Moral Sentiments and Investor Behavior: Evidence from the Chernobyl Disaster*

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Abstract

We exploit meteorological conditions prevailing in Sweden at the time of the Chernobyl accident, which created stark regional differences in personal exposure to a large-scale environmental shock within the same population. Using detailed register-based dataset, we examine whether random variation in "Chernobyl experiences" predicts values-based investment behavior later in life. Individuals in the most affected regions are found to be about 20% more likely to invest in ESG assets compared to those in the least affected regions. The effect is robust to controls for extensive individual characteristics, including health status, and to pre-event sorting across regions. Our study contributes to research on non-risk preferences in portfolio choice and demonstrates how lived experiences and episodic memory generate persistent preference legacies in investment behavior.

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"*How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it.*"

—Adam Smith, **The Theory of Moral Sentiments** (1759)

I Introduction

More than two and a half centuries ago, Adam Smith, in *The Theory of Moral Sentiments*, described moral sentiments as emotionally grounded preferences rooted in notions of virtue, fairness, and pro-social conduct—even when such behavior entails personal cost. This early insight anticipates a broader view of economic behavior, one in which portfolio choice may reflect not only expected pecuniary payoffs but also the moral or social attributes of underlying investments. In this perspective, portfolio decisions extend beyond a narrow calculus of risk and return to incorporate a moral dimension that standard theory typically abstracts away.[1] This tension between self-interest and broader motives also appears in modern critiques. In his classic "Rational Fools" essay, Sen (1977) quotes Edgeworth (1881), an early contributor to the neoclassical paradigm, as conceding that "man is for the most part an impure egoist, a mixed utilitarian."

More recently, Laura T. Starks, in her 2023 Presidential Address to the *American Finance Association*, sharpened this distinction in the financial domain by emphasizing the contrast between "*Value*" and "*Values*" motivations in investor behavior. This important framing highlights how environmental, social, and governance (ESG) investment approaches are shaped not only by expectations of risk-adjusted returns but also by underlying moral sentiments, thereby reinforcing the need to integrate preference-based motivations into models of financial decision-making.

Our paper builds on this lineage by investigating how moral sentiments shape investor behavior. While values-based investing is now well documented, the underlying heterogeneity across individuals remains poorly understood. Why do some investors consistently integrate concerns about sustainability, fairness, or social impact into their portfolio choices, while others appear largely indifferent? The sources of such variation in moral preferences have received limited systematic at-

[1] Ashraf, Camerer and Loewenstein (2005) note that these ideas effectively position Adam Smith as one of the first "behavioral economists."

tention by financial economists, despite their importance for understanding the demand for socially responsible investing (SRI) and ESG assets. We contribute to research in this domain by providing novel empirical evidence on how differences in moral sentiment emerge and persist. In doing so, we shed light on why the intensity and direction of values-based investing vary so markedly across otherwise similar individuals.

The core idea of our approach is simple: when everyday life is disrupted by a major adverse event that exposes the hidden costs of modern economic activity, it can leave a durable moral imprint on those who experience it. Such societal shocks heighten the salience of moral concerns and may strengthen preferences for aligning financial decisions with social or environmental values. History provides a number of examples – industrial accidents like Bhopal, ecological disasters such as the Exxon Valdez and Deepwater Horizon oil spills, and nuclear incidents like Chernobyl or Fukushima – where the boundaries between technological progress and societal harm became starkly visible. These episodes illustrate a broader mechanism: when externalities become personally salient, they can reshape the moral underpinnings of economic decision-making, including portfolio choice.

Among these events, Chernobyl offers a uniquely powerful setting for empirical analysis. The 1986 nuclear disaster, while originating in the Soviet Union, dispersed radioactive fallout across the world in highly uneven patterns determined by meteorological factors. In Sweden, this generated sharp cross-sectional differences in how communities experienced the accident, despite similar economic and cultural baselines, creating an as-good-as-random source salience around broader moral and pro-social concerns. For some regions, daily life was disrupted: playgrounds were closed, hunting and fishing curtailed, food supplies declared unsafe, and soil and water subjected to routine testing. Other nearby regions, however, saw little change. This heterogeneity provides a rare opportunity to study how exposure to the salient costs of modern economies and technologies can leave long-run imprints, influencing subsequent behaviors such as values-based investment choices.

Employing comprehensive register-based data from Sweden that link individuals to detailed portfolio holdings and demographic characteristics, we find that those living in regions more severely affected by Chernobyl – proxying for the intensity of the lived experience of the shock – are about 20% more likely to allocate investments to values-based funds than otherwise similar investors in unaffected regions. The gradient is monotone in exposure intensity and persistent over time,

consistent with a durable preference shift rather than a short-lived reaction. A battery of robustness checks reinforces this interpretation. Exposure is orthogonal to pre-treatment demographics and health status, alleviating concerns about omitted variables. Results remain stable when controlling for regional variation and adding birth-region fixed effects, reducing the possibility of sorting. Finally, the regions most affected by fallout were not ex ante more anti-nuclear or green policy inclined. Taken together, the evidence suggests that salient community-level shocks can re-weight investor preferences, increasing the importance of non-pecuniary motives and generating persistent heterogeneity in values-based investing.

We make several significant contributions to research on investor behavior. First, we are one of the first studies to examine the effects of salient exposure to adverse societal shocks. Our evidence is consistent with such shocks leaving enduring imprints on household portfolio choice along a values (ESG/SRI) dimension.[2] Second, we contribute empirical evidence to the recently emerging literature showing that moral sentiments constitute a distinct channel, orthogonal to risk-based explanations, that influence decision-making in the financial domain (e.g., Bonnefon, Landier, Sastry and Thesmar (2025) and Paine, Schoar and Thesmar (2025)). Third, we explore the well-documented individual-level heterogeneity in values-based investing to understand why some investors systematically integrate ESG and SRI assets into their portfolios while others remain indifferent. Importantly, we identify variation in moral sentiments as an economically and statistically significant driver, complementing the literature on values-based investing (e.g., Heinkel, Kraus and Zechner (2001), Hong and Kacperczyk (2009), Hartzmark and Sussman (2019)).[3]

The paper proceeds as follows. Section II introduces moral sentiments as a channel influencing investor behavior, develops a theoretical framework, and reviews related empirical work. Section III describes the Chernobyl disaster and motivates it as a natural experiment. Section IV details the data and empirical methodology. Section V presents the main results and robustness analyses. Section VI concludes.

[2] A growing literature examines how disasters and unexpected shocks shape investor sentiment and market outcomes. Examples include studies of aviation accidents, hurricanes, and the COVID-19 pandemic (e.g., Kaplanski and Levy (2010), Dessaint and Matray (2017), and Ramelli and Wagner (2020)).

[3] Several studies document a link between SRI and corporate policies (e.g., Di Giuli and Kostovetsky (2014)) and stock prices (e.g., Lins, Servaes and Tamayo (2017), Krüger (2015), and Barber, Morse and Yasuda (2021)).

II Theoretical Framework and Related Empirical Evidence

A Beyond Risk and Return: Embedding Moral Sentiments

Traditional portfolio theory, rooted in mean-variance optimization (e.g., Markowitz (1952)) and its modern extensions (see, e.g., Cochrane (2009) for a review), portrays investors as utility-maximizers trading off expected return against risk. However, mounting evidence from top finance studies suggests that this simplification is incomplete: individuals frequently allow non-pecuniary, values-based considerations to influence their asset choices.

Empirically, investors exhibit values-driven behavior even when it contradicts financial self-interest. Riedl and Smeets (2017) show that socially inclined individuals disproportionately invest in socially responsible funds despite expecting underperformance. Heeb, Kölbel, Paetzold and Zeisberger (2023) find that sustainable investors' willingness-to-pay is largely explained by intrinsic motivations rather than expected returns. Complementing this, Bonnefon et al. (2025) provide controlled evidence that investors are willing to pay higher prices to align their portfolios with firms exhibiting positive externalities—revealing moral preferences distinct from price-impact motives.

These findings signal that the investor's preference space extends beyond pecuniary returns. Economic theory has begun to catch up. Models embedding esteem, identity, fairness, and reciprocity into preferences demonstrate that prosocial motives can drive real behavior even at the cost of financial outcomes (e.g., Fehr and Schmidt (1999), Bolton and Ockenfels (2000), Akerlof and Kranton (2000), and Bénabou and Tirole (2006)). While these models were initially framed in broader behavioral economics, they remain firmly within normative optimization frameworks, making them highly suitable for integration with finance-based portfolio theory.[4]

In sum, a growing body of evidence suggests investors derive utility not only from wealth accumulation or risk management but also from affirming moral identity and aligning with social values. This implies that the canonical efficient frontier is incomplete, and that an augmented framework – incorporating moral utility as a separate preference dimension – is useful to accurately describe real-world investing behavior.

[4]See also, e.g., Rabin (1993) and Bénabou and Tirole (2011) for related treatments of fairness and identity in economic decision-making.

B Standard Return–Risk Efficiency Framework

We develop a simple framework that embeds moral (values-based) preferences into a portfolio-choice setting. The goal is not to overturn the return–risk paradigm but to extend it in a manner consistent with moral sentiments influencing investor behavior.

Consider a utility-maximizing investor allocating wealth across n risky assets. Let $w = (w_1, \ldots, w_n)^\top$ denote portfolio weights with $1^\top w = 1$, and let $R \in \mathbb{R}^n$ be a vector of random returns. The portfolio payoff is

$$\Omega = w^\top R. \tag{1}$$

In the neoclassical framework, preferences depend solely on financial outcomes. The problem solved by the investor is

$$\max_w \ \mathbb{E}[U(\Omega)] \quad \text{s.t.} \quad 1^\top w = 1, \tag{2}$$

where U is increasing and concave. For an interior optimum, the first-order condition is

$$\mathbb{E}\big[U'(\Omega)R\big] = \lambda \mathbf{1}, \tag{3}$$

with λ the Lagrange multiplier on the budget constraint. In this benchmark, portfolio choice is governed entirely by the tradeoff between expected return and risk.

C Extending Preferences with Moral Sentiments

We now extend the standard return–risk setting by allowing investors to derive utility from a non-financial portfolio characteristic. Let $m = (m_1, \ldots, m_n)^\top$ denote a vector of moral (values-based) attributes, where m_i measures the degree to which asset i aligns with socially desirable or prosocial values (e.g., ESG scores). The investor's portfolio-level moral exposure is

$$z = w^\top m. \tag{4}$$

Preferences are defined over both financial payoffs and moral exposure:

$$\max_{w} \ \mathbb{E}\big[u(\Omega, z; \theta)\big] \quad \text{s.t.} \quad 1^{\top} w = 1, \tag{5}$$

where $u_{\Omega} > 0$, $u_{\Omega\Omega} \leq 0$, $u_z \geq 0$, and θ parameterizes the investor's moral-sentiment state. Assume increasing differences in (z, θ),

$$\frac{\partial^2 u}{\partial z \, \partial \theta} \geq 0, \tag{6}$$

so that higher θ raises the marginal utility of moral exposure. The standard benchmark is nested when u is independent of z (i.e., $u_z \equiv 0$).

For an interior optimum, the first-order condition becomes

$$\mathbb{E}[u_{\Omega}(\Omega, z; \theta)\, R] \ + \ \mathbb{E}[u_z(\Omega, z; \theta)]\, m \ = \ \lambda \mathbf{1}. \tag{7}$$

Equivalently,

$$\mathbb{E}[u_{\Omega}(\Omega, z; \theta)\, R] \ = \ \lambda \mathbf{1} \ - \ \mathbb{E}[u_z(\Omega, z; \theta)]\, m. \tag{8}$$

An increase in θ raises the marginal valuation of moral exposure (via u_z), which – holding financial primitives fixed – shifts the *optimal* portfolio toward higher-m assets. This adjustment can occur even when such assets reduce expected return or increase variance, because investors are compensated in utility through z. Under the increasing-differences assumption, the comparative static is monotone in z (higher θ implies higher optimal z); the exact re-weighting across individual assets depends on both m and financial characteristics.

D Implications for Investor Behavior

The framework implies that heterogeneity in moral preferences, captured by θ, generates systematic cross-sectional variation in SRI and ESG allocations that is orthogonal to beliefs about expected returns or risks. At the optimum, the marginal utility of financial payoffs is equated with the marginal utility of moral exposure. As θ rises, the shadow value of z increases, shifting portfolio weights toward higher-m assets even when this entails lower expected return or weaker mean–variance efficiency. Intuitively, investors with stronger moral preferences are willing to trade off some financial

efficiency to obtain greater moral alignment.

Importantly, moral sentiments act as a preference shifter rather than a change in the opportunity set. An increase in θ leaves asset payoffs unchanged but alters the investor's indifference map between financial and moral returns. Thus, two investors facing identical return distributions may hold systematically different portfolios solely because their θ differs. Within an individual, temporal variation in moral salience can similarly rationalize portfolio rebalancing over time. In equilibrium, heterogeneity in θ sustains persistent demand for values-congruent assets, producing cross-sectional variation in holdings and potentially affecting asset prices even without differences in expectations.[5]

ESG allocations can therefore be viewed as natural manifestations of these augmented preferences. Tilts toward assets that advance environmental stewardship, governance quality, or social cohesion are not altruistic departures from rationality but reflections of investor utility defined over an expanded payoff space. In this framework, the "return" to an investment is partly material and partly moral, and the utility of an asset depends jointly on its risk–return profile and on the values it embodies. This helps explain the equilibrium demand for ESG-congruent securities even when they deliver lower pecuniary returns in exchange for moral utility.

This perspective also clarifies the heterogeneous adoption of ESG and SRI strategies across individuals and populations. Variation in participation need not stem solely from differences in expectations about risk-adjusted performance but can reflect differences in the strength, salience, or internalization of moral sentiments. Some investors may assign high marginal utility to values-congruent allocations, while others regard such tilts as irrelevant to their objective function. The result is systematic heterogeneity in portfolio outcomes that is difficult to reconcile with representative-agent benchmarks but natural once moral sentiments are recognized as a component of preferences.

E Empirical Design: Shocks to Moral Sentiments and Investor Behavior

A central challenge in testing this framework is isolating variation in moral-sentiment intensity, θ, that is plausibly exogenous to financial markets. The ideal setting has three features. First, the shock originates outside capital markets, ruling out confounding with price dynamics. Second,

[5]Recent asset-pricing models incorporate heterogeneous preferences for sustainability, showing how "green" tastes can affect equilibrium demand, prices, and expected returns. See, e.g., Pástor, Stambaugh and Taylor (2021) on sustainable investing in equilibrium and Pedersen, Fitzgibbons and Pomorski (2021) on the ESG-efficient frontier.

it starkly illustrates how modern economic or technological systems can impose severe negative externalities, thereby heightening the salience of prosocial considerations. Third, it leaves lasting, tangible consequences for affected households or communities, ensuring that preference shifts are persistent rather than transitory. Under these conditions, investors are directly exposed to external costs, raising the marginal utility of moral alignment.

This framework yields clear empirical predictions. Cross-sectional differences in ESG and SRI participation should reflect heterogeneity in θ, not only variation in expectations about risk-adjusted returns. At the individual level, shocks that heighten the salience of moral concerns – such as environmental disasters or major social movements – should increase effective demand for high-m assets, shifting portfolios toward prosocial exposures.

III Natural Field Experiment: Chernobyl Disaster

A The Chernobyl Nuclear Reactor Explosion

On April 26, 1986, at 1:23 AM GMT+3, one of the reactors at the Chernobyl nuclear power plant in then-Soviet Union exploded during a systems test. The ensuing fire released an estimated 6.7 tons of radioactive particles into the atmosphere. The Soviet Union did not initially disclose the accident, and the first evidence of significant fallout outside its borders came two days later when engineers at Sweden's Forsmark nuclear power plant, located about 60 miles north of Stockholm and more than 650 miles from Chernobyl, detected elevated radioactivity levels on their shoes. Initially, the discovery prompted evacuations at Forsmark and speculation in Swedish media about a possible domestic leak before the true source was identified.

B Meteorological Conditions and Exogenous Geographical Fallout Variation

Prevailing wind and precipitation patterns at the time of the explosion carried the radioactive plume over parts of the western Soviet Union and northern Europe, depositing particles over an estimated 62,500 square miles (e.g., United Nations Scientific Committee on the Effects of Atomic Radiation (2000)). Figure 1 shows snapshots of the spread of radioactivity. In the days following the explosion, the plume collided with a cold front over northern Europe. Rainfall during this period

caused substantial deposition of Chernobyl fallout in some regions of Sweden but not others (e.g., Holmberg, Edvarson and Finck (1988)). Although measurable levels of radioactivity were detected throughout the northern hemisphere, Sweden was the most severely affected country outside the Soviet Union, absorbing roughly 5% of total emissions. The spatial pattern of contamination was determined almost entirely by local precipitation in the immediate aftermath of the accident. One case study of the second largest city in Sweden shows that 99% of the radionuclides that reached the ground were caused by rainfall.

C Fallout Exposure: Measurement, Classification, and Salience

C.1 Measurement

The *Swedish Radiation Protection Authority* conducted systematic ground-based and aerial measurements of radioactive fallout after the Chernobyl incident, using standardized protocols that were internationally validated through collaborations with the *International Atomic Energy Agency*. Fallout levels are expressed in kilobecquerels per square meter (kBq/m^2), a standard measure of radioactive activity per unit of surface area. Measurements were taken in the months immediately following the accident and confirmed in subsequent monitoring campaigns, implying that our classification is based on stable, persistent contamination patterns. A regression of population-weighted county-level Caesium-137 (Cs-137), a long-lived radionuclide with a half-life of 31.2 years, deposition on a constant, precipitation, and precipitation squared yields an R^2 of 0.77, indicating that variation in rain intensity in the immediate aftermath of the incident explains most of the highly uneven geographic distribution of fallout in Sweden (e.g., Hohenemser (1988)).

C.2 Classification

Figure 2 (left) shows the geographical variation in fallout in Sweden. The most affected regions experienced levels comparable to those just outside the exclusion zone around Chernobyl: ten times the background levels and exceeding the international threshold for being classified as "contaminated." By contrast, other regions of Sweden were essentially unaffected.

We classify Swedish municipalities into three mutually exclusive and collectively exhaustive groups based on deposition. The classification balances two considerations: (i) preserving the stark

variation in exposure across regions, and (ii) ensuring sufficient statistical power for subsequent analysis. At one extreme are the municipalities of Gävle and Sundsvall, along with six contiguous municipalities, which recorded the highest levels of ground deposition.[6] At the other extreme are the municipalities in the counties of Norrbotten, Stockholm, Värmland, and Örebro, which registered the lowest measurements based on a rank order of all municipalities.

C.3 Salience

Archival data confirm that information about the geographical variation in Chernobyl fallout was readily available among the Swedish public. We have examined newspaper article data from the National Library of Sweden, which maintains digitized copies of each published local newspaper, and circulation data from *Tidningsstatistik*, the Swedish member of the *International Federation of Audit Bureaux of Circulations*. The most affected regions exhibited persistently higher frequencies of Chernobyl-related articles in local newspapers even 5, 10, and 20 years after the accident. For example, 20 years post-Chernobyl, the ratio of Chernobyl articles in the most affected regions to the least affected regions was 2.7-to-1. Archival evidence also documents persistent public engagement with the issue through local government advisories, school-based information campaigns, and health authority communications, which reinforced awareness of contamination risk long after the event. Archival records also show adverse local consequences, including heightened concerns over dietary intake and local sourcing of vegetables and berries, wild game, and carnivorous fish.

IV Data and Empirical Methodology

A Data Sources and Sample Construction

Our empirical analysis leverages a rich, register-based dataset from *Statistics Sweden*, the national statistical agency responsible for official Swedish statistics. The key advantage of this source is its ability to link individuals across multiple administrative registers using Sweden's unique personal identification number (*personnummer*). This enables us to construct a high-quality panel that captures demographic characteristics, residence, and portfolio holdings with virtually no reporting

[6]The municipalities are: Heby, Gävle, Härnösand, Kramfors, Sollefteå, Sundsvall, Timrå, and Älkarleby.

error. To ensure that our sample reflects an economically meaningful and comparable investing population, Statistics Sweden drew a random sample of adult residents who were born *prior to* the Chernobyl accident in April 1986, in order to avoid potential contamination from post-treatment entrant. The sampling frame is representative along key demographic dimensions.

We match this individual-level panel to the *Swedish Tax Authority*'s wealth records for the entire period 1999–2007, the full span for which holdings are available prior to the repeal of Sweden's wealth tax. Under this tax regime, all financial institutions were legally required to report end-of-year portfolio holdings for every taxable individual. The data therefore cover the near-universe of listed equity, mutual funds, bonds, and other taxable financial assets at the individual level. Holdings are reported by security identifier, quantity, and market value, and are classified by instrument type and issuer. These features make the data well suited for analyzing both discrete investment choices (e.g., fund selection) and portfolio-level tilts toward socially responsible investing.

Each reported security is further matched to detailed issuer- and fund-level characteristics obtained from *Standard & Poor's Capital IQ* and *Morningstar*. These sources provide information on environmental, social, and governance attributes, socially responsible investing classifications, and "sin" industry flags, allowing us to construct values-based investment measures consistent with modern ESG and SRI definitions. The matched dataset captures essentially all investment vehicles available to Swedish retail investors during the sample period.[7]

Two features of the Swedish context are worth highlighting. First, the administrative nature of the data minimizes measurement error: holdings are reported by institutions, not self-reported, reducing concerns about recall or social-desirability bias. Second, the personal identification number allows seamless merging of portfolio data to regional residence, birth region, and socio-demographic registers, enabling us to control finely for both individual and contextual factors.

B Dependent Variable: Values-Based Investment Measures

A central challenge in this study is that moral sentiments are inherently latent: they are non-pecuniary preferences defined over ethical or prosocial attributes, and thus cannot be observed

[7]Equity market participation in Sweden during this period was high by international standards. Approximately 91% of individuals in our sample hold at least one taxable financial asset, reflecting long-standing tax incentives (e.g., the *Allemansfonder*, or "People's Mutual Funds," program introduced in 1984) and the partial privatization of the public pension system in 2000 (e.g., Cronqvist and Thaler (2004)).

directly. As a result, measurement error and construct validity are primary concerns. Self-reported surveys of attitudes toward social responsibility are problematic in this domain: they are vulnerable to social desirability bias, hypothetical framing effects, and poor alignment with actual behavior, especially when the subject carries reputational or moral overtones. For these reasons, we focus exclusively on revealed preference measures that are grounded in real economic stakes.

Our core insight is that portfolio allocation decisions—when investors choose between functionally similar assets that differ primarily in their social or ethical attributes—provide a natural laboratory for observing moral preferences. In particular, the SRI and ESG segments of the Swedish retail fund market during our sample period offer repeated, salient choices: investors could select mutual funds or investment products that were virtually identical in risk, liquidity, and return objectives but explicitly branded as socially responsible or conventional. The marginal cost of choosing the SRI version was therefore almost entirely non-pecuniary, allowing us to interpret such selections as evidence of moral or values-based utility. This approach aligns with a growing finance literature that treats values-congruent allocations as behavioral expressions of non-pecuniary tastes (e.g., Hong and Kacperczyk (2009) and Hong and Kostovetsky (2012)).

We implement two complementary measures of values-based investing behavior, both grounded in revealed preference and designed to isolate the moral sentiment dimension of investment choice.

(i) Choice-based indicator (ordinal). We construct an individual-level outcome that summarizes revealed preferences toward socially responsible investing (SRI). Specifically, we code the variable as $+1$ (*Positive Tilt*) if an individual allocates any portion of the portfolio to an SRI mutual fund, -1 (*Negative Tilt*) if the individual holds positions in "sin" stocks, and 0 (*Neutral Tilt*) otherwise. That is, positive values capture a tilt toward values-based investing, negative values captures a tilt away, and zero reflects a neutral tilt. This ordinal outcome serves as the dependent variable in our ordered–logit specifications.

(ii) Portfolio-level tilt (continuous). As a continuous analog to the ordinal outcome, we construct a measure of each investor's net portfolio tilt toward socially responsible funds versus "sin" stocks. Specifically, let w_{it} denote the vector of portfolio weights for investor i in year t, and let m be an indicator vector that equals $+1$ for SRI funds, -1 for sin stocks, and 0 otherwise. We

then define

$$\text{SRI Tilt}_{it} = w_{it}^{\top} m,$$

which represents the portfolio share invested in SRI funds minus the share invested in sin stocks. Positive values therefore indicate that an investor is tilted toward values-based allocations, negative values indicate a tilt toward sin stocks, and zero corresponds to a neutral stance. This measure complements the ordinal indicator by capturing the intensity of values-based positioning rather than just the direction. Because it is grounded in portfolio weights from administrative tax data, it reflects the economic magnitude of revealed preferences with monetary stakes.

V Empirical Results

A Summary Statistics

Table 1 presents summary statistics for the register-based dataset underlying our analysis. The sample comprises 39,508 distinct investors and is broadly representative of the active investing population in Sweden. Variable definitions appear in Appendix A.

Several patterns merit emphasis. First, the demographic profile is balanced and informative: 49% of investors are female, and the mean age is 47, placing the typical participant in mid-life and plausibly in the prime wealth-accumulation phase. Education levels are high, with 56% holding a college degree, and 43% are married, suggesting variation in household composition. Second, the economic scope of the sample is substantial. Average annual income is SEK 249,000, and mean net worth is SEK 766,500, indicating meaningful financial capacity to invest and diversify. Importantly, the dispersion in these variables is wide, ensuring statistical power to analyze heterogeneity across demographic and socioeconomic groups. Overall, the dataset provides a rich and credible platform for investigating the intersection of moral sentiments and portfolio choice.

B Descriptive Evidence

Before turning to multivariate tests, we begin with the simplest cut of the data: plotting subsequent values-based investing against the intensity of the Chernobyl experience. Figure 3 summarizes the central finding of the paper. The gray bars (left axis) display measured fallout levels across the

most and least affected regions, which serve as a proxy for the salience of the accident in daily life—school closures, food advisories, testing of water and soil, and other persistent reminders of societal vulnerability. The green bars (right axis) report the corresponding share of individuals selecting a socially responsible investment option during the sample period.

Two inferences emerge immediately. First, the more intense the lived experience of Chernobyl, the greater the subsequent demand for values-based investment. Second, the effect is economically substantial: investors residing in the most heavily affected regions exhibit, on average, roughly twice the SRI tilt of those in the least affected regions.

These are unconditional patterns – they do not adjust for demographics, education, wealth, or local economic conditions – but they suggest that a salient, non-financial shock can leave a durable imprint on financial behavior. The clarity of the gradient and its economic magnitude make it unlikely that the patterns are driven by sampling noise or sorting. We view this as the key "reduced-form fact" that motivates the richer specifications and robustness checks that follow.

C Controlling for Regional Heterogeneity

C.1 Region Characteristics and Fixed Effects

Regional heterogeneity is an obvious potential confound. Different parts of Sweden vary in industrial base, demographic composition, and socioeconomic conditions, any of which could correlate with values-based investing. To address this, we estimate a specification that absorbs persistent cross-sectional differences and also controls for time-varying shocks at local levels. We therefore employ an ordered–logit model for SRI tilt. More specifically, let

$$\mathrm{SRI}_{irt} \in \{-1, 0, 1\}$$

denote investor i's discrete portfolio orientation in region r and year t: -1 if the investor tilts away from socially responsible investments, 0 if neutral, and 1 if tilting toward SRI. We assume this

observed outcome reflects an unobserved latent index SRI^*_{irt}, partitioned by cut-points:

$$\text{SRI}_{irt} = j \iff \tau_{j-1} < \text{SRI}^*_{irt} \leq \tau_j, \qquad j \in \{-1, 0, 1\},\ \tau_{-2} \equiv -\infty,\ \tau_1 \equiv +\infty, \tag{9}$$

$$\text{SRI}^*_{irt} = \alpha + \beta\, \textit{Chernobyl}_r + \delta_t + \zeta_{g(r)} + X'_{rt}\Theta + \varepsilon_{irt}, \qquad \varepsilon_{irt} \sim \text{Logistic}(0, 1), \tag{10}$$

where $\textit{Chernobyl}_r$ is an indicator for the regions most affected by Chernobyl, δ_t are year fixed effects capturing macroeconomic and market-wide shocks, $\zeta_{g(r)}$ are region fixed effects absorbing persistent unobservables across geographic areas, and X_{rt} is a vector of time-varying regional controls (e.g., growth, unemployment, urbanization). The thresholds $\{\tau_{-1}, \tau_0\}$ are estimated with the model. The implied cumulative probabilities are:

$$\Pr\big(\text{SRI}_{irt} \leq j \,\big|\, \cdot\,\big) = \Lambda\big(\tau_j - \alpha - \beta\, \textit{Chernobyl}_r - \delta_t - \zeta_{g(r)} - X'_{rt}\Theta\big)\,, \qquad j \in \{-1, 0\}, \tag{11}$$

where $\Lambda(\cdot)$ is the logistic CDF. Under the proportional-odds assumption, $\beta > 0$ shifts the latent index upward, decreasing $\Pr(\text{SRI}_{irt} \leq j)$ and increasing the likelihood of tilting toward SRI. Standard errors are White (1980) heteroskedasticity-robust and clustered at the regional level to allow for arbitrary correlation within regions over time.

This specification serves two purposes. First, the region fixed effects strip out any persistent differences across regions that could bias inference. Second, the time-varying regional controls guard against omitted shocks, such as local economic booms or downturns, that could independently affect portfolio behavior. Together, they sharply limit the risk that β captures spurious correlation rather than the imprint of the Chernobyl experience.

Panel A of Table 2 demonstrates that the main effect is robust: the estimated β ranges from 1.17 to 1.24 and is statistically significant at the 1% level, with magnitudes implying economically meaningful shifts toward SRI.[8] Substantively, individuals with salient Chernobyl exposure are approximately 20% more likely, all else equal, to allocate to ESG funds and avoid sin stocks.

[8] Results are consistent across alternative functional forms. Ordered–logit and ordered–probit estimates are similar in magnitude and significance, and replication with a linear probability model confirms robustness to distributional assumptions.

We also estimate a continuous variables model:

$$\text{SRI Tilt}_{irt} = \alpha + \beta\, \textit{Chernobyl}_r + \delta_t + \zeta_{g(r)} + X'_{rt}\Theta + \varepsilon_{irt}, \tag{12}$$

where $\textit{Chernobyl}_r$ is an indicator for the regions most affected by Chernobyl; δ_t are year fixed effects; $\zeta_{g(r)}$ are region fixed effects; and X_{rt} are time-varying regional controls.

Panel B presents the estimates. The coefficient of interest, β, is economically meaningful and statistically significant, indicating that the link between the Chernobyl experience and later values-based investing is not an artifact of regional socioeconomic composition or unobserved macro trends. Consistent with the raw patterns, the coefficient implies that individuals in the most affected regions exhibit roughly twice the allocation to values-based investments. By accounting for both persistent and transitory regional heterogeneity, the analysis shows that the estimated effect is not driven by pre-existing differences across Swedish counties but reflects variation in the lived experience of a salient societal shock.

C.2 Residential Sorting and Regional Selection Effects

A natural concern is that our findings could reflect *who* lives where rather than *what* they experienced. Individuals choose where to live based on a variety of factors, including employment opportunities, family ties, climate, or lifestyle preferences. Some of these, such as a taste for outdoor activities or a strong affinity for natural amenities, could plausibly correlate with pro-environmental attitudes or socially responsible investing. If the regions later receiving heavier fallout happened, by chance, to be those preferred by individuals with stronger ESG-oriented preferences, our estimates could conflate pre-existing tastes with the imprint of the Chernobyl shock.

We address this concern in two ways. First, we emphasize that the geographic distribution of fallout was a byproduct of *unexpected* short-lived, variation in precipitation. The radioactive plume interacted with a cold front and sporadic rainfall during the ten days following the explosion, producing sharp, highly localized variation in deposition. Using data from 94 weather stations across Sweden from the *U.S. National Climatic Data Center*, we confirm that precipitation in this window was uncorrelated with both rainfall patterns during the remainder of 1986 and long-run

regional averages. This orthogonality implies that fallout intensity across regions was as-good-as-random with respect to enduring climate and amenity characteristics, sharply reducing the scope for sorting to drive our results.

Second, we directly control for observable features that might proxy for lifestyle-based sorting. Table 3 augments the baseline model with indicator variables for regions in the top quartile of natural amenities, specifically lake-dense regions, forest-dense regions, and mountain-dense regions. These measures capture whether investors self-select into areas with abundant natural resources and outdoor amenities that may correlate with pro-environmental values. The estimated *Chernobyl* coefficient remains economically and statistically robust at 1.16 to 1.23 when these controls are included. These tests support the interpretation that our results are not driven by investors selectively clustering in "green" regions that happened, by chance, to be more affected by Chernobyl.

D Portfolio Risk Characteristics: Value versus Values

A critical alternative explanation is that our results could simply reflect differences in risk-taking rather than preferences.[9] If investors in the most affected regions systematically held portfolios with distinct risk–return profiles, or if ESG funds in our sample were materially different in risk characteristics, then the estimated *Chernobyl* coefficient could be capturing variation in risk appetite rather than a shift in values. We therefore ask whether the observed relation survives once we explicitly measure and control for portfolio risk exposures.

To do so, we incorporate standard risk measures at the investor–year level. Using asset-level holdings matched to *Standard & Poor's Capital IQ* and *Morningstar*, we compute each portfolio's market risk exposure and idiosyncratic volatility. We also control for two widely used valuation metrics – price-to-earnings (P/E) and price-to-book (P/B) ratios – that proxy for style and value–growth orientation. Together, these variables flexibly capture systematic differences in portfolio risk, volatility, and valuation tilts that could correlate with ESG allocations.

Table 4 shows that adding these controls leaves our main result unchanged. The *Chernobyl* coefficient remains positive, economically meaningful, and statistically precise; the point estimate

[9]Related research documents that individual risk preferences are shaped by formative experiences and macro shocks. For example, Malmendier and Nagel (2011, 2016) show that Depression-era and inflation experiences affect portfolio risk-taking, Brunnermeier and Nagel (2008) examine wealth fluctuations and risk aversion, and Guiso, Sapienza and Zingales (2018) highlight the roles of experiencing a financial crisis for risk in household portfolios.

moves little relative to the baseline model. This stability indicates that the effect is not driven by differences in risk tolerance, volatility exposure, or style tilts that often accompany ESG strategies. Instead, the evidence supports a preference-based interpretation: the Chernobyl experience appears to have shifted *what* investors care about, introducing moral sentiment as an additional dimension of portfolio choice rather than altering how they balance risk and return.

E Controlling for Individual Characteristics

A critical challenge in any study linking geography to behavior is separating *where* people live from *who* they are. If certain types of individuals – for example, by gender, age, education, or wealth – are more likely both to reside in specific regions and to invest according to values, observed geographic patterns could reflect compositional differences rather than an imprint of the shock. To address this, we augment our baseline model to include an extensive set of individual characteristics:

$$\text{SRI Tilt}_{irt} = \alpha + \beta\, \mathit{Chernobyl}_r + \delta_t + \zeta_{g(r)} + X'_{rt}\Theta + Z'_{it}\Phi + \varepsilon_{irt}, \tag{13}$$

where Z_{it} is a vector of time-varying characteristics for individual i (e.g., demographics and socioeconomic status). Robust standard errors are clustered at the region and individual levels to allow for arbitrary correlations within each group.

Table 5 adds two demographic characteristics that plausibly shape investment values but are fixed prior to the accident: gender and age. Both variables show economically and statistically meaningful associations with values-based investing. Women tilt more strongly toward socially responsible options, consistent with a large literature showing that female investors display greater pro-social and ESG-oriented preferences. Younger investors also exhibit a modest but statistically significant tilt toward SRI, consistent with generational differences in attitudes toward sustainability and corporate responsibility. Crucially, the main coefficient of interest, β, remains stable across these models, at roughly 1.21 to 1.24. This stability indicates that demographic composition is not driving our core finding.

Table 6 expands the specification to include richer socioeconomic characteristics: marital status, college education, annual income, and net worth. College-educated investors are significantly more

likely to allocate to SRI options, suggesting that financial literacy and exposure to broader social narratives may reinforce values-based behavior. Wealth and income show weaker but sensible associations, reflecting greater opportunity to diversify and experiment. Most importantly, however, the estimated *Chernobyl* effect not only remains robust at about 1.24 in the fully saturated specification. This reinforces the interpretation that the shock is not simply picking up younger, more educated, or wealthier households, but is capturing an imprint of the lived Chernobyl experience on long-term portfolio behavior.

F Individual Health Status Effects

A first-order concern is that the Chernobyl shock could have influenced portfolio behavior through health rather than preferences. Regions with heavier fallout were subject to sustained public debate about radiation-induced illnesses, and the question of elevated long-run morbidity has remained contested for decades.[10] Consistent with this concern, Almond, Edlund and Palme (2009) show that in utero exposure to Chernobyl in Sweden had adverse effects on subsequent health and educational outcomes. Since our sample explicitly excludes individuals born in 1986, we abstract from this fetal-exposure channel and instead focus on adult investors' lived experience of fallout. Nonetheless, if exposure affected physical or psychological health, and if health shapes risk-taking or portfolio choice, our estimates could be confounded. Indeed, prior research links poor health to more conservative asset allocations (e.g., Rosen and Wu (2004) and Love and Smith (2010)).

To test this channel directly, we exploit administrative records from Sweden's *National Board of Health and Welfare*, which track sickness-related insurance payments. We construct two complementary measures: (i) a binary poor health status indicator equal to one if an individual received any sickness benefits, and (ii) a continuous measure of total insurance payments. While the binary variable captures the presence of significant health conditions, the continuous measure provides finer variation in health severity. We acknowledge that the most severe impairments may have led to attrition from the investing population and thus from our dataset.

Table 7 reports three key results. First, both health measures are economically small and statistically insignificant, indicating that neither the incidence nor intensity of poor health is sys-

[10] For example, an editorial in *The Lancet* concluded that evidence on Chernobyl's health legacy remained contradictory and often inconclusive (e.g., Holt (2010)).

tematically correlated with values-based investing. Second, including these measures leaves the estimated *Chernobyl* effect virtually unchanged. Third, this stability reinforces that our core result is not an artifact of differential health outcomes. Instead, the evidence points to a values-based channel rather than one rooted in health-induced changes in portfolio behavior.

G Endogenous Migration: Stayers versus Movers

Birth-region data provide a powerful way to probe mechanisms and strengthen identification. Even if current residence is plausibly exogenous with respect to fallout exposure, investors may still carry cultural, social, or values-based traits from their region of origin that influence portfolio choice. To address this, we estimate specifications with birth-region fixed effects, effectively comparing individuals with the same geographic origins but differing in later-life fallout exposure. Panel A of Table 8 shows that the results are both quantitatively and qualitatively unchanged. This reduces concerns that our findings simply reflect persistent regional traits – such as pre-existing attitudes toward nature, nuclear energy, or risk tolerance – rather than the salience of the shock itself.

A second concern is endogenous migration. If individuals systematically relocated after the accident—for instance, if those with stronger environmental or prosocial preferences disproportionately moved out of the most contaminated areas—our estimates could conflate selection with treatment. Figure 4 addresses this possibility directly by examining relocation patterns before and after Chernobyl. The data show no evidence of significant out-migration from highly affected regions, nor of selective inflows. Combined with the stability of our main results, this evidence mitigates sorting as a first-order driver of our findings.

Finally, birth-region information enables a more nuanced test of the salience mechanism by distinguishing "stayers" – individuals born in the most affected regions who continue to reside there – from those who moved. Roughly 56% of our sample still live in their birth region, consistent with deep family and community ties. Panel B of Table 8 reveals a clear gradient: the Chernobyl effect is strongest among stayers, while statistically insignificant among movers. This asymmetry is precisely what one would expect if place-based attachments amplify the salience of formative shocks, embedding them more deeply into preference formation. In sum, the moral-sentiment channel we document is not simply geographic but reflects the enduring imprint of lived experience, with those

most rooted in affected communities exhibiting the most persistent legacy effects.

H Ex Ante Nuclear Preferences Before Chernobyl

A central identification concern is that the regions later most affected by fallout might already have been systematically different in their environmental or pro-social orientations. If those regions were, for example, more skeptical of nuclear power or more socially conscious prior to 1986, then our results could reflect persistent cultural heterogeneity rather than the imprint of the Chernobyl shock itself. Demonstrating the absence of such pre-treatment differences is therefore critical to our empirical strategy.

We address this possibility using two independent sources of evidence. The first is Sweden's national referendum on nuclear energy held in 1980, six years before Chernobyl.[11] Triggered by the 1979 Three Mile Island accident in the U.S., the referendum asked voters to choose among three options: "Proposition 1" (pro-nuclear), "Proposition 2" (intermediate), and "Proposition 3" (anti-nuclear). Turnout was high (75.6%), and the *Election Authority of Sweden* reports results by municipality, providing a granular pre-treatment snapshot of nuclear attitudes across the country. Figure 5 shows the referendum outcomes for municipalities in the regions that would later experience the highest versus lowest fallout. The distributions are statistically indistinguishable, indicating that the areas most severely contaminated by Chernobyl were not already more anti-nuclear or environmentally activist before the disaster. Table 9 complements this by formally controlling for referendum vote shares in our baseline specification, showing that the estimated *Chernobyl* coefficient remains virtually unchanged.

Second, we turn to political support for the Green Party in the early 1980s (1982–1986). Founded in 1981 with roots in environmental and anti-nuclear movements, the Green Party offers a second, independent measure of baseline environmental preferences. Consistent with intuition, regions with higher early Green Party support show somewhat stronger later participation in socially responsible investing. Crucially, however, controlling for Green Party vote shares leaves the estimated *Chernobyl* coefficient virtually unchanged. Thus, the differential ESG tilts we observe cannot be attributed to pre-existing ideological or environmental leanings.

[11] National referendums are extremely rare in Sweden, with only five held during the entire 20th century.

VI Conclusion and Discussion

Our results highlight how lived experience can leave a lasting imprint on financial decision-making. The Chernobyl disaster was not a financial event, yet for those directly exposed to its community-level disruptions it reweighted the calculus of portfolio choice, making values as consequential as risk and return. In doing so, the evidence underscores a broader lesson: investor heterogeneity is not only about beliefs or risk preferences, but also about the moral salience of past experiences. Recognizing this channel matters because shocks that recalibrate the weight of non-pecuniary motives can generate persistent demand for values-aligned securities, shift the distribution of capital, and ultimately reshape how markets aggregate preferences. Rather than fading with time, such preference legacies may constitute a durable layer of heterogeneity—one that standard models overlook but that remains integral to understanding real-world investing behavior.

The results invite a broader interpretation of how shocks shape financial behavior. Chernobyl is not only a case of lived experience trumping abstract information; it also demonstrates the power of episodic memory to embed vivid events in decision-making, and it illustrates how those events can evolve into durable preference legacies. By bringing these strands together, our study suggests that financial behavior is shaped by an interplay of informational channels, cognitive encoding, and enduring preference shifts—an interplay that is often invisible to standard models.

Information versus lived experience. Traditional information economics has emphasized the content of signals while downplaying the mode of reception. Psychology, by contrast, shows that firsthand experience is concrete, affective, and salient, and thus more heavily weighted in decision-making than abstract information (e.g., Simonsohn, Karlsson, Loewenstein and Ariely (2008)). Even when individuals share identical informational sets, those who have lived through a shock tend to overweight the consequences of that experience in subsequent choices. Our findings are consistent with this mechanism: while all Swedes were informed about Chernobyl, only those who directly faced its local disruptions exhibited a durable shift toward values-based investing. This aligns with a broader body of work on experience-driven behavior (see, e.g., Malmendier (2018)), and complements prior findings on macroeconomic shocks and financial decisions. Our contribution is to highlight that non-financial societal shocks can shape portfolio choices, specifically through

the moral-sentiment channel.

Episodic memory. One mechanism that helps account for these persistent effects is episodic memory: the encoding of personally experienced events in a particular time and place (e.g., Tulving (1972)). Traumatic or disruptive episodes are emotionally vivid, unusually durable, and strongly self-referential, making them especially influential in shaping future behavior. Episodic memory is also forward-looking: individuals often project future states by recombining vivid past experiences, a process known as the "constructive episodic simulation hypothesis" (e.g., Schacter and Addis (2007)). If investors' portfolio allocations are guided not only by rational updating but also by the accessibility of past salient episodes, then shocks like Chernobyl can alter their weighting of moral versus pecuniary motives. This interpretation dovetails with recent research in finance and economics showing that memory shapes subjective probabilities and choice (e.g., Bordalo, Gennaioli and Shleifer (2020) and Gödker, Jiao and Smeets (2025)), and provides a direct cognitive channel for the persistence we document.

Preference legacy effects. More broadly, our findings underscore that large-scale societal shocks can leave enduring preference legacies. Outside the exclusion zone, Chernobyl's direct impact on health and economic activity was moderate, yet we document a lasting reweighting of utility toward moral considerations in financial choice. In our framework, this is a shift in the moral-sentiment parameter, with history acting on objective functions rather than constraints. This insight resonates with a growing literature showing that formative shocks can shape deep preference primitives, including risk aversion, patience, altruism, and trust (e.g., Alesina and Fuchs-Schündeln (2007), Nunn and Wantchekon (2011), and Callen, Isaqzadeh, Long and Sprenger (2014)). By documenting a durable imprint on portfolio choice, our study situates this phenomenon within financial decision-making, where preference shifts directly affect the allocation of capital.

Although our evidence comes from one environmental disaster in one national setting, the broader implication is clear: salient exposure to societal disruptions can durably reshape economic preferences, generating heterogeneity in the weight individuals place on non-pecuniary motives. Understanding these preference legacies, and how they propagate into markets, remains a fertile direction for future research.

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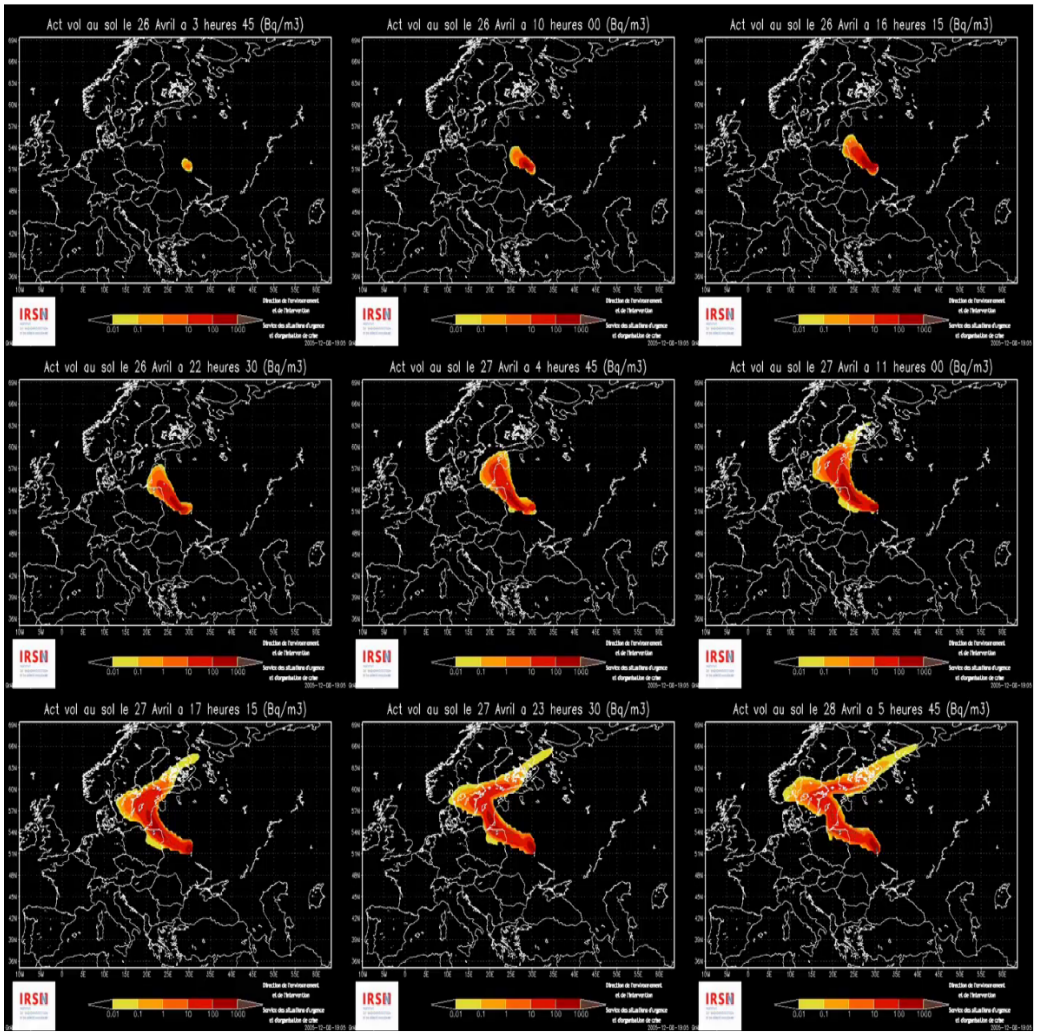
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Appendix A: Definitions of Variables

Variable	Definition
Panel A: Dependept Variables	
Positive SRI Tilt	Indicator variable that equals 1 if individual invests in socially responsible mutual fund, and 0 otherwise.
Negative SRI Tilt	Indicator variable that equals -1 if individual in "sin" stocks, and 0 otherwise.
SRI Tilt	Individual's net percentage SRI tilt.
Panel B: Individual Characteristics	
Gender	Indicator variable that equals 1 if individual is female, and 0 otherwise.
Age	Individual's age in years.
College	Indicator variable that equals 1 if individual has attended college, and 0 otherwise.
High School	Indicator variable that equals 1 if individual has completed high school but not college, and 0 otherwise.
Married	Indicator variable that equals 1 if individual is married, and 0 otherwise.
Income	Individual's income from working, i.e., sum of income from labor and business (in 1,000s of Swedish krona).
Net Worth	Difference between end-of-year values of an individual's assets and liabilities (in 1,000s of Swedish krona).
Poor Health Status	Indicator variable that equals 1 if individual receives health-related insurance payments, and 0 otherwise.
Panel C: Risk and Style Characteristics	
Market Risk	Value-weighted market beta of individual's portfolio.
Idiosyncratic Volatility	Value-weidhtd idiosyncratic volatility of individual's portfolio.
Price-to-Earnings Ratio	Value-weighted price-to-earnings (P/E) ratio of individual's stock holdings.
Price-to-Book Ratio	Value-weighted price-to-book value (P/B) ratio of individual's stock holdings.
Panel D: Regional Characteristics	
Growth	Percentage population growth in county in year.
Unemployment	Percentage of individuals (age 20-64 years) registered as unemployed in county in year.
Urbanity Index	Indicator variable that equals 2 if municipality is urban, 1 if municipality is suburban, and 0 otherwise.
Lake-Dense Region	Indicator variable that equals 1 if county is in top quartile in percentage lake/water areas, and 0 otherwise.
Forest-Dense Region	Indicator variable that equals 1 if county is in top quartile in percentage forest area, and 0 otherwise.
Mountain-Dense Region	Indicator variable that equals 1 if county is in top quartile in percentage mountain area, and 0 otherwise.
Pro-Nuclear Vote Share	Percentage voters in municipality who chose "Proposition 1" (most pro-nuclear energy) in 1980 referendum.
Anti-Nuclear Vote Share	Percentage voters in municipality who chose "Proposition 3" (anti-nuclear energy) in 1980 referendum.

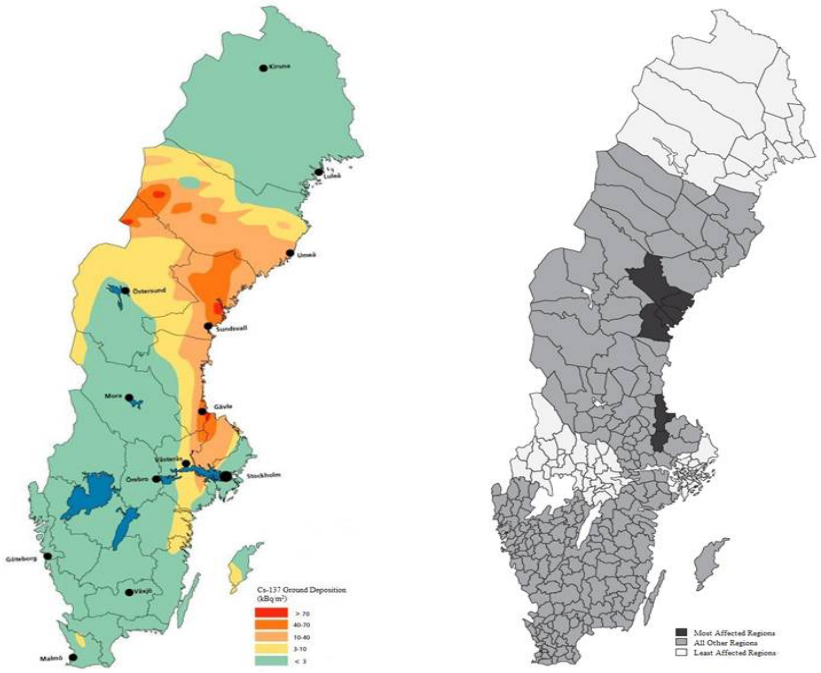
The register-based data are from *Statistics Sweden* and linked to individual-level panel data from the *Swedish Tax Authority*. The data on portfolio characteristics are from *Standard & Poor's Capital IQ* and *Morningstar*.

Figure 1: Snapshots of Spread of Chernobyl Nuclear Plume



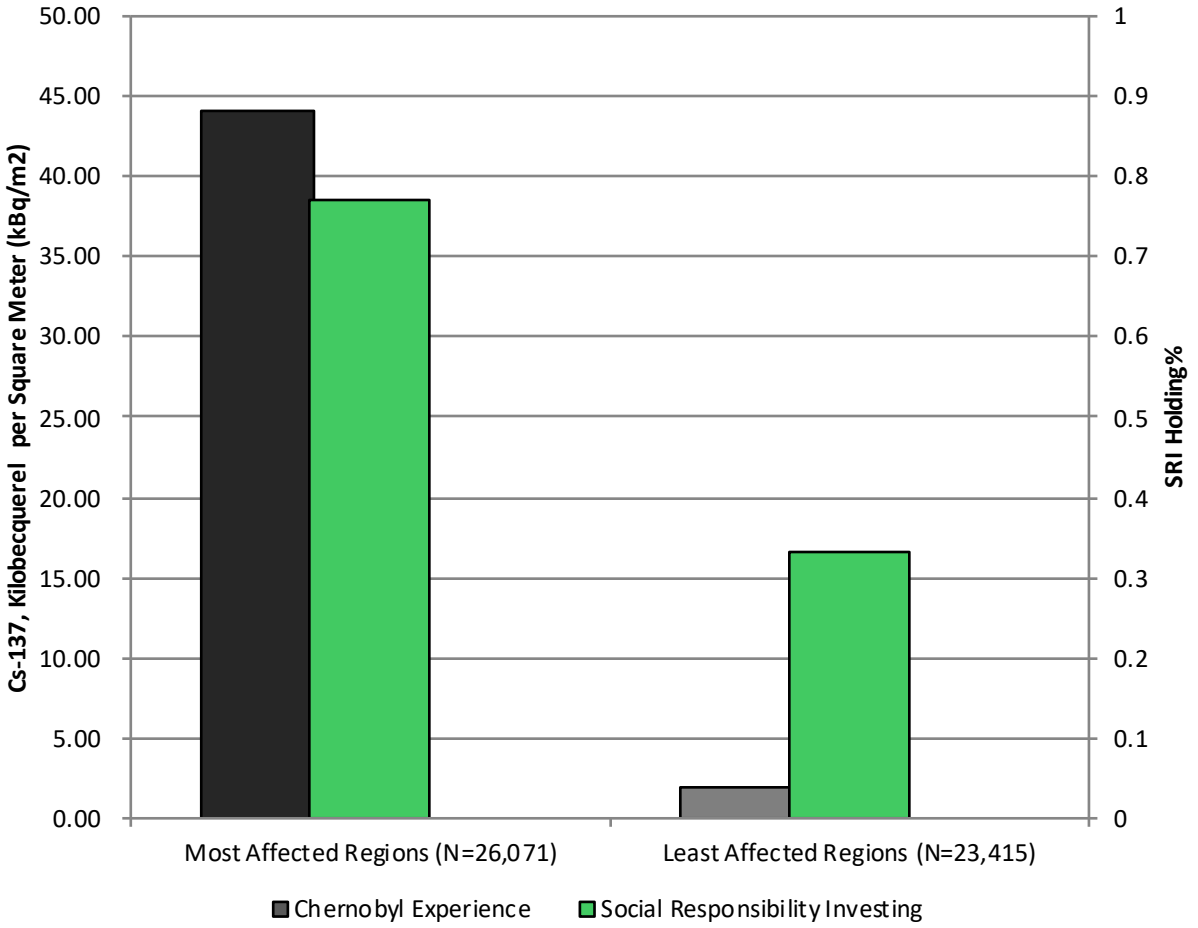
The figure reports the spread of the Chernobyl nuclear plume in the days after the accident.

Figure 2: Geographical Variation in Chernobyl Fallout in Sweden



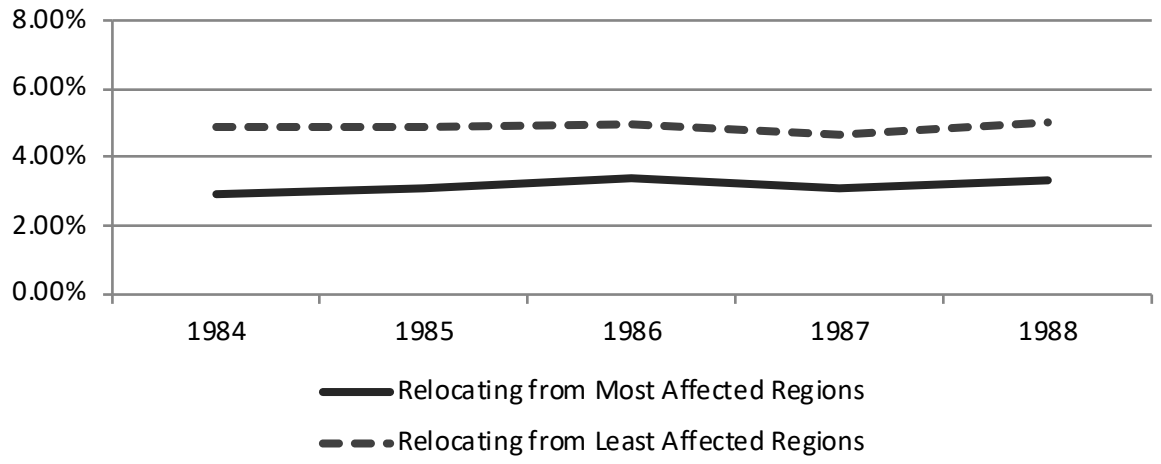
The figure reports ground deposition of Chernobyl fallout based on measurements from the *Swedish Radiation Protection Agency* (left). Classification of Swedish municipalities from the most affected (darkest gray) regions to the least affected (lightest gray) regions (right).

Figure 3: Chernobyl Experience and SRI Tilt Later in Life



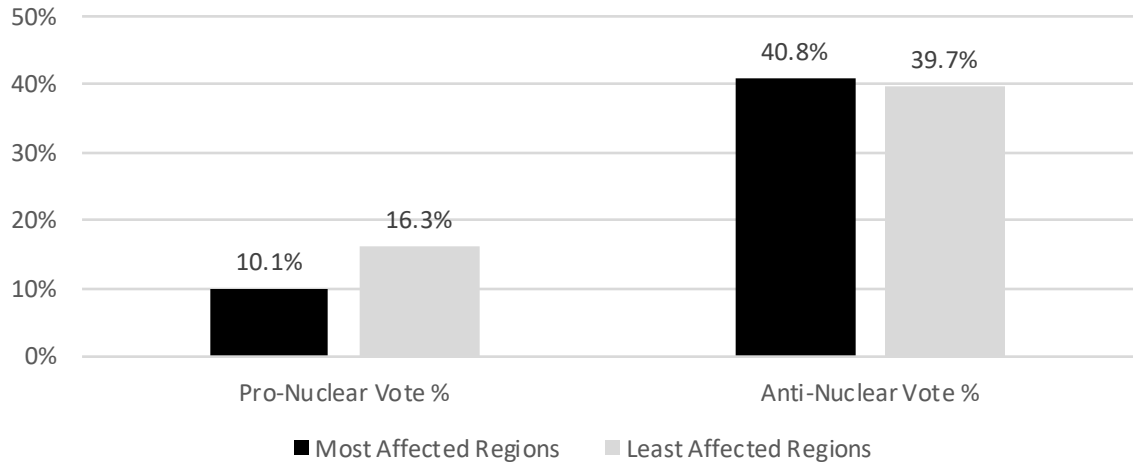
The figure reports the relation between Chernobyl experience and SRI Tilt later in life. The gray bars correspond to the most and least affected regions, respectively, and show the measurements of Chernobyl fallout in 1986 (left axis). The green bars show the SRI Tilt during the 1999-2007 period (right axis).

Figure 4: Population Migration Patterns Before and After Chernobyl



The figure reports the percentage of the population relocating away from the regions most and least affected by Chernobyl.

Figure 5: Ex Ante Nuclear Preferences Prior to Chernobyl



The figure reports voting outcomes from the 1980 national referendum on nuclear energy before Chernobyl.

Table 1: Summary Statistics

Panel A: Dependent Variables				
	N	Mean	Median	Std. Dev.
Positive SRI Tilt	1,987	20.2%	25.6%	9.6%
Negative SRI Tilt	2,050	-7.6%	-1.5%	15.8%

Panel B: Individual Characteristics				
	N	Mean	Median	Std. Dev.
Gender	39,508	0.49	1	0.5
Age	39,508	47	46	18
College	39,508	56%	100%	48%
High School	39,508	29%	0%	44%
Married	39,508	43%	0%	47%
Income	39,508	249.0	223.6	162.6
Net Worth	39,508	766.5	346.3	1,208.1
Poor Health Status	39,508	10%	0%	20%

Panel C: Risk and Style Characteristics				
	N	Mean	Median	Std. Dev.
Market Risk	37,017	1.68	1.30	4.45
Idiosyncratic Volatility	37,017	35.3	22.0	134.0
Price-to-Earnings Ratio	36,008	25.7	15.9	83.0
Price-to-Book Ratio	36,232	18.9	7.8	47.5

Panel D: Regional Characteristics				
	N	Mean	Median	Std. Dev.
Growth	39,508	0.54%	0.92%	0.62%
Unemployment	39,508	13.6%	10.9%	38.7%
Urbanity Index	39,508	1.41	1.12	0.57
Lake-Dense Region	39,508	0.22	0	0.41
Forest-Dense Region	39,508	0.24	0	0.41
Mountain-Dense Region	39,508	0.24	0.25	0.27

The register-based data are from *Statistics Sweden* and linked to individual-level panel data from the *Swedish Tax Authority*. The data on portfolio characteristics are from *Standard & Poor's Capital IQ* and *Morningstar*.

Table 2: Region Characteristics and Fixed Effects

Panel A: Ordinal Measure				
Chernobyl Experience	1.21***	1.24***	1.17***	1.21***
	(0.04)	(0.06)	(0.04)	(0.07)
Regional characteristics				
Growth	1.09**			1.10**
	(0.04)			(0.04)
Unemployment		1.00		1.01
		(0.01)		(0.01)
Urbanity Index			1.09***	1.09***
			(0.01)	(0.01)
Fixed effects				
Region	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	259,822	259,822	259,822	259,822
Panel B: Continuous Measure				
Chernobyl Experience	0.71***	0.56*	0.61***	0.49*
	(0.01)	(0.23)	(0.04)	(0.22)
Regional characteristics				
Growth	0.20**			0.18*
	(0.08)			(0.08)
Unemployment		-0.05		-0.03
		(0.07)		(0.06)
Urbanity Index			0.25**	0.25**
			(0.08)	(0.08)
Fixed effects				
Region	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	259,822	259,822	259,822	259,822

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. We control for region and year fixed effects and time-varying regional characteristics. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region-level. ***, **, * means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 3: Residential Sorting and Regional Selection Effects

Chernobyl Experience	1.22***	1.18***	1.23***	1.16**
	(0.04)	(0.07)	(0.04)	(0.07)
Regional natural endowments				
Lake-Dense Region	0.49***			0.49***
	(0.03)			(0.03)
Forest-Dense Region		1.04		1.06
		(0.05)		(0.05)
Mountain-Dense Region			1.04	1.05
			(0.03)	(0.04)
Fixed effects				
Region	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
N	259,822	259,822	259,822	259,822

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. We control for region and year fixed effects and regional natural endowments measuring regional lake-, forest-, and mountain-density. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region-level. ***, **, * means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 4: Controlling for Portfolio Risk and Style: Value versus Values

Chernobyl Experience	1.24***	1.24***	1.22***	1.22***	1.24***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
Risk and style characteristics					
Market Risk	0.73***				1.66***
	(0.04)				(0.22)
Idiosyncratic Volatility		0.98***			0.97***
		(0.00)			(0.01)
Price-to-Earnings Ratio			0.99		0.98***
			(0.01)		(0.01)
Price-to-Book Ratio				0.93	0.93
				(0.07)	(0.07)
Fixed effects					
Region	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
N	215,768	215,768	203,791	208,523	185,128

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. We control for region and year fixed effects and portfolio risk and style characteristics. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region-level. ∗∗∗, ∗∗, ∗ means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 5: Controlling for Demographic Characteristics

Chernobyl Experience	1.21***	1.24***	1.23***
	(0.04)	(0.04)	(0.04)
Individual characteristics			
Gender	1.33***		1.36***
	(0.02)		(0.02)
Age		0.99***	0.99***
		(0.00)	(0.00)
Fixed effects			
Region	Yes	Yes	Yes
Year	Yes	Yes	Yes
N	259,822	259,822	259,822

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. We control for region and year fixed effects and demographic characteristics. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region-level. ***, **, * means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 6: Controlling for Socioeconomic Characteristics

Chernobyl Experience	1.24***	1.24***	1.24***	1.24***	1.24***
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Individual characteristics					
College	1.14***				1.27***
	(0.03)				(0.04)
High School	1.01				1.04
	(0.03)				(0.03)
Married		1.11***			1.09***
		(0.02)			(0.02)
Income			1.05***		1.05***
			(0.01)		(0.01)
Net Worth				0.81***	0.80***
				(0.01)	(0.01)
Gender	1.36***	1.39***	1.30***	1.37***	1.33***
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Age	0.99***	0.99***	0.99***	0.99***	1.00***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Fixed effects					
Region	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes
N	259,489	259,822	252,905	218,842	259,822

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. We control for region and year fixed effects and socioeconomic characteristics. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region-level. ∗∗∗, ∗∗, ∗ means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 7: Individual Health Status Effects

Chernobyl Experience	1.24***	1.24***
	(0.04)	(0.04)
Health status characteristics		
Poor Health Status	1.01	
	(0.03)	
Health Insurance Payments		1.00
		(0.00)
Fixed effects		
Region	Yes	Yes
Year	Yes	Yes
N	252,905	252,905

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region and individual level. ∗∗∗, ∗∗, ∗ means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 8: Migration and Origin-Based Identification

Panel A: Birth Region Fixed Effects		
Chernobyl Experience	1.46***	1.29***
	(0.09)	(0.05)
Fixed effects		
Birth Region	Yes	No
Birth Cohort	No	Yes
Region	Yes	Yes
Year	Yes	Yes
N	187,501	213,013

Panel B: Stayers versus Movers		
	Stayers	Movers
Chernobyl Experience	1.35***	0.94
	(0.06)	(0.04)
Fixed effects		
Region	Yes	Yes
Year	Yes	Yes
N	252,905	227,407

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region and individual level. ***, **, * means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.

Table 9: Ex Ante Nuclear Preferences Before Chernobyl

Chernobyl Experience	1.22***	1.23***
	(0.04)	(0.04)
1980 nuclear referendum		
Pro-Nuclear Vote Share	1.00	
	(0.00)	
Anti-Nuclear Vote Share	1.01**	
	(0.00)	
Early green party support		
Green Party Vote Share (1982-85)		1.01**
		(0.01)
Fixed effects		
Region	Yes	Yes
Year	Yes	Yes
N	247,238	251,681

The table reports ordered-logit models of values-based investing on Chernobyl experience. The dependent variable is the ordinal SRI Tilt, coded as +1 for a tilt toward socially responsible investing, -1 for a tilt away from socially responsible investing, and 0 for a neutral stance. The register-based data are from Statistics Sweden and linked to individual-level panel data from the Swedish Tax Authority for 1999-2007. The data on investment characteristics are from Standard & Poor's Capital IQ and Morningstar. See Appendix A for variable definitions. Standard errors are reported within parentheses and are White (1980) heteroskedasticity-robust and clustered at the region and individual level. ***, **, * means that the point estimate is significantly different from zero at the 1%, 5%, and 10% levels, respectively.