Selection, socialization, and risk preferences in the finance industry: Longitudinal evidence for German finance professionals

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ARTICLE INFO	ABSTRACT
	The financial sector plays a crucial role in society. Consequently, prior research has examined the preferences of professionals working in finance. However, these studies have tended to be cross-sectional and have neglected the dynamic roles played by (self-)selection and socialization. This paper uses longitudinal data from Germany to examine how individuals' financial risk preferences affect their likelihood of starting and stopping work as a finance professional. Additionally, this work studies how socialization in the finance industry affects financial risk preferences. Our results indicate that individuals who are more risk tolerant are more likely to enter the finance industry, but their risk preferences do not affect their likelihood of exiting the industry. Furthermore, socialization in the finance industry does not appear to significantly strengthen finance professionals' financial risk preferences. We conclude that the average financial risk preferences of finance professionals are mostly shaped by individuals entering the industry. As such, policies aimed at changing risk preferences in the finance industry should be targeted at recruitment, at least in Germany. This study has important practical implications for the finance industry, as it suggests that recruitment policies can play a crucial role in shaping the risk preferences of finance professionals.

1. Introduction

Researchers have questioned whether the preferences of finance professionals differ significantly from the preferences of comparable workers in other industries. Economists agree that the financial sector plays a crucial role in society (Froot et al., 1993; Hayek, 1945; Levine, 2005). The general public, however, tends to hold a less favorable view of finance and the professionals working in the sector, which Zingales (2015) refers to as the "antifinance sentiment." Key points of concern are the values of finance professionals and a culture of greed in which excessive risk-taking is hurting consumer interests and undermining the effectiveness of the financial system (Roulet, 2015; Thakor, 2016; World Economic Forum, 2010). Accordingly, several studies have sought to assess the preferences and values of professionals working in the finance industry.

This paper uses long-running individual-level panel data from the German Socio-Economic Panel (SOEP) to examine the extent to which finance professionals are more risk-loving than other people and explore possible mechanisms underlying the potential differences in preferences between finance professionals and those in other industries. A large

body of literature in business, management, and organization studies considers how the dynamics of (self-)selection and socialization affect the preferences and other mental traits of individuals working in a particular industry or occupation (e.g., Schneider, 1987; Van Maanen & Schein, 1979). However, a dynamic, longitudinal perspective that considers potential drivers of systematic, cross-sectional differences in preferences remains lacking in studies of the preferences of finance professionals. Instead, most of these studies simply compare finance professionals' and non-finance professionals' preferences measured at a point in time.

Some cross-sectional evidence suggests that the preferences of finance professionals, particularly ethical values, differ systematically from the preferences of professionals or workers in other industries. Holmen et al. (2021), for example, presented evidence from quasi-experiments indicating that bankers engage in riskier and less prosocial behavior than other people. However, this difference disappears after controlling for sociodemographic differences. Van Hoorn (2015) similarly reported that differences in self-enhancement and self-transcendence values and economic morals between finance professionals and the general population are trivial, particularly when

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factors such as education are controlled for. Weitzel et al. (2020) observed that finance professionals have similar general risk attitudes as students in their sample, but stronger financial risk attitudes. In addition, Ashraf et al. (2020) found that bankers in a single firm were more successful when their values deviated further from the values prevailing in society. In contrast, a large-scale, cross-country study by Van Hoorn (2017) reveals that individuals with values that emphasize self-enhancement over self-transcendence are not more successful in the finance industry than in other industries.

The strongest evidence in favor of the view of different ethical values among finance professionals comes from a priming experiment by Cohn et al. (2014). In a direct comparison, the authors found that bankers behaved equally or slightly less dishonestly on a laboratory task compared to other people. However, they also found that bankers who were reminded of their professional identity behaved less honestly than a control group that did not receive this prompt. Cohn et al. interpreted this result as evidence that working in the banking sector affects individuals' honesty, concluding that the culture in the banking sector promotes dishonesty. Follow-up studies attempting to replicate the effects of such priming on respondents did not succeed (Huber & Huber, 2020; Rahwan et al., 2019). In addition, various researchers have identified critical flaws in Cohn et al. (2014) research design as well as the statistical methods they used to analyze the data (e.g., Hupé, 2018; Stöckl, 2015; Van Hoorn, 2018; Vranka & Houdek, 2015).

Overall, the extent to which preferences in finance differ from other industries remains unclear. Moreover, even if a correlation is identified between individual preferences and working in finance, evidence is lacking on the mechanisms underlying such a relationship. As alluded to above, two particularly important questions that remain largely unaddressed are whether individuals with certain risk preferences are more likely to choose and continue working in finance and whether their preferences change as they internalize the industry's values. In this paper, we seek to advance the literature on the preferences and values of professionals working in finance by considering both of these questions.[1]

In the next section, we present our expectations regarding financial professionals' risk tolerance or preferences for financial risk. In addition, we elaborate on how (ex-ante and ex-post) selection effects and socialization at work can shape average preferences among finance professionals compared to average preferences in other industries. In the third section, we discuss our empirical approach and present the analyze data, namely individual panel data from Germany covering the years 2000–2017. The fourth section presents the results. The paper concludes with a discussion of the results and their implications for endeavors to change the risk culture in the financial sector.

2. Background: finance professionals' preferences for risk

2.1. Preferences for risk in the finance industry

Over the years, many stories and evidence of severe risk-taking in the financial sector have come to light, including several high-profile scandals involving billions of dollars (Fay, 1997; Leaver & Reader, 2019; Zingales, 2015). Combining this apparent ubiquity of malfeasance with the crucial economic role of the financial sector, the natural

question that emerges is why finance professionals seem so willing to take financial risks that may harm the welfare of others. A logical answer involves finance professionals' preferences or values. Specifically, malfeasances may have been caused by finance professionals' willingness to engage in dubious high-risk, high-return investment deals. In this paper, we focus on systematic differences in preferences for financial risk. We focus on preferences for financial risk, and not risk in other domains, for two reasons. The first is that the financial domain seems most relevant for the work of finance professionals. The second is that this type of risk preference seems most relevant concerning both the well-functioning of the financial system and the public's antifinance sentiment.

2.2. Selection and socialization: a longitudinal perspective of finance professionals' preferences

Although several studies have examined preferences and values in the finance industry, there is little to no empirical evidence of how the industry can be a source of systematic variation in preferences between groups of individuals. Studies outside economics, such as business, management, and organizational research, offer two standard perspectives regarding the origin of inter-industry differences in mental traits, such as preferences: the so-called attraction-selection-attrition (ASA) framework (Schneider, 1987) and industry socialization (Chao et al., 1994; Van Maanen & Schein, 1979).

The ASA framework suggests that individuals do not randomly enter a specific industry, such as finance. Instead, individuals are drawn to or selected into a particular industry because of their specific preferences, resulting in an ex-ante selection (or attraction) effect. Similarly, individuals with certain preferences are more likely to be hired by employers in a given industry, also resulting in an ex-ante selection effect. In addition, there is an ex-post selection (or selective attrition/non-attrition) effect involving individuals' preferences. This effect occurs because the preferences of the individuals who leave an industry (attrition) are different from the preferences of the individuals who remain working in the industry (non-attrition). In particular, individuals are more likely to leave an industry when their preferences do not fit the industry and vice versa.

Applied to possible industry differences in financial risk preferences, an ex-ante selection effect occurs when these preferences affect the likelihood that an individual becomes a finance professional. Specifically, individuals who have a greater appetite for financial risk may be more inclined to pursue careers in finance and have a higher likelihood of being hired for finance positions than those who have a comparatively lower preference for financial risk. Based on the hypothesis that finance professionals have a higher tolerance for financial risk than others, we predict that individuals with stronger preferences for financial risk are more likely to pursue a career in finance.

Similarly, ex-post selection impacts average preferences in the finance industry when individuals' preferences affect the likelihood that they stop working as a finance professional. In this case, following the idea that finance professionals have stronger preferences for financial risk, the specific expectation is that weaker/stronger preferences for financial risk increase/decrease the likelihood that an individual stops working as a finance professional.[2]

The socialization perspective complements the ASA perspective in that it does not consider in- and outflows of employees but allows for changes occurring within employees while they work in a specific industry. The idea is that when an individual enters a particular sector or profession, they start adopting and internalizing the behavior, routines, and mental traits that they need to function in the industry. On the one

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[1] A related study by Gill et al. (2023) experimentally measures the trustworthiness of 221 business and economics students at Goethe University Frankfurt as a predictor of the likelihood that these students would work in the financial sector seven years later. However, Gill et al.'s study does not consider exits from the financial industry. Moreover, because trust is only measured in the beginning, the study does not consider potential socialization effects. Finally, the study's sample excludes, among others, mid- or late-career individuals or students with a different educational background such as mathematics, physics, or computer science.

[2] To be complete, we may refer to individuals seeking to start and remain working as finance professionals as "employee-driven selection." In contrast, we may refer to organizations recruiting and retaining (or firing) specific individuals as "employer-driven selection."

hand, employees who socialize successfully fit better in the industry and are therefore more likely to remain working there. On the other hand, unsuccessful socialization at work increases the likelihood that an individual exits the industry (voluntarily or involuntarily). Applied to possible industry differences in preferences for financial risk, socialization implies that finance professionals' preferences change after they have joined the finance industry. Socialization is most intense in the beginning when an individual first enters a specific industry (Van Maanen & Schein, 1979). Our specific expectation, therefore, is that finance professionals' preferences for financial risk become stronger after they have spent some time working in the finance industry.

3. Methods and data

3.1. Empirical approach

3.1.1. Model for testing for selection into working as a finance professional

The specific empirical method we use and the models estimated in this paper vary with the phenomenon studied, namely selection or socialization. To assess the role of ex-ante and ex-post selection as a source of differences in financial risk preferences between finance professionals and other workers, we estimate hazard models. In these models, the dependent variable involves the experience of a particular event by an individual. Following the discussion of the ASA framework in the previous section, our analysis has two relevant events.

The first event involves an individual becoming a finance professional. This event reflects ex-ante selection into the finance industry. The second event involves an individual stopping working as a finance professional (or not). This event reflects ex-post selection in the form of retention of some specific individuals and selection out of the finance industry of other individuals. The basic hazard model we estimate involves the likelihood of experiencing these events as a function of individuals' financial risk preferences :[3]

$$E_{it} = \beta_0 + \beta_1 R_{it} + \mathbf{X}_{it} + \delta_t + \varepsilon_{it} \tag{1}$$

In the model, E_{it} is a dummy variable capturing whether individual i works in a specific industry or not, and R_{it} refers to the individual's financial risk preferences. The model further includes time-varying and time-constant control variables ($\mathbf{X}_{it}$) (e.g., age, gender, education, number of children, having a partner), time-fixed effects (δ_t), and a random error term (ε_{it}). Evidence from this model that would signal (self-)selection into working as a finance professional can come in two forms. The first is that stronger financial risk preferences increase the likelihood that an individual starts working as a finance professional. For this particular event, we expect that β_1 is positive. The second is that weaker/stronger preferences for risk increase/decrease the likelihood that an individual stops working as a finance professional. We expect that β_1 is negative for this event. Eq. (1) is estimated with a logit model because the dependent variable refers to a dummy variable, that is, an event either does or does not occur. In addition, the data refer to individuals who are measured multiple times. Therefore, we estimate robust standard errors that are corrected for clustering at the level of individuals. The dummy variable indicating transition into the finance industry takes a value of "1″ when an individual starts working in finance.

To ensure we compare individuals starting work in the financial sector to individuals who do not, we exclude all remaining observations for an individual after entry into the finance industry. Analogously, for the exit analysis, we exclude all observations for individuals after they exit. Finally, note that the model in Eq. (1) is susceptible to the problem of poor controls and may therefore suffer an included variables bias (Angrist & Pischke, 2009; Bhattacharya & Vogt, 2007; Pearl, 2009).

Control variables are bad or endogenous if they are likely outcomes of the independent variable of interest in the same way as the dependent variable of interest.

Regarding risk preferences, any individual (control) variable that may be affected by an individual's risk preferences may be endogenous and therefore cause a so-called included variable bias when added as a control (Ayres, 2005; Cinelli et al., 2022).[4] In addition, these control variables may play a role in the way individuals are selected to work in the financial sector. As indicated, one form of selection involves employers recruiting and retaining personnel based on the individuals' risk preferences. Such employer-driven selection, in turn, requires that employers can screen individuals for certain preferences.

Absent direct measures of individual preferences, employers may rely on observable proxies instead, for example, gender. If so, selection may create systematic differences in the presence of different genders among finance professionals and other workers. However, these differences would be the outcome of selection effects and not a source of confounding variation requiring controls. To address the problem of poor controls and possible bias, we estimate two main versions of Eq. (1). The first version includes all the control variables mentioned above. The second version, however, excludes all (potentially endogenous) control variables except the dummy variable indicating whether the observation concerns an imputed risk preference.

3.1.2. Model for testing socialization in the finance industry

When studying socialization, the dependent variable concerns finance professionals' financial risk preferences, and the key independent variable is these individuals' socialization experience in the finance industry. We have the following basic model of a finance professional's preferences (P_{it}) as a function of their socialization in the finance industry (S_{it}):

$$P_{it} = \beta_0 + \beta_1 S_{it} + \mathbf{X}_{it} + d_i + \delta_t + \varepsilon_{it} \tag{2}$$

In the model, P_{it} refers to an individual's financial risk preferences, S_{it} refers to a finance professional's socialization in the finance industry, and d_i refers to individual fixed effects. Because preferences are measured on an 11-point Likert-type scale that is commonly seen as continuous (Dohmen et al., 2011; Norman, 2010; Robitzsch, 2020), we estimate Eq. (2) using a linear regression model. As before, we correct estimated standard errors for clustering at the level of individuals. To be certain, we consider only finance professionals for this analysis. We compare preferences of professionals in the financial sector when they have had relatively little socialization in the industry to the preferences of those same individuals when they have had relatively significant socialization in the finance industry (a within-person comparison).

3.2. Data and variables

3.2.1. Sample and source

The data we use are unbalanced panel data from SOEP, which is a longitudinal survey collecting annual data on individuals who are representative of the resident German population (Goebel et al., 2019). SOEP started collecting data in the early 1980s. However, because of missing data, we can only consider data for the years 2000–2017, where each year represents one wave or survey round. Depending on the model specification, the main sample we consider comprises 168,831 observations for 32,928 individuals. Hence, for each individual in the sample

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[3] See Caliendo et al. (2014) for a similar analysis of self-employment involving the same dataset.

[4] In principle, all the individual controls we consider may be partially endogenous with respect to risk preferences. For instance, risk preferences may affect age because they affect individuals' propensity to engage in risky health behaviors and hence their life expectancy and exit from the SOEP. Similarly, risk preferences may affect gender because the nature of risk-taking is gender-specific in a way that affects male life expectancy and thus males' inclusion in the SOEP.

Table 1
Preferences for risk and selection into the finance industry.

	Dependent = Starting working as a finance professional (1=yes)		Dependent = Stopping working as a finance professional (1=yes)	
	Model 1: All controls included	Model 2: All potentially endogenous controls excluded	Model 3: All controls included	Model 4: All potentially endogenous controls excluded
Financial risk preference	0.27 (0.06) [p = 0.000]	0.36 (0.05) [p = 0.000]	0.02 (0.08) [p = 0.801]	0.02 (0.07) [p = 0.779]
Financial risk preference imputed (1=yes)	−0.03 (0.14) [p = 0.808]	−0.01 (0.14) [p = 0.949]	0.06 (0.16) [p = 0.702]	0.01 (0.15) [p = 0.967]
Sex (1=male)	−0.15 (0.16) [p = 0.325]	–	−0.16 (0.18) [p = 0.380]	–
Age	0.13 (0.05) [p = 0.014]	–	−0.16 (0.06) [p = 0.009]	–
Age^2	−0.00 (0.00) [p = 0.001]	–	0.00 (0.00) [p = 0.006]	–
Educational groups				
No education (reference)	0	–	0	–
9 years high school (0/1)	−0.43 (0.36) [p = 0.237]	–	0.64 (0.53) [p = 0.225]	–
10 years high school (0/1)	0.71 (0.36) [p = 0.047]	–	0.56 (0.52) [p = 0.284]	–
Maturity for University/ Technical College (0/1)	1.21 (0.36) [p = 0.001]	–	0.47 (0.50) [p = 0.348]	–
Qualifications				
No qualification (reference)	0	–	0	–
Vocational degree (0/1)	−0.29 (0.38) [p = 0.439]	–	−0.05 (0.53) [p = 0.931]	–
University/ technical college (0/1)	−0.25 (0.43) [p = 0.552]	–	0.09 (0.55) [p = 0.875]	–
Other control variables	Yes	No	Yes	No
No. of individuals	32,644	32,644	462	462
No. of observations	166,840	166,840	1991	1991
No. of finance professionals	–	–	462	462
No. of observations finance professionals	–	–	1991	1991
Pseudo R^2	0.048	0.010	0.022	0.0001

Notes: Table reports estimated log odds with robust standard errors in parentheses and robust p-values in square brackets that are clustered at the level of individuals. Continuous independent variables are standardized to have a mean of zero and a standard deviation of 1. Other control variables are employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany). To save space, the table reports a selection of estimated coefficients, but a replication package and complete estimation results are available on request.

we have about 5.1 observations on average.

SOEP has been used for many studies of individual preferences, including (financial) risk preferences (e.g., Alesina & Fuchs-Schündeln, 2007; Caliendo et al., 2009; León & Pfeifer, 2017). Moreover, there is a vast amount of evidence showing the validity of the measure of risk preferences included in SOEP (e.g., Mata et al., 2018; Schildberg-Hörisch, 2018). In fact, this measure of risk preferences has gone through various developmental phases and extensive validity testing (Dohmen et al., 2011) and has subsequently been included in many surveys other than SOEP (e.g., He, 2018). Table A2 in the appendix presents some of our own evidence testifying to the validity of the measure of risk preferences considered in this study.

3.2.2. Main variables

The main variables we consider involve individuals being or becoming a finance professional or subsequently leaving the profession. In addition, we consider individuals' financial risk preferences and individuals' experience working in the financial sector. However, as indicated above, the specific dependent and chief independent variables we consider vary with the phenomenon studied—either selection or socialization.

When studying selection effects, we consider the impact of individuals' preferences on two dummy dependent variables that refer to ex-ante selection and ex-post selection. The dummy variables used to test for ex-ante selection capture whether an individual has become a finance professional in the year before. Individuals receive a score of "1″ on this variable if they are working as a finance professional at time t but were not working as a finance professional the year before at time $t − 1$. Individuals who are not working as a finance professional, both at time t and time $t − 1$, are assigned a score of "0."

For this analysis, we exclude individuals working as finance professionals during the entire period covered by the data. In addition, as mentioned above, we exclude all observations for an individual after they enter the finance industry (individuals who worked in finance at $t − 1$ are thus excluded). The dummy variables used to test for ex-post selection capture whether an individual has stopped working as a finance professional in the year before. Individuals receive a score of "1″ if they were working as a finance professional at time $t − 1$ but are no longer working as a finance professional the year after, at time t. Individuals are scored "0" on this variable if they were working as a finance professional at time $t − 1$ and are still working as a finance professional the year after, at time t. We exclude individuals for this analysis who are not working as a finance professional during the entire period covered by the data. In addition, as mentioned above, we exclude all observations of individuals after they have left the finance industry. More generally, we do not consider individuals who change jobs in the financial sector.

When studying socialization, the dependent variable concerns finance professionals' financial risk preferences. The chief independent variables capture financial professionals' socialization in the finance industry. We measure socialization by the years an individual has worked in the financial sector. We determine years in the sector by counting the SOEP survey waves in which an individual indicated they were working as a finance professional. As a robustness check, we also consider two dummy variables measuring socialization experience. The first and main dummy variable has a value of "1″ when a finance professional has worked in the finance industry for two or more years, and "0" otherwise.

We opted to use a two-year cutoff point in constructing this variable because the socialization literature indicates that the effect of socialization on preferences is most intense at the beginning of a job (Bauer et al., 2007; De Cooman et al., 2009; Van Maanen & Schein, 1979). However, to be complete, we also consider an alternative dummy variable that has a value of "1″ when a finance professional has worked in the finance industry for three or more years. Finally, we consider an alternative measure based on the SOEP item asking individuals about their tenure in their current job. The downside of this measure is that

Table 2

Socialization in the finance industry and finance professionals' risk preferences.

Dependent = Financial risk preference	All controls included (M5–8)				All potentially endogenous controls excluded (M9–12)			
	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
Experience as finance professional	−0.02 (0.02) [p = 0.277]	–	–	–	−0.04 (0.01) [p = 0.001]	–	–	–
Two or more years of experience as finance professional (1=yes)	–	−0.02 (0.06) [p = 0.787]	–	–	–	−0.23 (0.06) [p = 0.000]	–	–
Three or more years of experience as finance professional (1=yes)	–	–	−0.02 (0.06) [p = 0.784]		–	–	−0.22 (0.06) [p = 0.000]	
Tenure in current job	–	–	–	0.01 (0.01) [p = 0.471]	–	–	–	−0.01 (0.01) [p = 0.024]
Financial risk preference imputed (1=yes)	0.33 (0.20) [p = 0.098]	0.40 (0.22) [p = 0.075]	0.40 (0.22) [p = 0.069]	0.39 (0.22) [p = 0.073]	0.33 (0.20) [p = 0.098]	0.40 (0.22) [p = 0.075]	0.40 (0.22) [p = 0.069]	0.05 (0.02) [p = 0.007]
Sex (1=male)	0.84 (0.10) [p = 0.000]	0.83 (0.11) [p = 0.000]	0.83 (0.11) [p = 0.000]	0.85 (0.11) [p = 0.000]	–	–	–	–
Age	0.07 (0.04) [p = 0.122]	0.07 (0.04) [p = 0.124]	0.07 (0.04) [p = 0.123]	0.07 (0.04) [p = 0.127]	–	–	–	–
Age^2	−0.00 (0.00) [p = 0.235]	−0.00 (0.00) [p = 0.221]	−0.00 (0.00) [p = 0.221]	−0.00 (0.00) [p = 0.206]	–	–	–	–
Education					–	–	–	–
No education (reference)	0	0	0	0				
9 years high school	0.21 (0.25) [p = 0.407]	0.18 (0.25) [p = 0.479]	0.18 (0.25) [p = 0.471]	0.16 (0.25) [p = 0.515]	–	–	–	–
10 years high school	0.50 (0.25) [p = 0.044]	0.47 (0.25) [p = 0.055]	0.47 (0.24) [p = 0.053]	0.45 (0.25) [p = 0.068]	–	–	–	–
Maturity for University/Technical College	0.43(0.22) [p = 0.051]	0.41 (0.22) [p = 0.060]	0.42 (0.22) [p = 0.057]	0.40 (0.22) [p = 0.074]	–	–	–	–
Qualifications								
No qualification (reference)	0	0	0	0	–	–	–	–
Vocational degree	0.05 (0.34) [p = 0.884]	0.05 (0.34) [p = 0.873]	0.05 (0.34) [p = 0.880]	0.06 (0.34) [p = 0.866]	–	–	–	–
University/Technical college	0.36 (0.34) [p = 0.285]	0.37 (0.34) [p = 0.280]	0.37 (0.34) [p = 0.284]	0.39 (0.34) [p = 0.257]	–	–	–	–
Other control variables included	Yes	Yes	Yes	No	No		No	No
No. of individuals	462	462	462	462	462	462	462	462
No. of observations	1991	1991	1991	1991	1991	1991	1991	1991
Within R^2	0.160	0.161	0.161	0.162	0.053	0.015	0.022	0.020
Between R^2	0.229	0.224	0.224	0.224	0.009	0.002	0.003	0.002
Overall R^2	0.211	0.199	0.200	0.201	0.021	0.005	0.008	0.0002

Notes: Table reports estimated fixed effects regressions with robust standard errors in parentheses and robust p-values in square brackets that are clustered at the level of individuals. Dependent variables and continuous independent variables are standardized to have a mean of zero and a standard deviation of 1. For each model, we estimate a version with potentially endogenous controls included (M5–8) and a version that excludes all potentially endogenous controls and only includes a dummy variable that indicates whether an observation concerns imputed data (M9–12). Other control variables are employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany). To save space, the table reports a selection of estimated coefficients, but a replication package and complete estimation results are available on request.

Table A1

Variable descriptions and descriptive statistics for selected variables.

Variable	Definition and SOEP item(s)	Years	Mean, standard deviation, no. of obs. and no. of individuals							
			Sample of Finance Professionals				Whole Sample			
			M	SD	n0	Ni	M	SD	n0	Ni
Dependent variables										
Being a finance professional (0/1)	Dummy variable (1=yes) based on the SOEP items concerning individuals' occupation (ISCO) and the economic sector/branch of industry/ service area in which the company or institution that respondents work for is active (NACE/SIC). We classify respondents as currently working as a finance professional if they work in two-digit SIC or NACE industries 65–67 (Financial intermediation, except insurance and pension funding; Insurance and pension funding, except compulsory social security; Activities auxiliary to financial intermediation) and have one-digit ISCO codes 1, 2 or 3 (Legislators, senior officials and managers; Professionals; Technicians and associate professionals).	2000–17	1	0	462	1991	0.012	0.108	32,928	168,831
Starting working as a finance professional (0/1)	Dummy variable based on the dummy variable that indicates whether a respondent starts working as a finance professional (=1) in the next year or not (=0).	2000–17	0	0	0	0	0.001	0.039	224	261
Stopping working as a finance professional (0/1)	Dummy variable that indicates whether a respondent is currently working as a finance professional. The variable gets a value of 1 when a respondent changes their status and no longer works as a finance professional in the next year and a value of 0 if the respondent is not a finance professional or will not stop working as a finance professional.	2000–17	0.112	0.316	199	224	0.001	0.036	199	224
Independent variables										
Preference for financial risk (financial risk tolerance) (with linear interpolation)	Based on the SOEP item that asks individuals: "People can behave differently in different situations. How would you rate your willingness to take risks in the following areas?" (0–10) "regarding financial matters?" Linear Interpolation: For the main analysis, we apply the Stata function *ipolate*, which filled in the missing yearly values of the preferences by applying a linear interpolation. Some 70% of the observations for financial risk preferences is imputed on a total of 168,831 (119,760 imputed observations, 49,071 original answers).	2004, 2009, 2014	3.799	2.420	462	1991	2.585	2.238	32,928	168,831
Financial risk preferences, multiple imputation	Multiple imputation is an iterative form of stochastic imputation. Instead of filling in a single value, the distribution of the observed data is used to estimate multiple values that reflect the uncertainty around the true value. Thus, the applied multiple imputation with Stata (command: *mi*) produces more overall observations compared to linear interpolation. Of 273,306 observations for financial risk preferences, 224,235 are imputed here and 49,071 are original answers. Using this imputation method about 82% of the observations for financial risk preferences is imputed.									
Financial risk preferences, consecutive / retrospective imputation	For a further robustness test, we apply a second alternative imputation technique. Assuming the relative stability of economic preferences over time (Schildberg-Hörisch, 2018) we insert risk and monetary motivation for four consecutive/retrospective years if they are missing for an individual and no change between the financial sector and the non-financial sector occurred (Caliendo et al., 2014). Of 273,306 observations for financial risk preferences, 224,235 are imputed here and 49,071 are original answers. Using this imputation method again about 82% of the observations for financial risk preferences is imputed.									
Age	The SOEP records the birth date (GEBJAHR) of each individual. The current age of an individual is created by subtracting the year of birth from the current year.	2000–17	44.464	9.739	462	1991	42.905	11.763	32,928	168,831
Male (0/1)	1=male; 0=female	2000–17	0.625	0.484	462	1991	0.485	0.500	32,928	168,831
Education	Based on the SOEP item that asks about diplomas/degrees attained for completion of secondary/tertiary education:									
	Dummy No education	2000–17	0.028	0.164	462	1991	0.087	0.282	32,928	168,831
	Dummy High School (9 years)	2000–17	0.111	0.316	462	1991	0.246	0.431	32,928	168,831
	Dummy High School (10 years)	2000–17	0.273	0.446	462	1991	0.353	0.478	32,928	168,831
	Dummy General Maturity for University (12/13 years High School)	2000–17	0.588	0.492	462	1991	0.313	0.463	32,928	168,831
Qualification	Based on the SOEP item that takes into account both secondary-level and University/college level degrees and diploma:									
	Dummy No Qualification	2000–17	0.019	0.137	462	1991	0.084	0.277	32,928	168,831
	Dummy Vocational Degree	2000–17	0.578	0.494	462	1991	0.670	0.470	32,928	168,831
	Dummy Tertiary Degree (University/Technical College)	2000–17	0.403	0.491	462	1991	0.246	0.431	32,928	168,831
Non-Employed	Based on the SOEP item that asks "Are you currently employed? Which one of the following	2000–17	0	0	462	1991	0.269	0.444	32,928	168,831

Table A1 (*continued*)

Variable	Definition and SOEP item(s)	Years	Mean, standard deviation, no. of obs. and no. of individuals							
			Sample of Finance Professionals				Whole Sample			
			M	SD	$n0$	Ni	M	SD	$n0$	Ni
Full-Time Employment Experience	applies best to your status?" - unemployed or out of the labor market. This variable reflects the total length of full-time employment in the respondent's career up to the point of the interview in a given year. It combines monthly information on employment status from the calendar dataset (which provides monthly information on activity status since an individual entered the SOEP)	2000–17	18.996	10.790	462	1991	15.276	11.736	32,928	168,831
Unemployment Experience	This variable reflects the total length of full-time employment in the respondent's career up to the point of the interview in a given year. It combines monthly information on employment status from the calendar dataset (which provides monthly information on activity status since an individual entered the SOEP)	2000–17	0.250	0.767	462	1991	0.915	2.297	32,928	168,831
Children in Household	Number of Children in Household: Based on the SOEP calculation in the SOEP PEQUIV dataset	2000–17	0.582	0.909	462	1991	0.669	0.972	32,928	168,831
Having a Partner	Based on the SOEP item that asks, "Are you in a serious / permanent relationship?" Dummy for having a partner	2000–17	0.754	0.431	462	1991	0.732	0.443	32,928	168,831
Regional Dummies	Eastern Germany: Respondent lives in former East Germany and Berlin;	2000–17	0.122	0.327	462	1991	0.249	0.432	32,928	168,831
	South Germany: Respondent lives in Bavaria or Baden-Wuertemberg;	2000–17	0.318	0.466	462	1991	0.264	0.441	32,928	168,831
	Northern Germany: Respondent lives in Schleswig-Holstein or Lower Saxony	2000–17	0.135	0.341	462	1991	0.113	0.317	32,928	168,831
Two or more years of experience as finance professional (1=yes)	Subsequent surveys in current status, be it financial professional, non-financial employment, or non-employment	2000–17	4.663	3.491	462	1991	5.307	4.112	32,928	168,831
Three or more years of experience as finance professional (1=yes)	Subsequent surveys in current status, be it financial professional, non-financial employment, or non-employment	2000–17	4.663	3.491	462	1991	5.307	4.112	32,928	168,831
Tenure in current job	Years at current job, be it financial profession, non-financial employment, or non-employment	2000–17	4.663	3.491	462	1991	5.307	4.112	32,928	168,831

Notes: Table reports sample means (M), standard deviations (SD), number of observations (no) and number of individuals (Ni) for finance professionals and the general population. Data are from the German Socioeconomic Panel (SOEP).

Table A2
Construct validity of financial risk preferences.

	Mean of financial risk preferences	SD	Obs.
General risk preference			
Low general risk	1.50	1.70	68,982
Middle general risk	2.57	2.06	96,389
High general risk	3.42	2.54	53,138
Occupational risk preference			
Low occupational risk	1.50	1.74	93,481
Middle occupational risk	2.95	2.08	82,139
High occupational risk	3.78	2.50	36,067

Notes: The table reports mean scores of financial risk preferences for groups of individuals that vary systematically on survey measures related to risk preferences. The differences in mean scores across these groups appear systematic, indicating that the measure of financial risk preferences is indeed valid, measuring what it is supposed to measure.

most people in the sample will already have worked in the finance industry before starting their current job.

For classifying individuals as financial professionals, that is, professionals currently working in the finance industry, we rely on two items included annually in the SOEP between 2000 and 2017. The first concerns individuals' occupations as measured using the International Standard Classification of Occupations (ISCO). The second item concerns the industry where individuals work as measured by two-digit standard industrial classification (SIC) or *nomenclature statistique des activités économiques dans la Communauté européenne* (NACE) codes.

Based on these two items, we classify individuals as finance professionals when they are working as professionals (ISCO 1–3, legislators, senior officials and managers; professionals; and technicians and associate professionals) in the following three industries: (1) financial intermediation (except insurance and pension funding); (2) insurance and pension funding (except compulsory social security); and (3) activities auxiliary to financial intermediation (SIC/NACE 65–67). Using this classification, the sample we consider comprises up to 1991 observations for finance professionals with up to 426 individuals classified as ever having been a finance professional.

We measure individuals' risk preferences by fusing the SOEP items asking respondents about their willingness to take risks "regarding financial matters." The answer scale ranges from 0 – "None" (no willingness to take risks) to 10 –"Very" (very willing to take risks). This item has been used in previous studies of risk preferences involving SOEP data and studies that do not consider SOEP data but have used the SOEP item to measure risk preferences. The item for measuring financial risk preferences has been included in the SOEP in the years 2004, 2009, and 2014. Hence, we follow the standard set used in prior work (e.g., Andrés et al., 2014; Jha et al., 2018) and use linear interpolation to calculate scores for years in which the SOEP did not ask respondents about their financial risk preferences.

In the empirical analysis, we include a dummy control variable to consider whether a specific observation for individual risk preferences is based on linear interpolation or measured directly. This control variable is assigned a value of "1″ if an individual's preference for risk is imputed and a value of "0" otherwise. As a robustness check, we repeat our main analyses but use data for which we have used two alternative approaches to impute missing data. The first alternative involves multiple

Table A3

Financial risk preferences of finance professionals vs. preferences of non-finance professionals.

Dependent = Financial risk preference	Model A1: All controls included	Model A2: All potentially endogenous controls excluded
Finance professional (1=yes)	0.38 (0.05) [p = 0.000]	0.55 (0.06) [p = 0.000]
Financial risk preference imputed (1=yes)	0.12 (0.01) [p = 0.000]	0.12 (0.01) [p = 0.000]
Sex (1=male)	0.38 (0.01) [p = 0.000]	–
Age	−0.01 (0.00) [p = 0.000]	–
Age^2	0.00 (0.00) [p = 0.454]	–
Education		
No education (reference)	0	–
9 years high school	−0.02 (0.03) [p = 0.555]	–
10 years high school	0.07 (0.03) [p = 0.012]	–
Maturity for University/ Technical College Qualification	0.18 (0.03) [p = 0.000]	–
No qualification (reference)	0	–
Vocational degree	0.07 (0.03) [p = 0.008]	–
University/Technical college	0.18 (0.03) [p = 0.000]	–
Other control variables included	Yes	No
No. of individuals	32,928	32,928
No. of observations	168,831	168,831
No. of finance professionals	462	462
No. of observations finance professionals	1991	1991
R^2	0.075	0.006

Notes: Table reports coefficients for an OLS regression with robust standard errors in parentheses and robust p-values in square brackets. Standard errors and p-values are robust standard errors and p-values that are clustered at the level of individuals. Dependent variables and continuous independent variables are standardized to have a mean of zero and a standard deviation of 1. Other control variables are employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany). To save space, the table reports a selection of estimated coefficients, but a replication package and complete estimation results are available on request. For this analysis, we estimated financial risk preferences as a continuous variable. Tables A6a and A6b present results using ordered probit instead of OLS.

imputation, which is an iterative form of stochastic imputation. Instead of filling in a single value, the technique uses the distribution of the observed data to estimate multiple values that reflect the uncertainty around the true value. Based on Caliendo et al. (2014), the second alternative approach assumes that risk preferences are stable between years of measurement if no switch occurred to or from being a financial professional. Table A1 provides further details on the imputation techniques used.

3.2.3. Control variables

Following prior research (e.g., Caliendo et al., 2014; Holmen et al., 2021; Van Hoorn, 2015), we include a set of basic control variables concerning various sociodemographic characteristics. These variables include age (and age squared), region of residence, individuals' experience with employment and unemployment, the number of children in the household, and a dummy for having a partner. We further control for education level (no education = reference category; 9 years high school; 10 years high school; general maturity for university/technical college), educational qualifications (no vocational degree = reference category;

vocational degree; university/technical college), and gender (male/female).

As discussed above, these control variables can be poor because they might be endogenous (e.g., risk preferences affect individuals' longevity and hence their age). Thus, a key robustness check is re-estimating the main empirical models while excluding any potentially endogenous control variables. Table A1 presents details on the main variables and selected control variables in the analysis and descriptive statistics. On average, finance professionals are slightly older than other workers and also more likely to be male. Similarly, finance professionals tend to be more highly educated and are less likely to live in former East Germany, which is expected.

4. Results

4.1. Main results

4.1.1. Preferences of finance professionals vs. non-finance professionals

We first consider differences in average financial risk preferences between finance professionals and other workers (see results in Table A3 in the Appendix). These results indicate that finance professionals in our sample have stronger financial risk preferences, which is consistent with our expectations. The variance equals about 0.38 standard deviations (Model A1). This difference is comparable to variances between men and women. However, this variation is much more sizable than the discrepancy between individuals with different education levels. Moreover, the difference becomes noticeably larger when we exclude all potentially endogenous control variables (Model A2). Finally, results are consistent with prior work considering the correlates of individual risk preferences, particularly the research finding that under many circumstances women are more risk averse than men (Filippin & Gioia, 2018; Grimm, 2019).

4.1.2. Preferences and selection into the finance industry

Table 1 shows results for hazard models considering financial risk preferences as predictors of the likelihood an individual starts working as a finance professional (Model 1) or stops working as a finance professional (Model 3). Results indicate that a stronger financial risk preference is associated with a substantially greater likelihood of becoming a finance professional. The size of the estimated effect of risk preferences on entry is comparable to, though perhaps somewhat lower than, that of education. The coefficient for the variable indicating maturity for university/technical college, for instance, has a comparable *p*-value. Although it is larger, this coefficient pertains to a dummy variable and not to a continuous measure such as financial risk preferences.

We obtain a similar result when we exclude all control variables that are potentially endogenous concerning risk preferences (Model 2). Results further indicate that financial risk preferences are not significantly associated with the likelihood of stopping vs. continuing work as a finance professional (Models 3 and 4). Superficially, it seems that individuals who are more risk-loving are more likely to stop working as a finance professional. However, estimates are imprecise, and the effect sizes appear small. Overall, results suggest that individuals are selected into working as a finance professionals in part because of their financial risk preferences. More specifically, it seems that ex-ante selection or recruitment is a significant source of differences in average preferences between finance professionals and other workers (cf. Table A3).[5]

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[5] As we discuss in more detail in Section 4.2.1, the results in Table 1 are robust to using alternative imputation methods (see Tables S1 and S3 in the online supplement). We further obtain similar results when we consider unimputed general risk preferences instead of financial risk preferences (Table A4).

Table A4

Results using unimputed, general risk preferences instead of imputed, financial risk preferences.

	Table 1: Ex-ante selection		Table 1: Ex-post selection		Table 2: Socialization		Table A3: Cross-sectional differences: Finance professionals vs. others	
	Model A3 DV=Start	Model A4 DV=Start	Model A5 DV=Stop	Model A6 DV=Stop	Model A7 DV=G. risk	Model A8 DV=G. risk	Model A9 DV=G. risk	Model A10 DV=G. risk
General risk preference	0.07 (0.06) [p = 0.276]	0.07 (0.06) [p = 0.219]	0.13 (0.08) [p = 0.121]	0.08 (0.08) [p = 0.289]	–	–	–	–
Experience as finance professional	–	–	–	–	−0.02 (0.01) [p = 0.078]	−0.01 (0.01) [p = 0.102]	–	–
Finance professional (1=yes)	–	–	–	–	–	–	0.07 (0.04) [p = 0.073]	0.10 (0.04) [p = 0.014]
Imputation dummy included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other control variables included	Yes	No	Yes	No	Yes	No	Yes	No
No. of individuals	33,749	33,749	465	465	465	465	34,032	34,032
No. of observations	247,410	247,410	2626	2626	2626	2626	250,036	250,036
No. of finance professionals	–	–	465	465	465	465	465	465
No. of observations finance professionals	–	–	2626	2626	2626	2626	2626	2626
Pseudo R^2	0.045	0.035	0.037	0.033	–	–	–	–
Within R^2	–	–	–	–	0.038	0.007	–	–
Between R^2	–	–	–	–	0.140	0.008	–	–
Overall R^2	–	–	–	–	0.134	0.014	0.053	0.031

Notes: The table repeats key models from Tables 1, 2, and A3. For each model, we estimate a version with potentially endogenous controls included and a version that excludes all potentially endogenous controls and only includes a dummy variable that indicates whether an observation concerns imputed data. Instead of using financial risk preference, we use a measure of general risk preference in the regressions. Other control variables are sex, age, age^2, education, qualification, employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany).

Table A5

The effect of gender on selection into working as a finance professional.

	Dependent = Starting working as a finance professional (1=yes)				Dependent = Stopping working as a finance professional (1=yes)			
	Model A11	Model A12	Model A13	Model A14	Model A15	Model A16	Model A17	Model A18
Male (1=yes)	−0.15 (0.16) [p = 0.325]	−0.10 (0.14) [p = 0.481]	−0.03 (0.15) [p = 0.848]	0.06 (0.14) [p = 0.673]	−0.16 (0.18) [p = 0.380]	−0.09 (0.16) [p = 0.584]	−0.14 (0.17) [p = 0.386]	−0.07 (0.15) [p = 0.665]
Risk preference	0.27 (0.06) [p = 0.000]	0.37 (0.06) [p = 0.000]	–	–	0.02 (0.08) [p = 0.801]	0.03 (0.07) [p = 0.667]	–	–
Imputation dummy included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other control variables included	Yes	No	Yes	No	Yes	No	Yes	No
No. of individuals	32,644	32,644	32,644	32,644	462	462	462	462
No. of observations	166,840	166,840	166,840	166,840	1991	1991	1991	1991
No. of finance professionals	–	–	–	–	462	462	462	462
No. of obs. finance professionals	–	–	–	–	1991	1991	1991	1991
Pseudo R^2	0.048	0.010	0.042	0.0001	0.022	0.0003	0.021	0.0001

Notes: Table reports estimated log odds. Continuous independent variables are standardized to have a mean of zero and a standard deviation of 1. Standard errors and p-values are robust standard errors and p-values that are clustered at the level of individuals. For each model, we estimate a version with potentially endogenous controls included and a version that excludes all potentially endogenous controls and only includes a dummy variable that indicates whether an observation concerns imputed data. Other control variables are sex, age, age^2, education, qualification, employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany). To save space, the table reports a selection of estimated coefficients, but a replication package and complete estimation results are available on request.

4.1.3. Industry socialization and finance professionals' preferences

Table 2 presents results for models estimating the impact of socialization, specifically, time spent working in the financial sector, on financial professionals' financial risk preferences. Model 5 depicts results for the main measure of socialization, which indicates that individuals' risk preferences do not change significantly with socialization. On the one hand, estimated coefficients indicate that risk preferences become somewhat weaker after individuals have spent more time working as a finance professional. On the other hand, effect sizes are small, and estimates are imprecise. To be complete, we also test for socialization effects using various alternative variables and measures.

Our findings are comparable (Models 6–8); however, we obtain much larger effect sizes and estimates that are more consistent when we exclude all potentially endogenous control variables (Models 9–12). Specifically, estimates are consistently negative and statistically significant at usual levels. Hence, although the role of socialization may be intricate, time spent working as a finance professional might to some

Table A6a

Re-estimation of Table A3 using ordered probit models with dummy (high risk/low risk) as outcome variable.

	(1) Coef.	(2) Marg. Effects	(3) Coef.	(4) Marg. Effects
Low Risk	–	−0.13 (0.02) [$p = 0.000$]	–	−0.20 (0.02) [$p = 0.000$]
High Risk	–	0.13 (0.02) [$p = 0.000$]	–	0.20 (0.02) [$p = 0.000$]
Finance professional (1=yes)	0.40 (0.07) [$p = 0.000$]	–	0.57 (0.07) [$p = 0.000$]	–
Imputation dummy included	Yes		Yes	
Other control variables included	Yes		No	
No. of individuals	34,348	–	34,348	–
No. of observations	168,831	–	168,831	–
No. of finance professionals	462	–	462	–
No. of observations finance professionals	2626	–	2626	–
Pseudo R^2	0.040	–	0.002	–

Notes: The table repeats Models A1 and A2 from Table A3, but risk preferences are now estimated in an ordered probit model with a dummy variable for risk (low risk 0–2, high risk over 3 on the 0–10 scale) as the outcome variable. For each model, we estimate a version with potentially endogenous controls included and a version that excludes all potentially endogenous controls and only includes a dummy variable that indicates whether an observation concerns imputed data. Other control variables are sex, age, age^2, education, qualification, employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany).

extent undo the effect of ex-ante selection on financial risk preferences in the finance industry.[6]

4.2. Robustness checks and extensions

4.2.1. Robustness

Data on financial risk preferences were missing for some years; thus, for the main analyses, we followed prior studies and used measures of preferences that included imputed values. However, results may be sensitive to the specific method we used to impute missing data. Hence, as a first robustness check, we repeated the analyses in Tables 1 and 2 but used data for which we have used alternative imputation methods (see Table A1 for details on these methods; see, also, Footnotes 5 and 6). Tables S1–S4 in the online supplement demonstrate the results. Our findings are highly similar to the main results in Tables 1 and 2, indicating that our results are not driven by the use of a specific imputation technique. Specifically, we find evidence of (ex-ante) selection and some indication that socialization reduces the financial risk tolerance of finance professionals.

As a second robustness check, we consider the possibility of lagged effects. Risk preferences measured in one year may affect entry into and exit from the financial sector one year later rather than in the same year. Similarly, socialization in the finance industry may affect individuals' risk preferences with a lag rather than in the same year. Table S5 in the online supplement presents the results, which are comparable with the main results except the role of socialization appears marginal.

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[6] As for Table 1, the results in Table 2 are robust to using alternative imputation methods (Tables S2 and S4 in the online supplement) and we obtain similar results when we consider unimputed general risk preferences (Table A4).

Table A6b

Re-estimation of Table A3 using ordered probit models with four risk categories as outcome variable.

	(1) Coef.	(2) Marg. Effects	(3) Coef.	(4) Marg. Effects
Very Low Risk	–	−0.11 (0.02) [$p = 0.000$]	–	−0.17 (0.02) [$p = 0.000$]
Low Risk	–	−0.01 (0.00) [$p = 0.000$]	–	−0.02 (0.00) [$p = 0.000$]
High Risk	–	0.06 (0.01) [$p = 0.000$]	–	0.09 (0.01) [$p = 0.000$]
Very High Risk	–	0.06 (0.01) [$p = 0.000$]	–	0.09 (0.01) [$p = 0.000$]
Finance professional (1=yes)	0.37 (0.06) [$p = 0.000$]	–	0.55 (0.06) [$p = 0.000$]	–
Imputation dummy included	Yes	Yes	Yes	Yes
Other control variables included	Yes	No	No	No
No. of individuals	34,348		34,348	
No. of observations	168,831		168,831	
No. of finance professionals	462		462	
No. of observations finance professionals	2626		2626	
Pseudo R^2	0.040		0.002	

Notes: The table repeats Models A1 and A2 from Table A3, but risk preferences are now estimated in an ordered probit model with very low risk indicating a risk preference of 0, low risk of 1–3, high risk of 4–5, and very high risk of over 5 on the 0–10 scale) dummy variable for risk as the outcome variable. For each model, we estimate a version with potentially endogenous controls included and a version that excludes all potentially endogenous controls and only includes a dummy variable that indicates whether an observation concerns imputed data. Other control variables are sex, age, age^2, education, qualification, employment experience, unemployment experience, number of children in household, having a partner (1=yes), no employment (1=yes), duration in current spell (spells are financial employment, non-financial employment, or no employment), and regional dummies (North, South, East Germany).

4.2.2. Gender and selection into the finance industry

To conclude the analysis, we consider gender as a factor affecting individuals' selection into and out of working as a finance professional. Partly in parallel to the literature concerning preferences in the finance industry, there is an emerging literature considering how gender, particularly gender-specific preferences, might have played a role in the occurrence of the 2007–2009 global financial crisis and might help prevent similar crises in the financial sector in the future. In short, the idea would be that women on average have preferences that make it less likely to engage in risky business practices, which would benefit not only clients but also the financial system as a whole (Adams & Ragunathan, 2017; Prügl, 2012; Wu et al, 2018). Moreover, if employers in the financial sector are deliberately selecting employees with strong preferences for risk, they may be biased against hiring women if they believe that this group, on average, has weaker preferences for risk than men.

Results (Table A5 in the Appendix) indicate that conditional on financial risk preferences, men are slightly less likely to start working as a finance professional than women. At the same time, men appear less likely to stop working in finance. Hence, it appears that in relative terms, women are more likely to be selected out of the finance industry. Still, results do not provide much support for the idea that employers in the financial sector screen for gender as an observable trait that predicts

unobservable differences in prospective employees' preferences for financial risk.

5. Discussion and conclusion

The financial sector is widely criticized for excessive risk-taking, not least in the years leading up to the 2007–2009 global financial crisis. Therefore, several studies in the last few years have sought to examine the preferences of finance professionals, particularly whether these preferences differ systematically from the preferences of workers in other industries. However, most studies have been cross-sectional and paid scant attention to the question of how working in the finance industry may affect individual preferences. To reduce the risk of future crises, we particularly want to know about the role of (self-)selection and socialization as (potential) shapers of finance professionals' preferences. Based on an empirical analysis of individual panel data from Germany, we found that individuals who are more risk tolerant are significantly more likely to start working as a finance professional, which is an ex-ante selection effect. We did not find evidence that socialization, as measured by time spent working as a finance professional, increases individuals' preferences for risk. If anything, socialization might be making finance professionals less tolerant of financial risk.

How people behave in different situations reflects their preferences. In that ex-ante selection appears to be the most significant shaper of preferences among finance professionals by far, it seems that attempts to change the culture in the financial sector should focus on recruitment. To the degree that average preferences for risk among finance professionals differ from average preferences for risk in other industries, this difference is almost entirely driven by the group of individuals who start working in finance. Hence, a recruitment process that can attract and select a different type of financial professional is essential if average preferences among finance professionals are to change in the direction of being less risk-loving. At the same time, we find relatively little evidence that gender, specifically, identifying as female, is an important selection factor in the finance industry. Therefore, we suggest caution about claims that the hiring of (additional) women provides a simple path to changing the culture in the financial sector.

Finally, we should note an important limitation of the analysis presented in this paper. This limitation is that our analysis was not global, considering data for Germany only. Nearly all prior work suffers the same limitation of being based on a single-country sample. For our analysis, the reason for not considering a global sample is most practical, namely the need for individual panel data, which are scarce. Nevertheless, our results might be partly specific to the German context and do not necessarily generalize to other countries. Even if we cannot think of strong theoretical reasons why our results would be completely idiosyncratic and provide no insight into the financial sector in general, we think that future work may usefully extend the present analysis to consider how selection and socialization shape the preferences of finance professionals in other countries. Improving the financial sector and making it less vulnerable to crises is a key policy challenge for countries worldwide. Therefore, we must gather insight into the factors shaping the preferences of the professionals responsible for the inner workings of the finance industry in as many countries as possible.

Data availability

Data will be made available on request.

Acknowledgments

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.socec.2023.102071.

Appendix

Table A1, Table A2, Table A3, Table A4, Table A5, Table A6a, Table A6b

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