	SHIW panel 2016–2020
Sorting α	0.20	0.20	Fagereng, Guiso, and Pistaferri (forthcoming)
Transmission $\rho_o = \rho_w$	0.39	0.39	ρ_o: Black et al. (2017), Table II; Li (2014): 0.07; ρ_w set equal to ρ_o
First year of the simulation	1960	1960	Eurostat demo_pjan, demo_gind
Participation before launch, 18–75	0.142	0.212	SHIW 2022; HFCS 2021 euro-area/Italy ratio
Mean age at household formation	30.2	26.7	Eurostat yth_demo_030, ilc_lvps08
Share ever having a child	0.77	0.82	Istat cohort 1975–78; OECD SF2.5 cohort 1975
Completed fertility per household	1.43	1.59	synthetic cohort
Mean age at birth	32.0	30.5	synthetic cohort
Births in the launch year (thousand)	355	3,973	Istat median; EUROPOP2023
Births after the horizon, N_∞ (thousand)	281	3,542	constant after 2080 / 2100
Mean real return r	0.065	0.065	Section 2
Contribution C (euro per year)	120	120	program design
Opening contribution B (euro)	1,000	1,000	Italian Newborn Bonus
Willingness T1: τ_0^1, τ_1^1	0.28, 0.52	0.28, 0.52	Table 5
Willingness T2: τ_0^2, τ_1^2	0.37, 0.55	0.37, 0.55	Table 5
Willingness T3: τ_0^3, τ_1^3	0.35, 0.53	0.35, 0.53	Table 5
Willingness T4: τ_0^4, τ_1^4	0.35, 0.46	0.35, 0.46	Table 5

Notes: The age-specific profiles are shown in Figure A1 and described below. τ_0^z and τ_1^z denote the probabilities of being willing to sponsor an ECEF account for non-participants and participants under design z; Section 2 and Table 5 refer to the main text.

The model is calibrated separately for Italy and the EU-27. Births follow the official projections (Istat, 2025; Eurostat, 2023b): annual births decline from 355 to 281 thousand in Italy between 2026 and 2080, and from 3.97 to 3.54 million in the EU-27 between 2026 and 2100, and remain constant thereafter. The sorting parameter is $\alpha = 0.2$, the correlation in pre-marriage wealth between spouses estimated by Fagereng et al. (forthcoming), and the transmission parameters are $\rho_o = \rho_w = 0.39$, from the transmission of stock-market participation from adoptive parents to their children estimated by Black et al. (2017) (derivation below).

The household age is the age of the woman, since fertility and the age at birth are tabulated by the mother's age; the participation, entry and exit rates are placed on the same age axis. The population tables count women, one per household; the model's individuals are twice the women at every age, and population figures are in model individuals. The population statistics and the hazards are indexed by age in completed years at the start of the year: a rate tabulated at age c applies to the model age $c+1$. The participation profile, from ages at the interview, is placed directly at the model age.

After the horizon of the projection births are constant at the last projected value, 21 percent below today in Italy and 11 percent in the EU; the population by age converges to the stationary one implied by constant births, constant entrants and survival. Survival s_a is one minus the probability of dying between exact ages a and $a+1$ in the female life table (Istat 2024 for Italy, Eurostat 2023 for the EU-27; Istat, 2025; Eurostat, 2024); the probability of the open age group is carried forward, and $\bar{a} = 100$; the implied life expectancy at birth is 86 years in Italy and 84 in the EU. The entrants $E_{t,a}$ are twice the residual of the projected number of women aged a in year t relative to the survivors of the women aged $a-1$ in $t-1$ and, at age zero, to the births of $t-1$. In Italy they are 214 thousand individuals in 2031, 308 thousand in 2050 and 484 thousand in 2080, of which 286 thousand at ages 65 and over, where they reflect the gains in survival built into the projection rather than migration; in the EU-27, 2.6, 6.0 and 13.6 million in 2031, 2050 and 2100, almost all at 65 and over in 2100. With the entrants the stationary population is 39 percent below today's in Italy and 14 percent in the EU; without them it would be 60 percent below today's in Italy and 36 percent in the EU (Figure A2). A cohort of N_t births is counted as $N_t/2$ women, the households it forms.

The logistic distribution of the age at leaving home has location $m = 29.8$ and scale $\varsigma = 3.0$ in Italy and $m = 26.1$, $\varsigma = 3.7$ in the EU, fitted to the EU-SILC shares at 18–24, 25–29 and 30–34 and to Eurostat's mean age at leaving; no one leaves before 16, and everyone has left by 40 (Figure A3). $\lambda(a)$ is the implied conditional probability; we write μ_a for the same hazard in the calibration of fertility.

The age pattern of each birth order comes from the latest period rates by age of the mother and birth order (Istat 2024; Eurostat 2021 for the EU-27; orders one, two, three or more; Istat, 2025; Eurostat, 2024). The level comes from completed cohorts: Istat's cohort table for the women born in 1975–78 in Italy; for the EU-27, which has no cohort table by order, childlessness and completed fertility of the 1975 cohort read from the charts of the OECD Family Database (OECD, 2024) for nineteen and sixteen member states, averaged with the number of women aged 45–49 in 2024 as weights (Table A17). A synthetic cohort forms households at the rate μ_a; the period rate of order k at age a, per woman, is divided by the share of women of that age who are formed and have $k-1$ children, giving a hazard per household, and each order's hazard is multiplied by a constant so that the synthetic cohort reproduces the cohort targets (three constants in Italy, 1.32, 1.20 and 0.87; two in the EU, 1.16 for first births and 0.95 for later ones). Period rates understate first and second births because of postponement. The synthetic cohort has 23 percent of households without

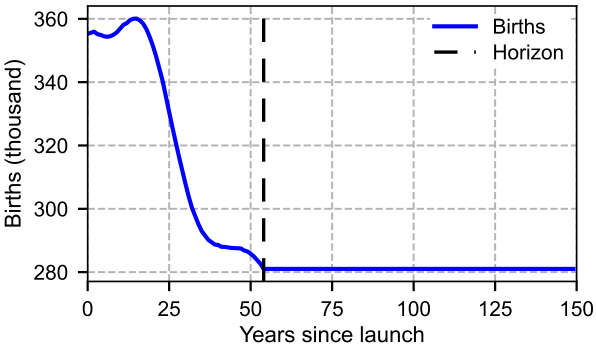
children, 26 with one, 36 with two and 15 with three or more in Italy (18, 30, 25 and 26 in the EU); the mean age at birth is 32.0 (30.5) and at the first birth 31.4 (29.2). Figure A4 compares the births by age and order with the period rates. In every year the three hazards are multiplied by ϕ_t so that births equal N_t: 0.80 in Italy and 0.95 in the EU in the launch year, since applied to today's age structure the cohort-level hazards produce more births than the projection, which embodies today's lower period fertility; ϕ_t moves towards one as the projected fertility recovers.

Our survey asks whether there are children aged 0–24 months or 2–5 years in the respondent's household (all 5,007 respondents of wave 11) and, from age 51, whether the respondent has a grandchild aged 0–5 (2,526 respondents). Their model counterparts, from 200,000 households simulated from the calibrated primitives (Figure A5), peak at the same ages as the survey, about 35 and 66–68, but at higher levels: 46 percent of households with a child aged 0–5 against 30 percent in the survey, 40 with a grandchild against 30. For children the gap is between the survey and official statistics: Istat's fertility rates for 2019–2024 imply 0.52 children aged 0–5 per woman aged 35 (the model gives 0.61 at the cohort level of fertility and 0.49 with the launch-year factor ϕ_t), about 40 percent of households with at least one. We read the gap for grandchildren in the same way; no parameter is adjusted to the survey on this margin.

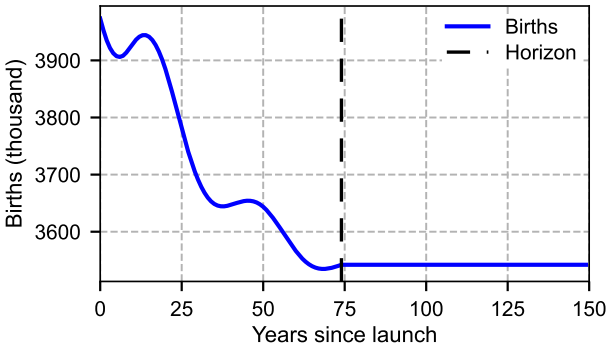
The simulation starts in 1960 with twice the Italian female population by single year of age (Eurostat, demo_pjan, Eurostat, 2024; the open age group of the early years, 80 and over before 1982 and 90 and over before 1992, is distributed with the age shape of 2025), 51 million individuals, and follows the historical births (Eurostat, demo_gind: 910 thousand in 1960, 370 thousand in 2024). The entrants of every year to 2025 are the residual of the population by age relative to the survivors of the previous year and the births of the previous year: net migration and the higher mortality of the past, −142 thousand individuals a year on average. For the EU-27, single ages are available only from 2001; from 1960 to 2000 the population is carried forward from one with the age structure of 2001 and the size of 1960 (364 million individuals), with the historical births and no entrants, and the residual of 2001 reconciles it with the data. The simulated population by age at launch is compared with the projection in Appendix E.4.

Stock-market participation is a property of the household, whatever member holds the assets. Bonds and bond funds are not stocks, and money-market funds are excluded; the SHIW does not separate bond from equity funds, so a household whose only funds are bond funds counts as a participant (all funds included: 15.5 percent instead of 14.2), and managed portfolios are assumed to contain equity. The SHIW 2022 (Banca d'Italia, 2022), Italy's contribution to the Eurosystem's HFCS, has 9,641 households, weighted; a household participates if it holds quoted shares, funds other than money-market funds, or a managed portfolio; 13.0 percent of all households participate, and 14.2 percent of those aged 18 to 75. Our ISCE survey yields 21.8 percent among respondents aged 18 to 75 (Table 3); the difference reflects the samples rather than the definition: the ISCE survey is an online panel that is richer and more educated than the population, while SHIW under-reports financial

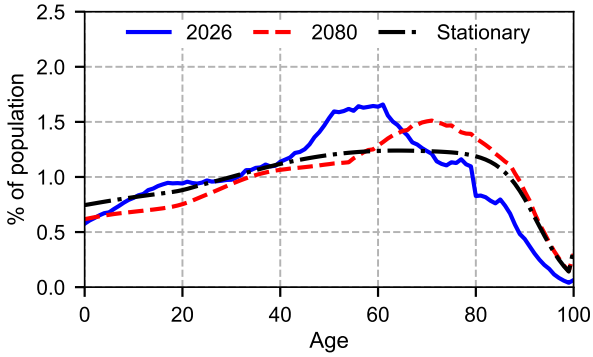
Figure A1: Calibration: demography and stock-market participation



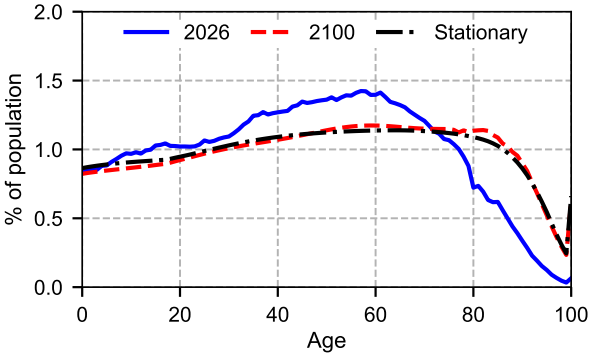
(a) Italy, births



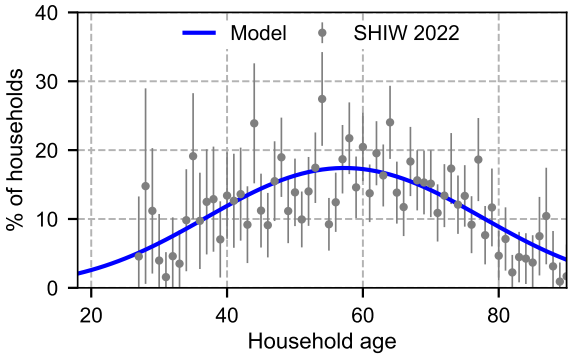
(b) EU-27, births



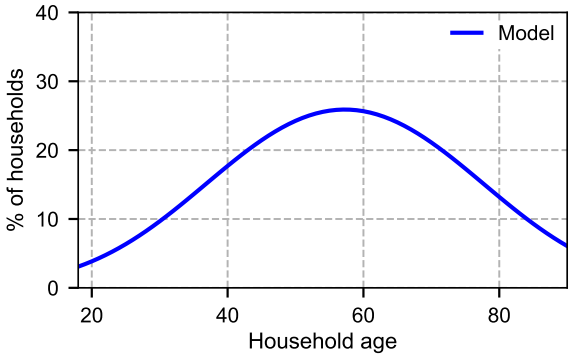
(c) Italy, population by age



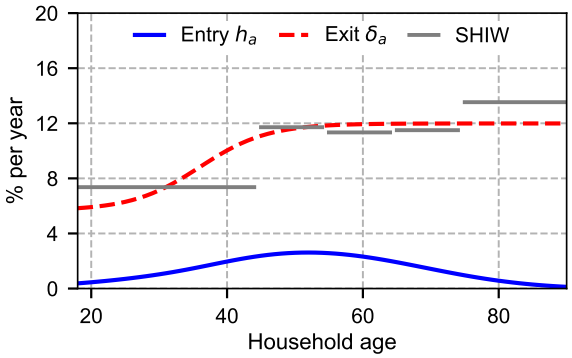
(d) EU-27, population by age



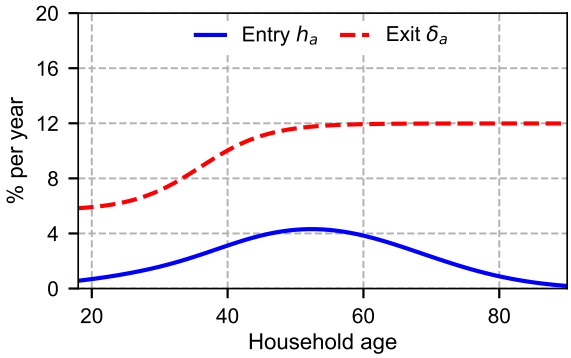
(e) Italy, participation profile



(f) EU-27, participation profile



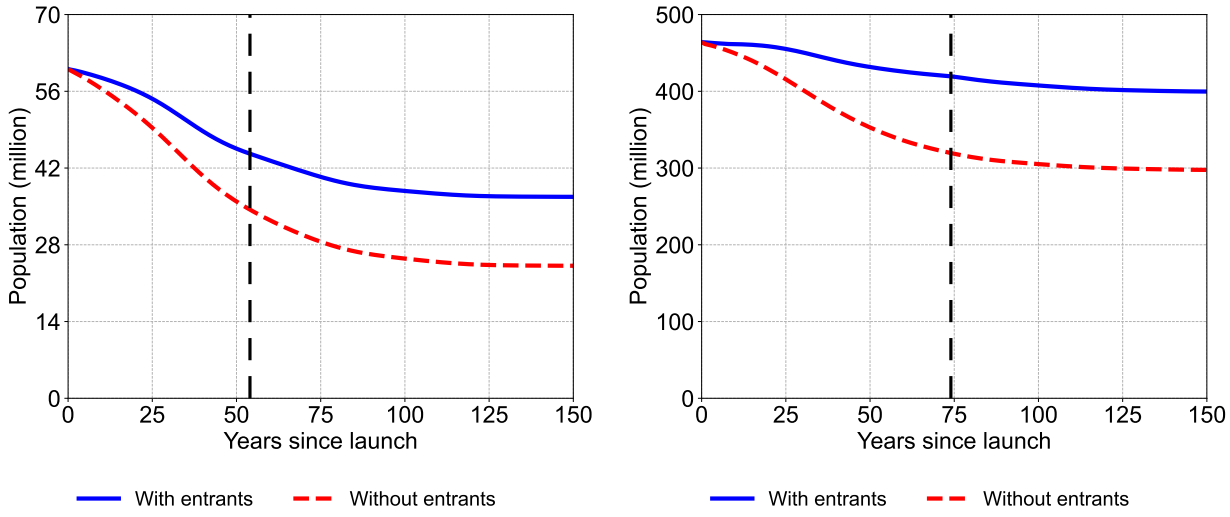
(g) Italy, entry and exit hazards



(h) EU-27, entry and exit hazards

Notes: (a)–(b) births, official projections, constant after the horizon (dashed); (c)–(d) population by age at launch, at the horizon and in the stationary state; (e)–(f) pre-program profile p_a and SHIW 2022 shares with 95 percent intervals (EU-27: the Italian profile rescaled); (g)–(h) exit δ_a fitted to the SHIW panel 2016–2020 (grey), entry h_a implied by p_a.

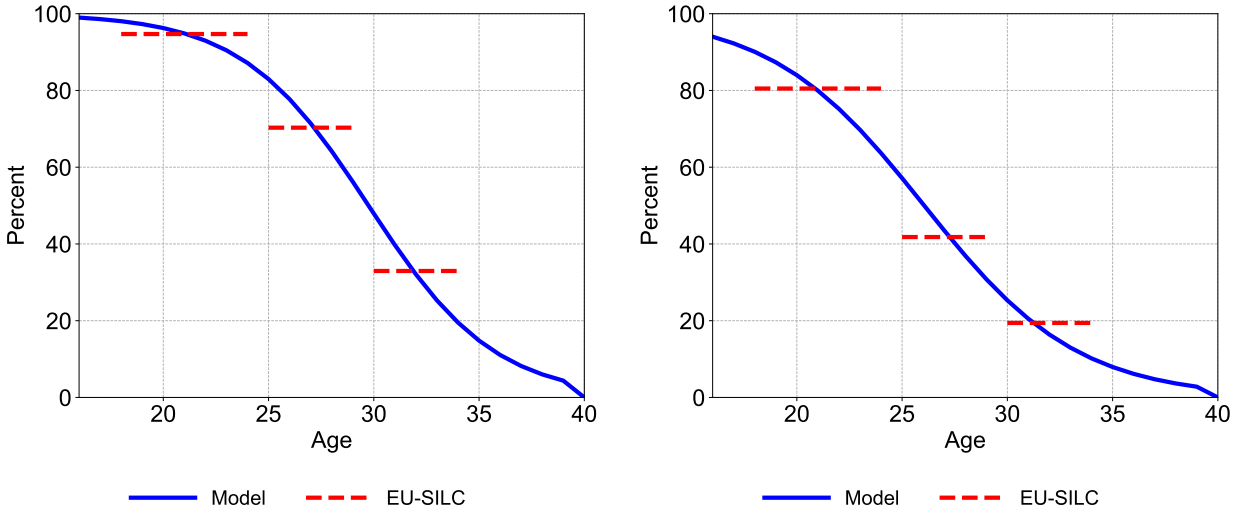
Figure A2: Population with and without entrants



(a) Italy **(b) EU-27**

Notes: Population of the model, million individuals, by years since launch: with the entrants $E_{t,a}$ of the calibration, which reproduces the official projection to its horizon by construction and holds the entrants constant afterwards (the thick dashed vertical line marks the projection horizon, 2080 for Italy and 2100 for the EU-27); and with births and survival only. Produced by calibration_v5.py.

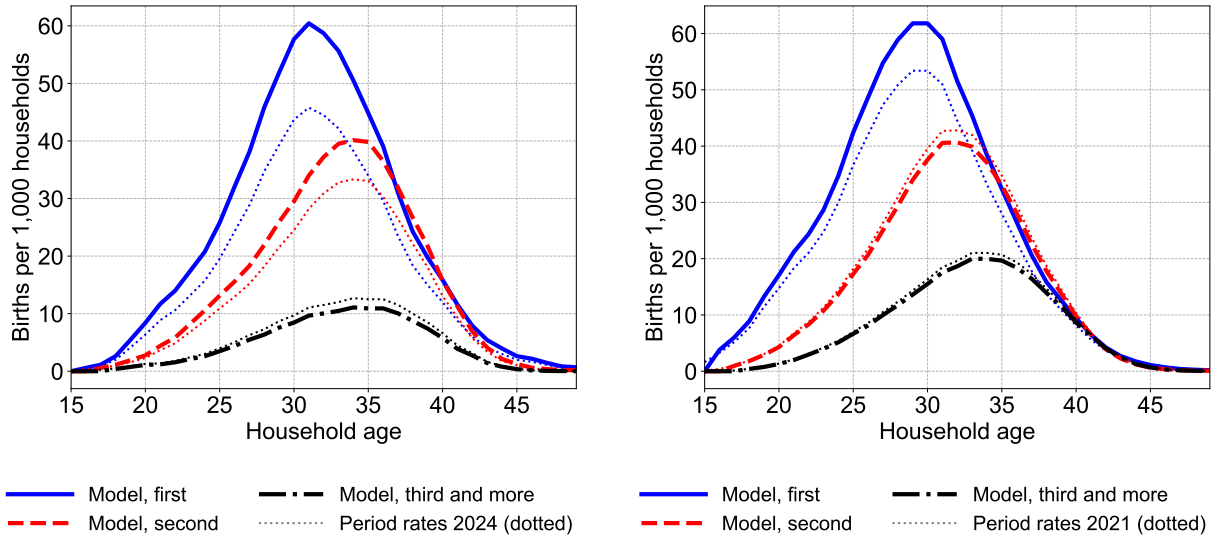
Figure A3: Household formation



(a) Italy **(b) EU-27**

Notes: Model: share of individuals who have not yet formed a household, by age, under the fitted logistic distribution. EU-SILC: share of young adults living with their parents, from the published shares by age group (ilc_lvps08; Eurostat, 2023a) at 18–24 and 25–29, and at 30–34 as the residual of the published 25–34 share once the 25–29 group is taken out; each share is drawn as a horizontal segment over its age group. Produced by calibration_v5.py.

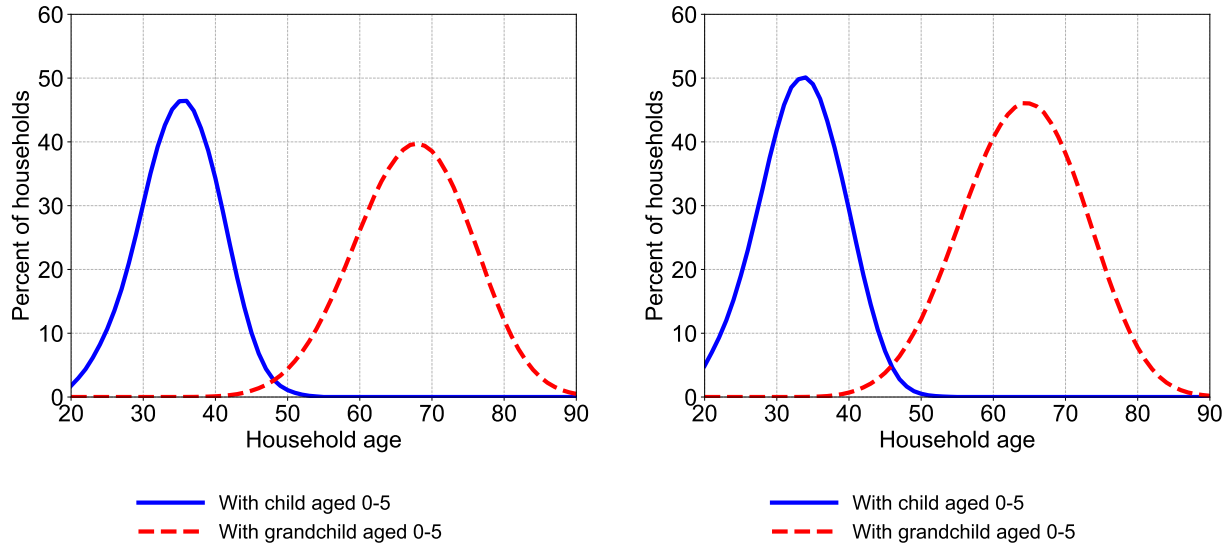
Figure A4: Fertility by age and birth order



(a) Italy **(b) EU-27**

Notes: Births per 1,000 households by age and order generated by the calibrated hazards in the synthetic cohort (solid, dashed, dash-dotted) against the period rates per 1,000 women (dotted): Istat 2024 for Italy, Eurostat 2021 for the EU-27. The gap is the cohort correction. Produced by calibration_v5.py.

Figure A5: Children and grandchildren aged 0–5, by household age



(a) Italy **(b) EU-27**

Notes: Share of households of each age with at least one child aged 0–5 (blue) and with at least one grandchild aged 0–5 (red) in a simulation of 200,000 households from the calibrated primitives. The survey values discussed in the text are not plotted. Produced by calibration_v5.py.

assets. Placing households by the age of the head gives the same level and the same hump, shifted by the four-year age gap between partners. The ECB's Consumer Expectations Survey, an online panel like ours, gives about 33 percent of consumers holding equity directly or through funds (Christelis et al., 2026); Guiso et al. (2002, Table 4) report 15 percent for Italy in 1998 with our definition.

The SHIW provides the three participation objects of the model in different ways: the age profile p_a comes from the 2022 cross-section, the exit hazards δ_a from the panel of households interviewed in 2016 and 2020, and the entry hazards h_a are not estimated but set so that, given δ_a, the model reproduces p_a. The Italian profile p_a is the logistic function of a quadratic in age, fitted by maximum likelihood to the SHIW shares by single year of age from 20 to 90, and scaled so that its average over ages 18–75 is 14.2 percent; it rises from 3 percent at age 20 to a peak of 17 percent around age 57 and falls to 4 percent at age 90, and the same function is used at every age. The HFCS reports by age of the reference person only the share of households holding shares directly, a different object; the European profile is therefore the Italian one times the euro-area to Italian ratio of the HFCS 2021 (European Central Bank, 2023) participation in shares and mutual funds, 23.8 over 16.0, which gives 21.2 percent at ages 18 to 75, and peaks at 26 percent around 57. The exit hazard comes from the households of the SHIW panel interviewed in 2016 and 2020 with the same definition in both years: 2,983 households, 305 participants in 2016. The share of participants no longer participating four years later, converted to an annual hazard, is 7 percent below 45, 12 percent between 45 and 74 and 13 percent at 75 and over; a logistic function of age fitted to these five groups gives δ_a, from 6 percent at 20 to 10 at 40 and 12 from 50 on.[19] The same δ_a is imposed in Europe. The entry hazards follow from the profile and the exit hazards by the exact inversion $h_a = [p_{a+1} - p_a + p_a\delta_a]/(1 - p_a)$, so that the model reproduces p_a at every age; in Italy they are about 2 percent a year between ages 30 and 60, and at old ages the profile falls because participants exit and few enter. In Europe the entry hazards have the same shape at a higher level.

The SHIW panel also gives entry rates directly, which we use only as a check: 2 to 3 percent a year below 75 and 1 percent above (Table A15). The model's entry hazards are close between 45 and 64 and lower at the two ends, where the panel has few observations; read the other way, the panel entry rates and the profile imply exit hazards close to the panel exits between 45 and 64.[20]

τ_μ^z is the T1 baseline of Table 5 plus the estimated treatment effect of design z. The sensitivity value $\alpha = 0.4$ is the spousal correlation in parental wealth of Charles et al. (2013).

[19] Two-year transitions (2020 to 2022) give 21 percent a year, inflated by spurious changes of status between interviews, as Guiso and Jappelli (2000) note for the 1989–95 panel, whose six-year transitions give 8 percent a year for risky assets. We use the longest interval available.

[20] The direction of the calibration does not matter for the results. Taking the entry hazards from the panel, by age group, and backing out the exit hazards from the profile (about 25 percent a year at 30 and 13 to 15 percent above 45 in Italy), the T1 run of the ECEF alone reproduces the baseline within 0.3 percentage points of participation and of holdings and within 0.02 of the enrollment rate at every horizon, in both areas (200,000 households; simulate_v5_hazards_check.py).

Table A15: Entry and exit hazards: SHIW panel and model

	Entry (% per year)		Exit (% per year)			
Age group	SHIW panel	Model h_a	SHIW panel	Model δ_a	Backed out	Households
18–44	2.3	1.2	7.4	7.8	33.2	389
45–54	3.0	2.5	11.7	11.5	13.9	640
55–64	2.6	2.3	11.3	11.9	13.2	785
65–74	2.6	1.5	11.5	12.0	19.2	680
75–90	1.3	0.5	13.5	12.0	24.8	489

Notes: SHIW panel 2016–2020, annualised transitions by household age group; Italy. Model h_a and δ_a: averages over the ages of the group. Backed out: the exit hazard implied by the profile and the panel entry rate, $[h(1-p)-(p_{a+1}-p_a)]/p_a$. Households: panel households in the group. Produced by calibration_v5.py.

The baseline value $\rho_o = 0.39$ comes from Black et al. (2017, Table II): their estimate of the effect of adoptive parents' stock-market participation on that of their children is 0.19, and ρ_o is that estimate divided by $1-\tau_1$, since in the model a household head who grew up with an ECEF account is a stock-market participant and, absent transmission, is willing to sponsor an account with probability τ_1. In the same table the participation of the biological parents of Swedish adoptees raises the child's probability of participating by 0.105 and that of the parents of own-birth children by 0.26, which gives $\rho_o = 0.53$; the adoptive estimate isolates what is passed on within the family, the object of ρ_o. Fagereng et al. (2021), on Korean-born adoptees in Norway observed twenty years after their parents, the timing of the model, give 0.11 and $\rho_o = 0.23$. Li (2014) finds on the PSID that the entry of the parents into the stock market raises the child's probability of entering within five years by about 5 percentage points, from a base of 16, so $\rho_o = 0.05/(1-\tau_0) = 0.07$ for non-participants; Charles and Hurst (2003) find a raw association of the same order that disappears once income is controlled for. No study measures ρ_w, the link between sponsoring one's children and sponsoring one's grandchildren; we set $\rho_w = \rho_o$ in both areas. GDP is at current prices in 2025 (Eurostat, Eurostat, 2024: €2,258 billion in Italy, €18,856 billion in the EU-27); the capitalization is that of Borsa Italiana at the end of 2025 and the Euro Stoxx 600 free float (STOXX, March 2025).

Table A16: Calibration targets and model values

		Italy		EU-27	
Target	Source	Data	Model	Data	Model
Births in the launch year (thousand)	Istat median; EUROPOP2023	355	355	3,973	3,973
Living with parents at 18–24 (%)	EU-SILC ilc_lvps08	95	94	80	78
Living with parents at 25–29 (%)	EU-SILC ilc_lvps08	70	70	42	44
Living with parents at 30–34 (%)	EU-SILC ilc_lvps08	33	33	19	17
Mean age at leaving home	Eurostat yth_demo_030	30.0	30.2	26.4	26.7
Households ever having a child	Istat cohort 1975–78; OECD SF2.5	0.77	0.77	0.82	0.82
Second births per household with one child	Istat cohort 1975–78	0.66	0.66	–	0.63
Third or later births per household with two	Istat cohort 1975–78	0.29	0.29	–	0.51
Completed fertility (children per household)	Istat cohort 1975–78; OECD SF2.5	1.43	1.43	1.59	1.59
Stock-market participation, ages 18–75 (%)	SHIW 2022; HFCS 2021	14.2	14.2	21.2	21.2
Stock-market participation at 75–84 (%)	SHIW 2022	8.3	9.3	–	–
Exit from the stock market, 45–74 (% per year)	SHIW panel 2016–2020	11.5	11.8	–	11.8
Exit from the stock market, 75+ (% per year)	SHIW panel 2016–2020	13.5	12.0	–	12.0
Population at the horizon, 2080/2100 (million)	Istat median; EUROPOP2023	44.6	44.6	419.5	419.5
Children aged 0–5 per household aged 35 (untargeted)	Istat rates 2019–2024	0.52	0.49	–	–
Population in the stationary state (million)	model	–	36.7	–	399.6

Notes: Targets are matched by construction where the model has a free parameter for them (births in the launch year through ϕ_t; the cohort fertility moments through the scaling constants of the fertility hazards; the participation level through the scale of the profile) and by least squares for household formation (two parameters, four targets). The last row is not targeted: the expected number of children aged 0–5 of a household of the peak age, from Istat's period rates of the last six years, against the model.

Table A17: Cohort 1975: childlessness and completed fertility in the EU-27

Country	Childless (%)	Completed fertility	Women 45–49 (thousand)
DE	20.5	–	2,446
IT	22.5	1.44	2,201
FR	13.5	–	2,113
ES	23.8	1.40	2,034
PL	19.0	1.65	1,403
RO	–	–	740
NL	17.0	1.71	530
CZ	12.7	1.80	466
PT	8.8	1.62	426
HU	17.1	1.80	420
EL	–	–	402
BE	–	–	371
SE	12.8	1.94	316
AT	19.7	1.65	293
BG	5.7	1.65	248
SK	11.5	–	217
IE	17.2	2.08	199
DK	13.4	1.94	189
FI	19.8	1.91	169
HR	–	–	131
LT	14.3	1.68	96
SI	14.6	1.66	76
LV	–	–	64
EE	13.0	1.85	46
CY	–	–	35
LU	–	–	24
MT	–	–	18
EU-27, weighted	18.4	1.59	15,673

Notes: Values read off the charts of the OECD Family Database, indicator SF2.5 (September 2024; source Human Fertility Database), to the nearest half point; – not shown. Italy from Istat's cohort table (cohort 1978 for childlessness). Germany refers to the cohorts 1975–77, France to a projection, the Slovak Republic to the 1970 cohort. Weights: women aged 45–49 on 1 January 2024 (Eurostat). The weighted averages cover 89 percent of the women for childlessness and 58 percent for completed fertility.

E.4 Results by design

We first check the simulation against the model. Then we report the results under the four designs, the flows into and out of participation, participation by household age, and the transition and the steady state.

The simulation starts in 1960 with 1 million households, 14 Italian households per simulated one at launch (125 in Europe); the sampling standard error of a participation share is 0.04 percentage points in Italy and 0.04 in Europe. Five checks run at every execution and all pass. Births equal N_t in every year up to the rounding of one simulated household. The simulated population by age at launch reproduces the projection within 8 percent in every age group in Italy, within 2 percent between 16 and 75, and within 1 percent in total (Europe: 8, 2 and 1 percent); the residual reflects the approximation of the historical entrants. With no willingness, the participation profile after sixty years equals p_a at every age from 25 to 85 within sampling error (largest deviation 2.3 standard errors in Italy, 2.7 in Europe). With $\rho_o = \rho_w = 0$, $\alpha = 0$ and draws on m, the enrollment rate at launch equals its expectation from the states of the sponsors. Participation after 20 and 60 years changes by at most 0.02 percentage points with a different seed and 0.04 with half the population in Italy (0.06 and 0.07 in Europe). Before the program Π_t is 12.9 percent among all Italian households and 14.2 percent at ages 18 to 75, the SHIW level (18.6 and 20.1 in Europe).

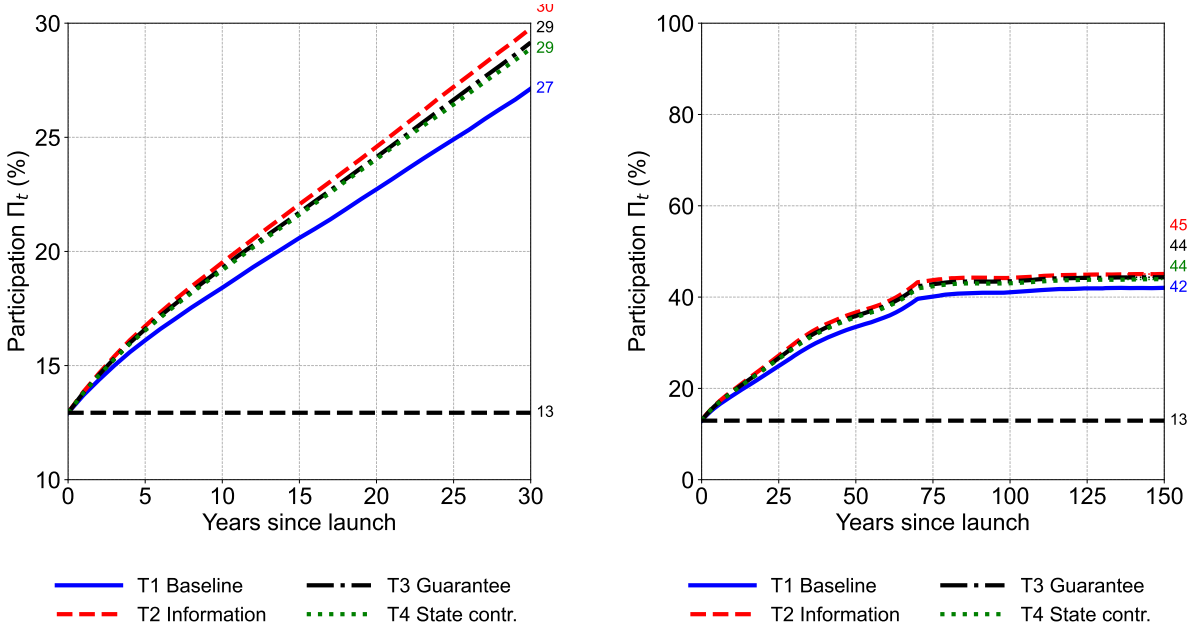
Table A18 reports participation, holdings and enrollment under the four designs every ten years over the first seventy years and in the steady state, and Figures A6 and A7 plot participation and holdings; the T1 values after 10 and 30 years and in the steady state are those of Table 12. Table A19 completes Table 12 with the years 20, 40 and 60 and with participation among households aged 18 to 75: after twenty years, 10.4 percent of Italian households participate only because a child living at home owns an account, and a further 5.7 percent contribute to an account without being participants.

Table A20 counts the households that became participants and those that ceased to participate over the first twenty years, by channel, in units of the households of year 20; entry into and exit from the stock market on one's own refer to m. In Italy 11 percent of households became participants because a child living at home received an account, against 26 percent that entered the stock market on their own. On the exit side, 28 percent of households left the stock market under δ_a and only 0.3 percent lost the account of a child, who left home or died, because the first enrolled children reach the ages of leaving home only after sixteen years; the withdrawal of an own account appears only from year 70. The exits are slightly fewer under the designs with more enrolled children, since a household that leaves the stock market while a child at home owns an account remains a participant.

After twenty years participation in Italy is about 41 percent among households aged 30 to 50 against 12 before the program, and 16 percent between 60 and 75 against 15 (Figure A8). After forty years the households below 40 are those formed by the enrolled children: 57 percent of them participate.

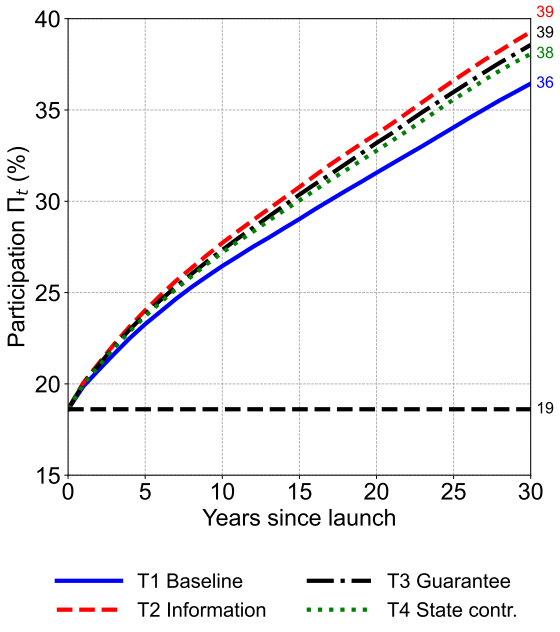
Counting only the equity and the accounts of the heads, participation after twenty years

Figure A6: Stock-market participation by design

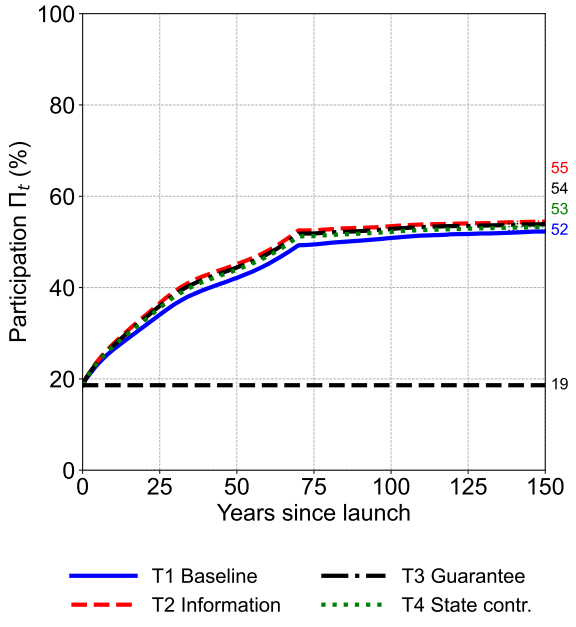


(a) Italy, first thirty years

(b) Italy, full transition



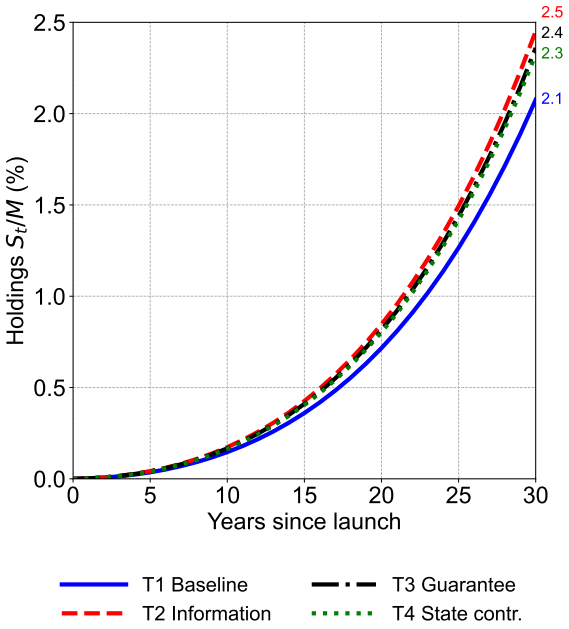
(c) Europe, first thirty years



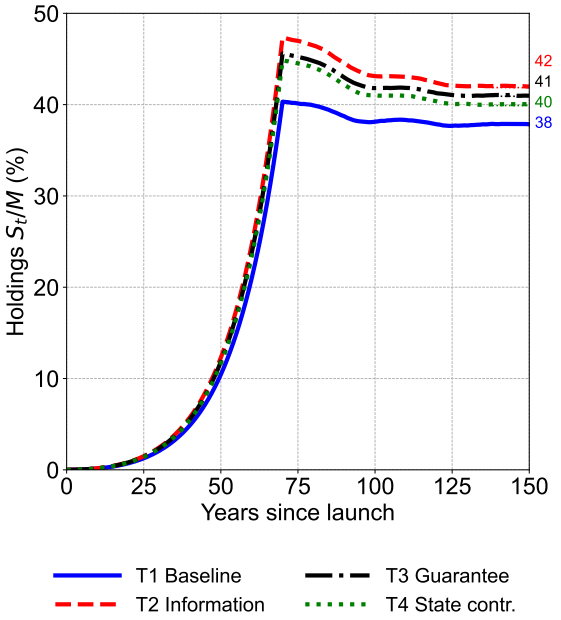
(d) Europe, full transition

Notes: Π_t, percent of all households, by design; ECEF alone. Dashed horizontal line: the pre-program rate. Panels (b) and (d): the dotted segments at the right mark the steady state, whose value is printed at the edge; panels (a) and (c): the value after thirty years is printed at the edge. Produced by simulate_v5.py.

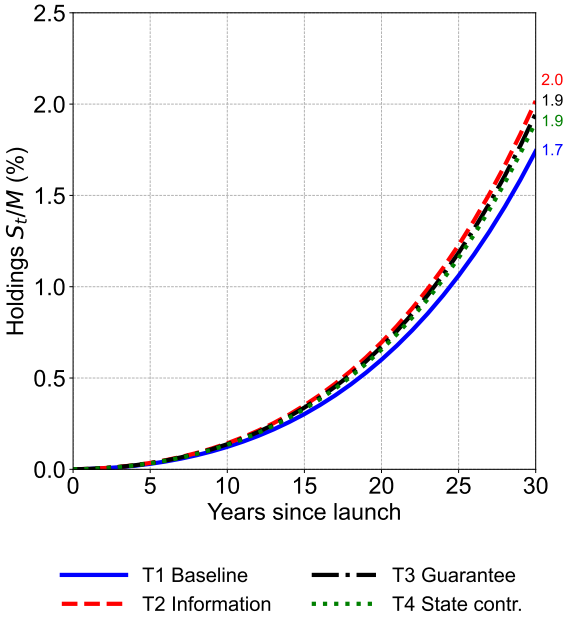
Figure A7: Fund holdings by design



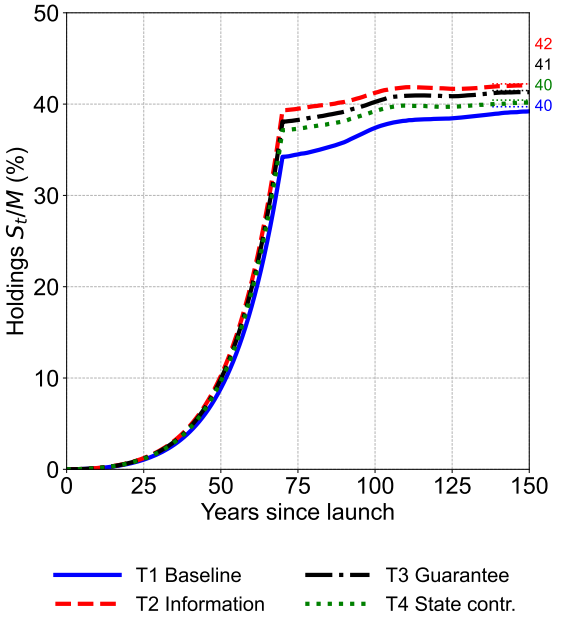
(a) Italy, first thirty years



(b) Italy, full transition



(c) Europe, first thirty years



(d) Europe, full transition

Notes: S_t/M in percent of the capitalization M of Borsa Italiana (Italian program) and of the Euro Stoxx 600 (European program), both held fixed; ECEF alone. Produced by simulate_v5.py.

Table A18: Stock-market participation, holdings and enrollment by design

	Italy				Europe			
	T1	T2	T3	T4	T1	T2	T3	T4
Participation rate Π_t *(%)*								
Year 10	18.4	19.5	19.3	19.2	26.5	27.7	27.3	27.2
Year 20	22.7	24.6	24.1	24.0	31.6	33.7	33.2	32.8
Year 30	27.1	29.8	29.2	28.9	36.4	39.3	38.6	38.1
Year 40	30.9	34.0	33.2	32.9	39.7	42.7	42.0	41.5
Year 50	33.5	36.6	35.9	35.6	42.1	45.1	44.4	43.9
Year 60	35.7	38.9	38.2	37.9	45.1	48.0	47.4	46.8
Year 70	39.6	43.2	42.3	41.9	49.3	52.5	51.8	51.2
Steady state, Π^*	42.0	45.0	44.4	43.9	52.5	54.5	54.0	53.3
Steady state, ages 18–75	54.8	58.9	58.0	57.3	68.5	71.4	70.6	69.8
Steady state, by holdings of the heads only	33.6	35.9	35.4	34.8	46.6	48.5	47.9	47.1
Steady state, sponsoring only	6.6	7.4	7.1	6.7	7.0	7.6	7.4	6.9
Holdings S_t/M *(%)*								
Year 10	0.15	0.17	0.17	0.16	0.12	0.14	0.14	0.13
Year 20	0.7	0.8	0.8	0.8	0.6	0.7	0.7	0.7
Year 30	2.1	2.5	2.4	2.3	1.7	2.0	1.9	1.9
Year 40	4.9	5.8	5.6	5.5	4.1	4.8	4.6	4.5
Year 50	10.4	12.3	11.8	11.6	8.9	10.2	9.9	9.7
Year 60	21.0	24.6	23.7	23.4	17.9	20.6	19.9	19.4
Year 70	40.3	47.4	45.6	44.8	34.2	39.3	38.1	37.1
Steady state, S^*/M	37.9	41.9	40.9	39.9	39.7	42.2	41.5	40.4
Enrollment rate (%)								
At launch, θ_{t_0}	55.2	65.1	62.8	61.7	58.6	67.9	65.6	63.9
Steady state, θ^*	64.5	71.4	69.6	67.9	76.1	80.9	79.6	77.5

Notes: ECEF alone. T1: baseline description; T2: personalized information on historical returns; T3: guarantee on contributions; T4: government contribution. Π_t in percent of all households; steady state: average of the last twenty simulated years, for all households, for households aged 18 to 75, and counting as participants only the households whose heads hold equity outside the fund or an account; sponsoring only: households that contribute to an account without being participants. S_t/M in percent of the capitalization M, held fixed. θ_{t_0}: enrollment rate of the newborns in the launch year, in percent; θ^*: in the steady state. Produced by simulate_v5.py.

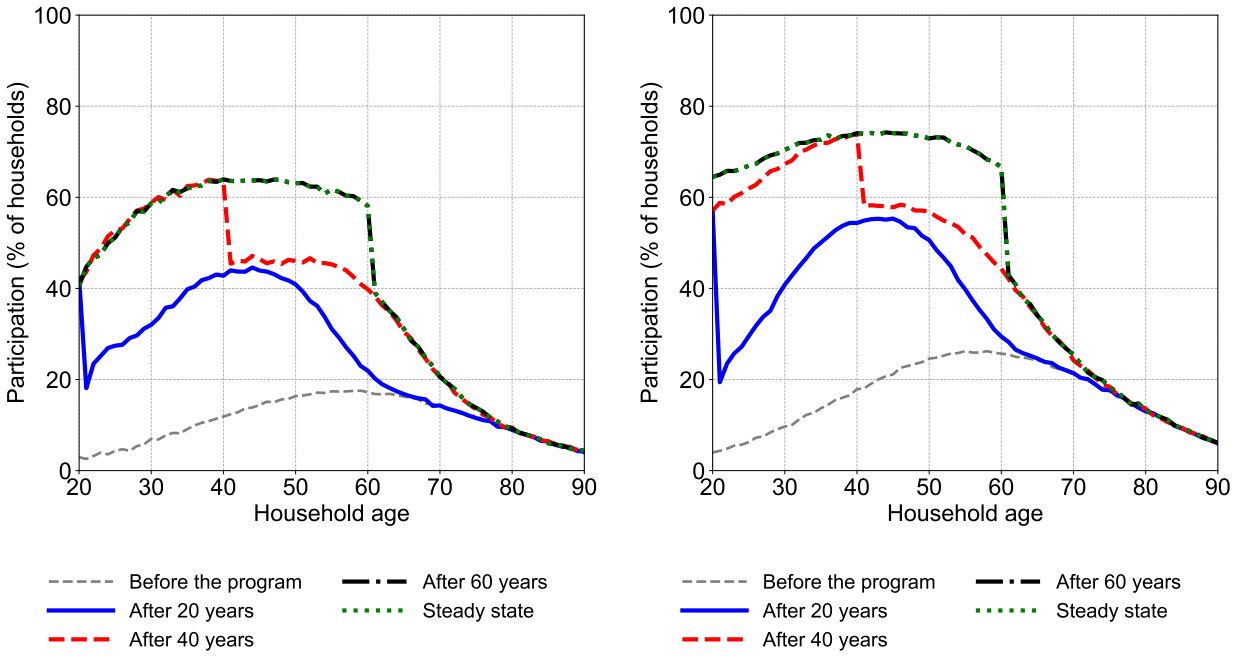
is 12.3 percent in Italy (the first two groups of Table A19), below the pre-program level, because the population ages and the exogenous exits continue while the enrolled children are still at home; in the steady state it is 34 percent in Italy and 47 in Europe. In the steady state 53 percent of the Italian households aged 22 to 30 participate: the enrollment rate of their cohorts times the share of households that are not entrants, since entrants arrive without an account. Participation falls after 70, when the accounts are withdrawn and the exogenous hazards prevail. Per year, in the steady state, 0.6 percent of households become participants by bringing an account into a new household, 0.3 percent because a child at

Table A19: Stock-market participation and holdings after 20, 40 and 60 years, design T1

	Italy			Europe		
	Year 20	Year 40	Year 60	Year 20	Year 40	Year 60
Participation rate, all households (%)	22.7	30.9	35.7	31.6	39.7	45.1
Ages 18–75 (%)	28.0	40.4	47.6	37.3	49.8	57.7
Of which, households with:						
(i) Equity outside the ECEF	12.2	12.0	11.8	17.9	17.3	17.1
(ii) A head owns an account	0.1	4.7	14.4	0.3	8.2	19.2
(iii) A child at home owns an account	10.4	14.2	9.5	13.3	14.3	8.8
Enrollment rate of newborns (%)	56.4	64.2	63.4	59.5	70.0	72.2
Value of ECEF holdings as a share of today's stock-market capitalization (%)	0.7	4.9	21.0	0.6	4.1	17.9
Sponsoring only (%)	5.7	5.6	6.5	6.7	7.1	7.6

Notes: Rows as in Table 12, which reports the years 10 and 30 and the steady state; ages 18–75: participation among the households of the age range of the survey.

Figure A8: Stock-market participation by household age, design T1



(a) Italy **(b) Europe**

Notes: Share of participant households by household age before the program, 20, 40 and 60 years after launch, and in the steady state. ECEF alone. Produced by simulate_v5.py.

home receives an account and 0.9 percent on their own; 0.8 percent leave the stock market, 0.3 percent lose the account of a child who leaves home or dies, 0.4 percent withdraw their account at 70, and 0.2 percent die.

Table A20: Gross flows into and out of stock-market participation, by channel

	First twenty years, cumulative				Steady state
	T1	T2	T3	T4	T1, per year
a) Italy					
Became participants					
Entry into the stock market (m)	26.1	25.7	25.8	25.8	0.7
A child at home receives an account	11.2	13.3	12.8	12.7	0.3
New household, heads participating ($m = 1$)	2.5	2.5	2.5	2.5	0.2
New household whose heads own an account	0.1	0.1	0.1	0.1	0.6
Ceased to participate					
Exit from the stock market (m)	27.6	27.4	27.5	27.5	0.8
A child with an account leaves home or dies	0.3	0.4	0.4	0.4	0.3
Withdrawal of the heads' account at 70	0.0	0.0	0.0	0.0	0.4
Death of a participant household	2.4	2.5	2.5	2.4	0.2
Change in participant households	9.5	11.3	10.9	10.8	-0.0
b) Europe					
Became participants					
Entry into the stock market (m)	37.0	36.4	36.6	36.6	0.7
A child at home receives an account	15.0	17.4	16.8	16.5	0.2
New household, heads participating ($m = 1$)	3.2	3.2	3.2	3.2	0.3
New household whose heads own an account	0.3	0.4	0.3	0.3	0.8
Ceased to participate					
Exit from the stock market (m)	37.9	37.6	37.6	37.8	0.9
A child with an account leaves home or dies	0.6	0.7	0.6	0.6	0.2
Withdrawal of the heads' account at 70	0.0	0.0	0.0	0.0	0.5
Death of a participant household	4.0	4.1	4.1	4.1	0.4
Change in participant households	13.0	15.1	14.6	14.2	-0.0

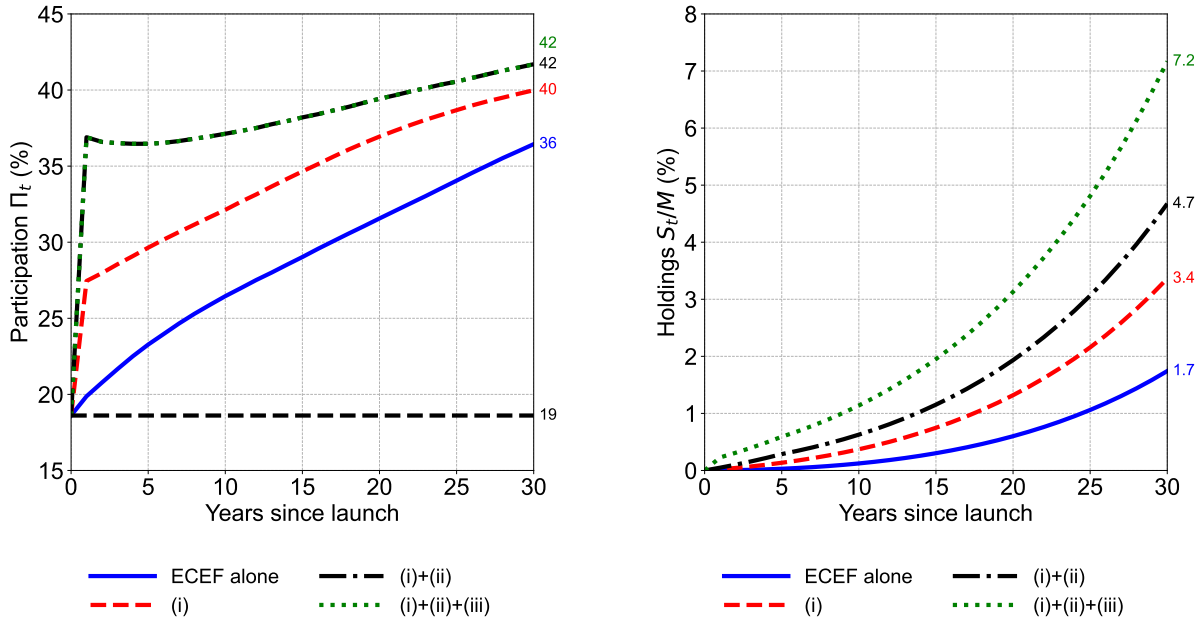
Notes: Households that became participants (μ from 0 to 1) and that ceased to participate (μ from 1 to 0), in percent of the households: cumulated over the first twenty years, relative to the households of year 20, by design; per year in the steady state under T1 (the designs differ by at most 0.1 point). A household participates if it holds equity: $m = 1$, an account of a head, or an account of a child living at home (under policy (ii), also an account held for the next child); sponsoring alone does not count. Entries: attributed to the first channel that applies, in the order listed; a new household likewise (heads already participating, an own account). Exits: under δ_a while holding no account; the loss of the last child account at home (the child left home or died); the withdrawal of the heads' account at 70. Entries less exits less deaths of participant households equal the change in participants (last row). ECEF alone. Produced by simulate_v5.py.

E.5 Accompanying policies

Table A21 reports the four variants of Section 8 under design T1, and the last two under design T2, after 1, 10, 20, 40 and 60 years and in the steady state, with the enrollment they generate; Figure A9 plots their first thirty years in Europe and Figure A10 the full transition in both areas. The gain from policy (i) lasts while the launch children are minors; participation after forty years is 34 percent instead of 31. On impact the opening contribution

is paid into the accounts of the launch children, so holdings jump by B times their number. With the three policies the program would hold a large part of the equity of the Italian market; the fixed-capitalization assumption is strained at that point, and these numbers measure demand, not an equilibrium. Under T2, policy (i) alone raises participation one year after launch by 7.1 points in Italy instead of 5.9; in Europe by 8.9 instead of 7.6, and the two launch policies by 20 points instead of 17. 53 percent of the Italian children aged 1 to 10 at launch are enrolled under T1 and 63 percent under T2, while the steady-state enrollment rate of newborns depends on the design and not on the policies.

Figure A9: Stock-market participation and fund holdings under the accompanying policies, Europe, design T1



(a) Participation rate Π_t **(b) Holdings S_t/M**

Notes: The European counterpart of Figure 4: first thirty years after launch, design T1; lines as there; M is the capitalization of the Euro Stoxx 600.

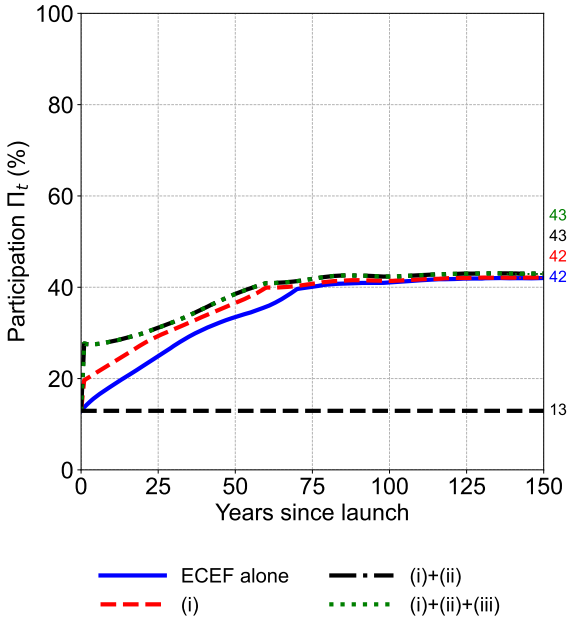
Table A22 reports the government contribution at the opening of each account, B, that would bring holdings to 1, 2, 5, 10 or 20 percent of today's capitalization after ten years, given the enrollment generated by the model under each policy, what it would cost public finances, and, in its place, the monthly contribution that reaches the same targets. Holdings are linear in the opening contribution: each €1,000 per account raises holdings by 0.6 percent of Italian market capitalization after ten years and by 0.5 percent of European market capitalization. With the two launch policies, the 1 percent target requires about €250 per account in Italy. The 5 percent target, about €6,500 per account in Italy, is paid into 2.29 million accounts in the first year, including the launch children and the newborns, and into about 0.2 million accounts per year thereafter; cumulated over ten years, it costs 2.5 percent of market capitalization in Italy (1.2 percent of GDP, about half of the holdings it produces) and 2.7 percent in Europe, where it is paid into 24.7 million accounts in the first year and

Table A21: Accompanying policies

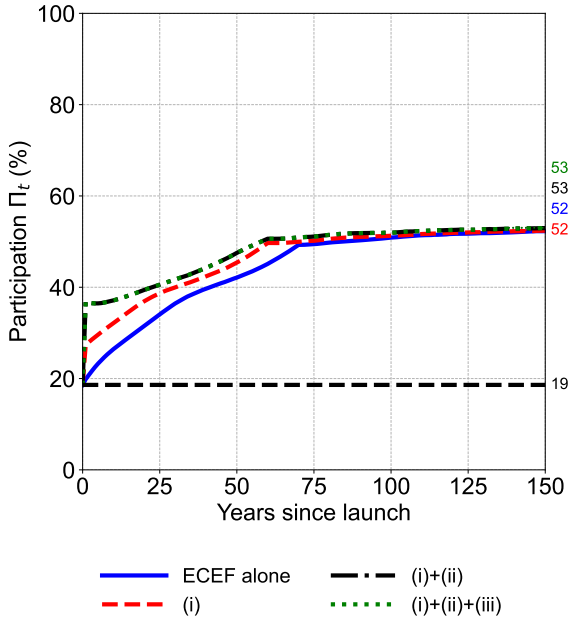
		Design T1			Design T2	
	alone	(i) *born children*	(i)+(ii) *+ next child*	(i)–(iii) *+ €1,000*	(i)+(ii) *+ next child*	(i)–(iii) *+ €1,000*
a) Italy						
Participation rate Π_t *(%)*						
After 1 year	13.7	19.6	27.7	27.7	30.6	30.6
After 10 years	18.4	23.4	28.1	28.1	31.0	31.0
After 20 years	22.7	27.6	29.9	29.9	33.0	33.0
After 40 years	30.9	33.7	35.5	35.5	38.8	38.8
After 60 years	35.7	39.9	40.9	40.9	44.6	44.6
Steady state, Π^*	42.0	42.1	42.9	42.9	46.2	46.2
Holdings S_t/M *(%)*						
After 10 years	0.15	0.47	0.84	1.48	0.99	1.75
After 20 years	0.7	1.7	2.5	4.0	3.0	4.7
After 40 years	4.9	9.2	12.9	18.9	15.1	22.2
After 60 years	21.0	36.5	45.4	66.8	53.0	78.0
Steady state, S^*/M	37.9	37.9	48.0	69.7	53.1	77.2
Enrollment						
Children aged 1–10 at launch (%)	–	53.2	53.2	53.2	62.9	62.9
Newborns, steady state, θ^* (%)	64.5	64.4	64.6	64.6	71.6	71.6
b) Europe						
Participation rate Π_t *(%)*						
After 1 year	19.9	27.5	36.9	36.9	40.0	40.0
After 10 years	26.5	32.1	37.1	37.1	40.1	40.1
After 20 years	31.6	36.9	39.4	39.4	42.5	42.5
After 40 years	39.7	42.4	44.2	44.2	47.2	47.2
After 60 years	45.1	49.7	50.6	50.6	53.9	53.9
Steady state, Π^*	52.5	52.5	53.0	53.0	55.2	55.2
Holdings S_t/M *(%)*						
After 10 years	0.12	0.37	0.63	1.14	0.73	1.32
After 20 years	0.6	1.3	1.9	3.1	2.2	3.6
After 40 years	4.1	7.5	10.1	15.0	11.6	17.2
After 60 years	17.9	29.7	36.3	53.7	41.4	61.3
Steady state, S^*/M	39.7	39.7	49.5	72.3	52.7	76.9
Enrollment						
Children aged 1–10 at launch (%)	–	58.7	58.7	58.7	67.9	67.9
Newborns, steady state, θ^* (%)	76.1	76.0	76.2	76.2	81.0	81.0

Notes: (i): children aged 1–10 enrolled at launch; (ii): an account for the next child before birth; (iii): a €1,000 government contribution at opening; columns are cumulative, and the last two are under design T2. Π_t in percent of all households; S_t/M in percent of the capitalization M, held fixed, pre-birth accounts included. Enrollment: share of the children aged 1 to 10 at launch who are enrolled (policy (i)), and θ^*, the steady-state enrollment rate of newborns.

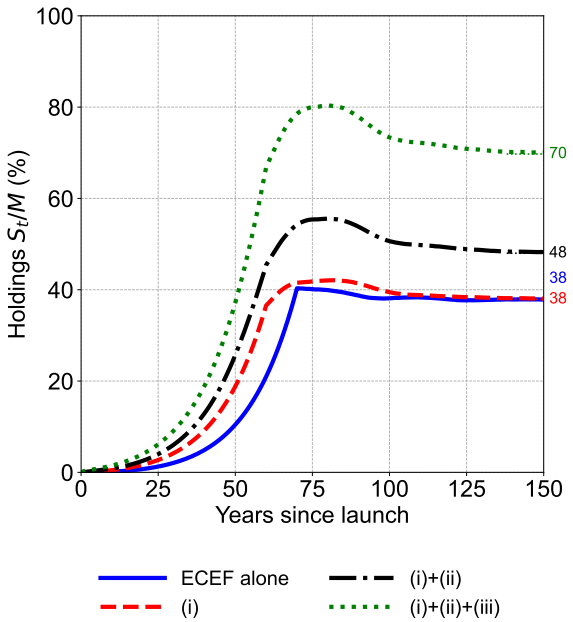
Figure A10: Stock-market participation and fund holdings under the accompanying policies, design T1, full transition



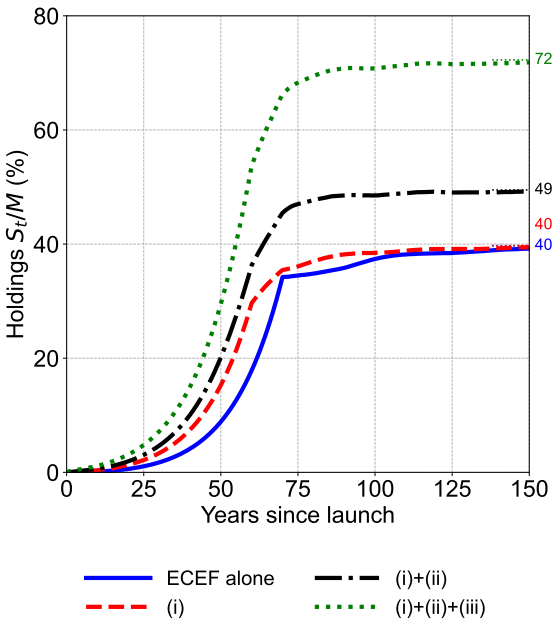
(a) Italy, participation rate Π_t



(b) Europe, participation rate Π_t



(c) Italy, holdings S_t/M



(d) Europe, holdings S_t/M

Notes: The four T1 variants of Table A21, 150 years after launch; the steady state is printed at the right edge. The opening contribution (iii) does not affect participation, so its line (dotted) coincides with that of (i)+(ii) (dash-dotted) in panels (a) and (b).

costs 2.1 percent of GDP. Under T2, the launch policies generate more holdings on their own, so the 5 percent target requires €5,300 per account in Italy. The monthly contribution replaces the €10 of the program, with no opening contribution; holdings are proportional to it given enrollment. One percent of the Italian capitalization after ten years takes €70 a month under the ECEF alone and €10 with the two launch policies; five percent takes €60 a month with the launch policies, which implies steady-state holdings of about 290 percent of the capitalization, since the higher contribution keeps paying for seventy years.

Table A22: Opening or monthly contribution needed for given holdings after ten years

	Italy					**Europe**				
Target S_{10}/M	1%	2%	5%	10%	20%	1%	2%	5%	10%	20%
ECEF alone, design T1 (without it, S_{10}/M = 0.15% in Italy, 0.12% in Europe)										
Opening contribution (euro)	3,269	7,100	18,591	37,743	76,047	3,996	8,552	22,222	45,005	90,570
Steady-state holdings with it, S^*/M (%)	109	192	441	857	1,688	131	234	545	1,063	2,100
Monthly contribution instead (euro)	68	137	341	683	1,366	81	162	406	812	1,625
Steady-state holdings with it, S^*/M (%)	259	518	1,294	2,588	5,177	323	645	1,613	3,226	6,452
(i), design T1 (without it, S_{10}/M = 0.47% in Italy, 0.37% in Europe)										
Opening contribution (euro)	825	2,389	7,079	14,896	30,530	1,239	3,210	9,124	18,979	38,689
Steady-state holdings with it, S^*/M (%)	55.8	89.7	192	361	700	67.9	113	247	472	920
Monthly contribution instead (euro)	21	42	106	212	424	27	54	135	269	539
Steady-state holdings with it, S^*/M (%)	80.3	161	402	803	1,606	107	214	535	1,071	2,141
(i)+(ii), design T1 (without it, S_{10}/M = 0.84% in Italy, 0.63% in Europe)										
Opening contribution (euro)	248	1,802	6,465	14,237	29,780	729	2,687	8,562	18,353	37,934
Cost, first year (% of M)	0.05	0.40	1.42	3.13	6.55	0.12	0.45	1.45	3.10	6.42
Cost, first ten years (% of M)	0.10	0.71	2.54	5.58	11.68	0.23	0.84	2.69	5.76	11.90
Steady-state holdings with it, S^*/M (%)	53.4	87.2	189	357	695	66.1	111	245	468	914
Monthly contribution instead (euro)	12	24	59	119	238	16	32	80	159	319
Steady-state holdings with it, S^*/M (%)	57.1	114	286	571	1,142	78.8	158	394	788	1,577
(i)+(ii), design T2 (without it, S_{10}/M = 0.99% in Italy, 0.73% in Europe)										
Opening contribution (euro)	7	1,324	5,274	11,857	25,023	464	2,161	7,249	15,731	32,693
Cost, first year (% of M)	0.00	0.34	1.37	3.09	6.51	0.09	0.42	1.42	3.08	6.39
Cost, first ten years (% of M)	0.00	0.61	2.44	5.48	11.57	0.17	0.78	2.62	5.70	11.84
Steady-state holdings with it, S^*/M (%)	53.3	85.0	180	338	655	63.9	105	228	434	845
Monthly contribution instead (euro)	10	20	50	101	201	14	28	69	138	275
Steady-state holdings with it, S^*/M (%)	53.4	107	267	534	1,069	72.5	145	363	725	1,450

Notes: Target: holdings S_{10}/M after ten years in percent of today's capitalization M (€1,042 billion for Borsa Italiana, €14.6 trillion for the Euro Stoxx 600), held fixed. Opening contribution: the lump sum paid by the government into every account when it is opened for a child (the newborns from launch on and, under (i), the children aged 1 to 10 enrolled at launch), with the €120 yearly contribution, that reaches the target; holdings are linear in it given enrollment, which is the one generated by the model under each policy. Cost: the lump sum times the accounts opened for children, in the first year (the launch stock and the newborns of the year) and cumulated over the first ten years; M is 46 percent of GDP in Italy and 77 percent in Europe. Monthly contribution: the contribution, in place of the €10 a month of the program and with no opening contribution, that reaches the target. S^*/M: steady-state holdings with that contribution.

ECEF holdings build up gradually, but with all three accompanying policies they are already substantial in euro terms after the first decade. In Italy, holdings reach 1.5 percent of market capitalization after ten years, about €15 billion, and 4 percent after twenty years, about €40 billion. In Europe, the same three policies bring holdings to 1.1 percent of the Euro Stoxx 600 after ten years, about €160 billion, and 3.1 percent after twenty years, about

€450 billion. For comparison, at the end of 2024 households held €1,852 billion of listed shares in the EU-27 and €167 billion in Italy (Eurostat, 2026). After twenty years, ECEF accounts under the three policies would therefore amount to about one-quarter of the listed equity held by households at the end of 2024 in both areas. The €450 billion of European ECEF holdings is about thirty times the €15 billion raised in European IPOs in 2024 and more than sixty times the €7 billion raised in 2023 (PwC, 2025). It is also comparable to the €577 billion in grants and loans made available through the Recovery and Resilience Facility over 2021–26 (European Commission, 2026), and to the €540 billion of investment mobilized over 2015–20 by the Investment Plan for Europe, launched by the European Commission in 2014 to address the investment shortfall following the financial crisis (European Investment Bank, 2026).

E.6 Robustness and caveats

Table A23 reports, for the ECEF alone under T1, stock-market participation Π_t after twenty years and in the steady state, the steady-state enrollment rate θ^*, and holdings S_t/M after twenty years and in the steady state. The first row reports the baseline results. The next block switches off, one after the other, two forces through which the program reinforces itself. The first is the transmission of willingness within a lineage, governed by ρ_o and ρ_w: a household whose heads grew up with an ECEF account (ρ_o) or that sponsored its own children (ρ_w) passes its willingness on to the next generation. The second operates through stock-market participation: the willingness to sponsor an account is drawn with probability τ_μ, which depends on the household's stock-market participation status μ. Because a household whose heads, or whose child living at home, own an ECEF account is a stock-market participant, a household reached by the program can become a participant and is then more likely to be willing at its next occasion, with probability τ_1 rather than τ_0.

The row without transmission sets $\rho_o = \rho_w = 0$, removing only the first force. The row without both removes both forces, assuming that the probability of being willing to sponsor depends on the exogenous stock-market participation status m rather than on μ. When $\rho_o = \rho_w = 0$, the steady-state enrollment rate in Italy is 59.1 percent instead of 64.5 percent, and participation Π^* is 41 percent instead of 42 percent. Without either force, enrollment falls to 51 percent and participation to 39 percent; the enrollment rate even declines over time, from 55 percent at launch, because sponsors are drawn from an aging population with fewer living grandparents. The two forces together therefore account for 3 of the 29 percentage points by which participation rises in the long run in Italy, and raise the steady-state enrollment rate by 13 percentage points. Neither force is visible in the first twenty years, because both act at a later occasion of a lineage: willingness is transmitted a generation later, and the first enrolled children become parents only from year 25 onward. In Europe steady-state participation is 52 percent in the baseline, 51 without transmission and 48 without both forces. With transmission at one point only, steady-state participation in Italy is 41.6 percent when $\rho_w = 0$ and 41.6 percent when $\rho_o = 0$, against 42.0 percent in the baseline. Figure A11 shows the paths of the first three rows of Table A23.

The next two blocks vary the transmission parameters, ρ_o and ρ_w together, and the sorting parameter α. Across the estimates of intergenerational transmission in the literature, which imply values of ρ_o from 0.23 to 0.53 (with $\rho_w = \rho_o$), steady-state participation in Italy ranges from 41.6 to 42.3 percent, compared with 42.0 percent at the calibrated value; even if every willingness acquired through the ECEF were passed on, $\rho_o = \rho_w = 1$, it would be 42.7 percent. The range is narrow because a head who grew up with an account is a stock-market participant and is therefore willing to sponsor with probability τ_1 even when $\rho_o = 0$; intergenerational transmission raises this probability by only $\rho_o(1 - \tau_1)$. A higher sorting parameter α lowers enrollment because a household that copies its parents' willingness adds no independent chance of sponsoring, which lowers the probability that at least one of the three potential sponsors of a newborn is willing to contribute to the child's ECEF account. With $\alpha = 1$, the steady-state enrollment rate θ^* is 58 percent and participation Π^* is 39 percent, compared with 66 and 43 percent when $\alpha = 0$, that is, when the three potential sponsors draw their willingness independently. Sorting matters most at launch, when no willingness has yet been transmitted: the enrollment rate at launch falls from 58 percent with independent draws to 45 percent when every household follows one of its parent households.

The last block varies the level of stated willingness to sponsor an ECEF account, τ_0 and τ_1. The first row raises it. In our survey, among respondents for whom the information was clear, stated take-up under T1 is about 1.5 times the average for non-stockholders and about 1.3 times for stockholders (Table 9). Multiplying τ_0 by 1.5 and τ_1 by 1.3 raises the enrollment rate at launch in Italy from 55 to 71 percent, participation Π after twenty years from 23 to 26 percent, and steady-state holdings from 37.9 to 44.8 percent of M. The other two rows apply the opposite adjustment, a haircut λ that multiplies both τ_0 and τ_1 by 0.7 or 0.5, because stated intentions tend to exceed actual behavior.[21] Enrollment falls less than willingness because an account is opened if any of the three potential sponsors is willing: reducing the willingness of a non-participant from 0.28 to 0.20 lowers the probability that at least one of three independent sponsors is willing from 63 to 48 percent; at $\lambda = 0.5$, the enrollment rate at launch is 32 percent rather than 55 percent, a decline of 42 percent rather than 50 percent. Participation after twenty years is 20 percent at $\lambda = 0.7$ and 18 percent at $\lambda = 0.5$, compared with 23 percent in the baseline. Holdings fall with enrollment: at $\lambda = 0.7$, they are about one-quarter lower in the first twenty years and one-fifth lower in the steady state; after ten years they are 0.11 percent of the Italian capitalization instead of 0.15. The British experience provides an external benchmark: between 2005 and 2010, 37 percent of Child Trust Fund accounts received a payment from family or friends (National Audit Office,

[21] The first haircut is the inverse of the median ratio of hypothetical to actual values in the meta-analysis of stated-preference studies by Murphy et al. (2005) and is also close to the share of British parents who acted within a year on the Child Trust Fund voucher (National Audit Office, 2023); the second follows the convention of dividing stated values by two. Choice-based questions such as ours show less bias than the median study of Murphy et al. (2005), and with automatic enrollment the fraction of stated willingness that materializes could be close to one: in the Oklahoma experiment that opened a college-savings account for every newborn in the treatment group, take-up was universal (Center for Social Development, 2026).

Table A23: Reinforcing forces and robustness, design T1

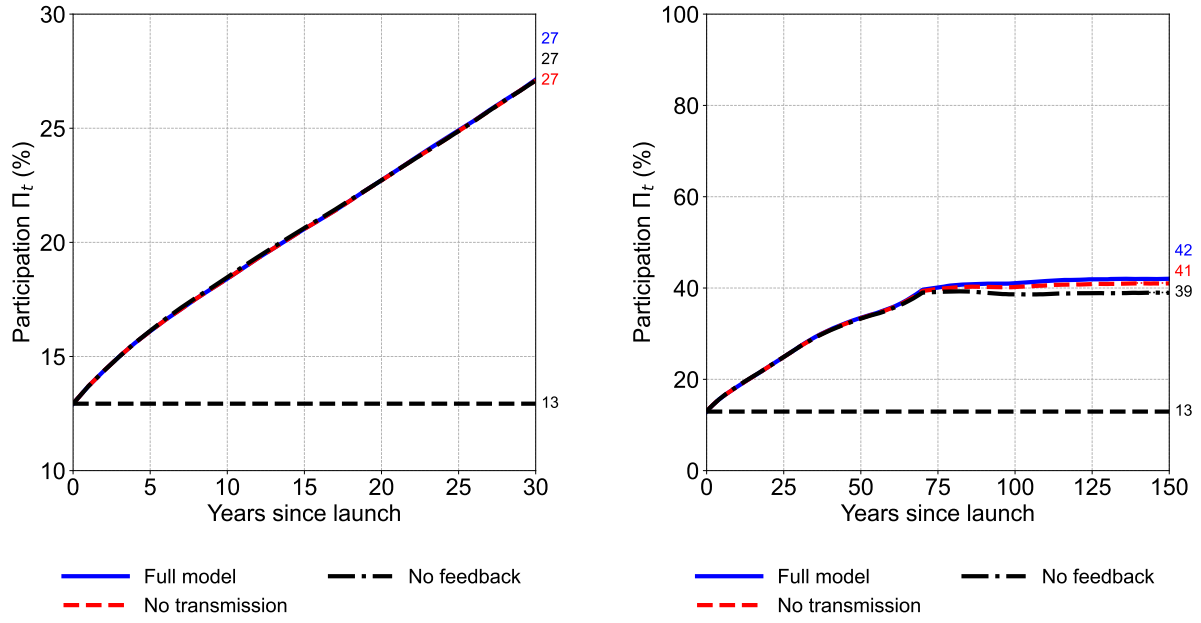
	Italy					Europe				
	Π_{20}	Π^*	θ^* (%)	S_{20}/M	S^*/M	Π_{20}	Π^*	θ^* (%)	S_{20}/M	S^*/M
Baseline (design T1)	22.7	42.0	64.5	0.7	37.9	31.6	52.5	76.1	0.6	39.7
Dropping intergenerational transmission and participation feedback										
Without transmission ($\rho_o = \rho_w = 0$)	22.7	41.1	59.1	0.7	34.7	31.5	50.9	68.5	0.6	35.8
Without both ($\rho_o = \rho_w = 0$, τ on m)	22.7	39.0	51.0	0.7	29.8	31.5	47.8	57.5	0.6	30.0
Transmission at one point only										
Only ρ_o ($\rho_w = 0$)	22.7	41.6	62.2	0.7	36.7	31.5	51.8	72.9	0.6	38.1
Only ρ_w ($\rho_o = 0$)	22.7	41.6	61.9	0.7	36.4	31.6	51.7	72.4	0.6	37.8
Transmission										
$\rho_o = \rho_w = 0.23$	22.7	41.6	62.5	0.7	36.6	31.6	51.9	73.2	0.6	38.2
$\rho_o = \rho_w = 0.53$	22.7	42.3	65.9	0.7	38.8	31.6	52.9	78.1	0.6	40.7
$\rho_o = \rho_w = 1$	22.7	42.7	68.1	0.7	40.0	31.6	53.4	80.7	0.6	42.1
Sorting										
$\alpha = 0$	23.2	42.6	66.1	0.8	38.8	32.1	53.0	77.5	0.6	40.4
$\alpha = 0.4$	22.2	41.4	62.8	0.7	36.9	31.0	51.9	74.7	0.6	39.0
$\alpha = 1$	20.9	39.3	58.0	0.6	34.2	29.2	50.2	70.5	0.5	36.8
Stated willingness										
Information clear ($\tau_0 \times 1.5$, $\tau_1 \times 1.3$)	25.9	46.8	76.1	0.9	44.8	35.2	56.1	85.2	0.8	44.5
Haircut $\lambda = 0.7$	20.1	37.0	52.4	0.5	30.7	28.3	47.8	64.2	0.5	33.5
Haircut $\lambda = 0.5$	18.2	32.3	41.4	0.4	24.4	25.7	42.8	52.4	0.3	27.3

Notes: ECEF alone, design T1. Π_{20} and Π^*: participation after twenty years and in the steady state, percent of all households; θ^*: steady-state enrollment rate, percent; S_{20}/M and S^*/M: holdings after twenty years and in the steady state, percent of the capitalization M, held fixed. Baseline: $\rho_o = \rho_w = 0.39$, $\alpha = 0.2$, $\lambda = 1$. Without both: $\rho_o = \rho_w = 0$ and willingness drawn on the exogenous status m instead of μ. Only ρ_o: no transmission from sponsoring one's children to sponsoring one's grandchildren; only ρ_w: no transmission from a head who grew up with an account to its willingness as a parent. $\rho_o = \rho_w = 0.23$ and 0.53: the values implied by Fagereng et al. (2021) and by the own-birth estimate of Black et al. (2017); $\rho_o = \rho_w = 1$: every willingness acquired through the ECEF is passed on. $\alpha = 0$: the three potential sponsors draw independently; $\alpha = 0.4$: the spousal correlation in parental wealth of Charles et al. (2013); $\alpha = 1$: every household follows one of its parent households. Information clear: $\tau_0 \times 1.5$ and $\tau_1 \times 1.3$ (Table 9; the ratio for stockholders is backed out from the rows for the whole sample and for non-stockholders). λ: τ_0 and τ_1 multiplied by 0.7 or 0.5.

2023), compared with an enrollment rate at launch of 55 percent under T1 and 42 percent with the haircut $\lambda = 0.7$.

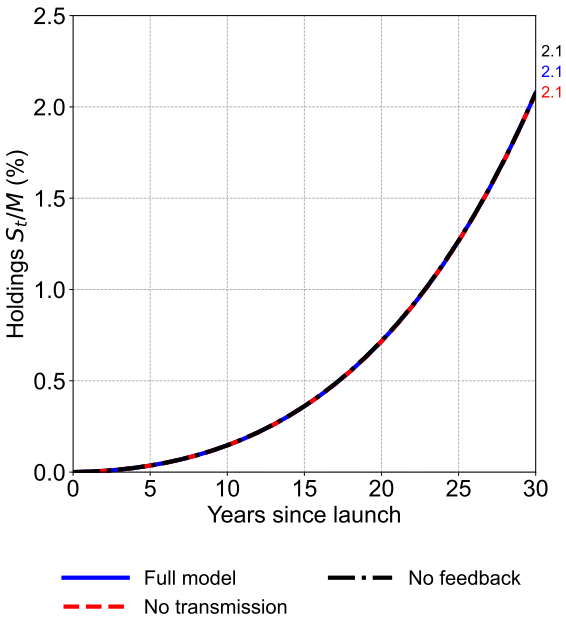
Four assumptions bound the interpretation. The exit hazards come from a small SHIW panel and apply to the exogenous status only; an account holder counts as a participant until withdrawal, and its parents' household while the account holder lives at home, so the durability of the gains rests on these rules. The transmission probability ρ_o is taken from the intergenerational transmission of stock-market participation in Sweden, and ρ_w is set equal to it; without them steady-state participation is 0.9 percentage points lower in Italy. The capitalization is held fixed, so holdings measure the demand for equity generated by the program, not its equilibrium price effects. They measure gross demand: the model has no portfolio, so it does not say whether a sponsor who already holds equity funds the

Figure A11: Transmission and feedback, design T1, Italy

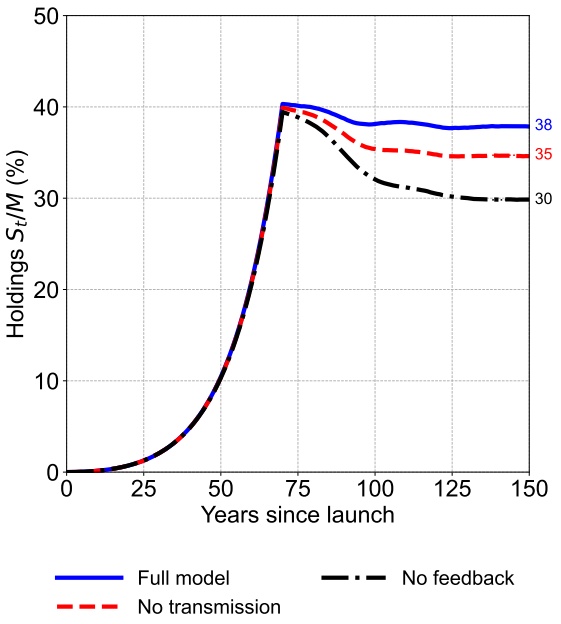


(a) Participation, first thirty years

(b) Participation, full transition



(c) Holdings, first thirty years



(d) Holdings, full transition

Notes: Solid: baseline. Dashed: without transmission ($\rho_o = \rho_w = 0$). Dash-dotted: without both forces ($\rho_o = \rho_w = 0$ and willingness drawn on m). ECEF alone, Italian calibration; the European figures are in the replication files.

contribution out of other equity, which would lower net demand, nor whether financing an account leads a household to buy equity on its own, which would raise it; Table 12 shows how many participants hold no equity other than through the fund. The demography follows the median official projection, entrants included, and then stays constant; the fall of births lowers holdings relative to a fixed capitalization, and the aging of the population makes participation among all households lower than among the survey's ages.

E.7 Financial stability and venture capital

Financial stability The government guarantee raises the question of whether the ECEF could expose public finances to large contingent liabilities or even create a "diabolic loop" between sovereign risk and the fund.[22] In practice, the fiscal risk is limited for at least three reasons. First, the 70-year lock-in limits the government's exposure at any point in time: because accounts are liquidated only at age 70, the guarantee can be called only when a cohort reaches that age, so at most one cohort can generate payouts in any given year. Second, the potential payouts are small in expectation. The probability of a shortfall is about 2 percent and the average shortfall about €2,000, implying an expected annual payout of only about €13 million in Italy under full enrollment of the 355,000 newborns in the launch year, less than 0.001 percent of GDP. Third, although successive cohorts face overlapping return histories and could therefore experience consecutive shortfalls, the overlap affects the duration of fiscal payouts, not their annual amount. Even if the entire fund of a retiring Italian cohort were wiped out, the maximum annual payout would be about €3.0 billion, or 0.13 percent of GDP. Moreover, mild mean reversion in equity returns limits the persistence of such sequences: incorporating the negative serial correlation documented in the literature (Fama and French, 1988; Poterba and Summers, 1988) reduces the probability of a shortfall to about 1 percent (Appendix C.8). Because the benefits of the ECEF accrue to the European economy as a whole, an EU-wide guarantee would be a natural way to share the associated fiscal risk, weakening the link between ECEF losses and the public finances of any individual member state. It would thereby limit the scope for sovereign–fund feedback loops and strengthen the credibility of the guarantee.

The European venture capital industry The fund need not be restricted to listed equities: a small, capped share could be allocated to diversified European venture capital funds. At 1 percent of steady-state EU holdings, this would generate about €57–61 billion of venture capital assets under designs T1–T4—roughly one-third of the €170 billion currently managed by the European venture capital industry (Invest Europe, 2025) and about 5 percent of the assets of the U.S. industry (NVCA, 2025). The portfolio cost of such an allocation is small. In our simulations, allocating 1 percent of the fund to a diversified European venture

[22] A diabolic loop arises when sovereign and private-sector losses reinforce each other: weaker sovereign creditworthiness increases the risk borne by government-backed financial claims, while losses on those claims increase the government's fiscal burden and further weaken sovereign creditworthiness (Acharya et al., 2014; Brunnermeier et al., 2016; Farhi and Tirole, 2018).

capital portfolio, with a mean real return of 9 percent, a standard deviation of 35 percent, and a correlation of 0.6 with public equity (see Appendix C), raises expected wealth at age 70 from €149,700 to €151,600, while leaving the probability of a terminal loss essentially unchanged, at 1.8 percent. The allocation would nevertheless introduce additional risk, illiquidity, valuation uncertainty, and management costs, and is therefore best considered separately from the core design.