

# **Commitment to the ESG investing and Individual Mutual Fund Investors' Preference: Evidence from Stated Choice Experiments**

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## **Abstract**

Using stated choice experiments, this paper tests the causal effect of mutual funds' commitment to the ESG investing by signing the UNPRI on individual investors' preference for mutual funds. I find that signing the UNPRI will make mutual funds more attractive to investors. The estimated WTP is approximately 4% in terms of the annual management fees, both statistically and economically significant. The effect of signing the UNPRI on investor preference is not significantly different among investors with different sex, income, risk attitude, and mutual fund investment experience. However, it is larger among the older investors than the younger.

**JEL classification numbers:** G20, G50.

**Keywords:** UNPRI, Choice Experiment, ESG.

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## **1. Introduction**

An increasing number of institutional investors incorporate Environmental, Social, and Governance (ESG) factors into investment decision-making. Many institutional investors have announced commitments to the ESG investing by signing the United Nations Principles for Responsible Investment (the UNPRI). The UNPRI is the world's leading proponent of responsible investment by encouraging and supporting its signatories (including investment managers, asset owners, and service providers) in incorporating ESG factors into decision making. By the March of 2023, 4,841 institutional investors have become signatories of the UNPRI, with a year-to-year 10% annual growth rate. The aggregate asset under management (AUM) has reached in USD 121.3 trillion 2021 (the most recent data).

However, committing to the ESG investing can be costly to institutional investors. For example, when having signed the UNPRI, the investment managers and asset owners are obliged to disclose annual reports of responsible investment activities and pay for annual membership fees. Besides, if an institutional investor follows the ESG principles in making investment decisions, the choice set of stocks might be limited to those with high ESG performance, which can make the investors miss profitable earning opportunities. Considering these costs, understanding the motivation behind which institutional investors commit to the ESG investing is important.

One possible explanation for that many institutional investors commit to the ESG investing is that it can attract more potential clients, especially individual investors. Then investment managers can earn more revenues from larger AUM. They might further benefit by raising management fees when the potential investors prefer their products. In this paper, I test whether committing to the ESG investing by signing the UNPRI affects individual investors' preference for mutual funds.

Previous studies document mutual fund investors' preference for sustainable funds (Gutsche and Ziegler, 2019; Hartzmark and Sussman, 2019; Gutsche et al., 2023; Harasheh et al., 2024) and impact investing (Heeb et al., 2023). In this paper, I focus on the commitment to the ESG investing principles. It is possible that the ESG investing and the commitment to it have different effect on individual investors' preference, since committing to the ESG investing can be cheap talk. Some recent studies find no evidence that mutual funds increase holdings of high-ESG stocks nor improve ESG incorporation to portfolio companies after signing the UNPRI (Kim and Yoon, 2023). If individual investors refer to the commitments as cheap talk, they might not be attracted by the commitment even having preference for ESG investing.

A more closely related literature examines whether the net flow of mutual funds increases after the fund signing the UNPRI (Humphrey and Li, 2021; Kim and Yoon, 2023). However, since signing the UNPRI is a self-selected activity of the mutual funds, their findings might be subject to endogeneity concern and might not indicate causal relationship.

This paper attempts to demonstrate causality between committing to ESG investing and individual investors' preference for mutual funds through stated choice experiments. Choice experiments are widely used in eliciting investors' preferences (Gutsche and Ziegler, 2019; Hartzmark and Sussman, 2019; Gutsche et al., 2023; Kleffel and Muck, 2023; Harasheh et al., 2024). I hired 345 subjects to participate in the experiments from an online outsourcing platform in China. Subjects should be aged 18 years or older and have mutual fund investment experience. They were requested to participate in eight choice experiments. In each experiment, participants were asked to choose from three hypothetical mutual funds with different features (including past performance, fund family size, fund size, management fee, and whether having signed the UNPRI or not) or choose not to invest in any funds.

We analyze the experiment data with mixed logit regression models. Our findings are summarized as follows. First, signing the UNPRI has significantly positive marginal effect on individual investors' preference for mutual funds, suggesting that commitments to the ESG investing will be helpful for mutual funds to attract individual investors. Second, the estimated willingness to pay (WTP) for funds signing the UNPRI is equivalent to approximately 4% annual management fee, which is both statistically and economically significant. Third, the effect of signing the UNPRI on investors' preference for funds is not significantly different among investors with different sex, income, risk attitude, and mutual fund investment experience. However, this effect is significantly more prominent among older mutual fund investors.

This paper is related to the studies on mutual fund investors' preference for socially responsible investing. Previous studies show that investors have socially responsible investing preference (Gutsche and Ziegler, 2019; Hartzmark and Sussman, 2019; Humphrey and Li, 2021; Gutsche et al., 2023; Kim and Yoon, 2023; Harasheh et al., 2024). This paper contributes to the literature by documenting the causal effect of committing to the ESG rules on individual mutual fund investors' preference.

## **2. Experimental Design**

We conducted a series of choice experiments to examine whether signing the UNPRI will affect the preference of individual mutual fund investors. Choice experiments are widely used in eliciting mutual fund investors' preferences (Gutsche and Ziegler, 2019; Gutsche et al., 2023; Heeb et al., 2023; Harasheh et al., 2024). We hired subjects from Credamo.com, an outsourcing platform similar to Amazon MTurk. Subjects should be 18 years old or older and have mutual fund investment experience. They were asked to participate in a survey on investment decision. Several attention-check questions are included to guarantee the quality of response. One failed to correctly answer any of the attention-check questions was excluded immediately from the experiment. Each subject completing the survey and making effective response is given CNY 2. There were 345 subjects that have

passed all attention-check questions and make effective responses, which constitutes the full sample of this study.

The survey includes three sections. It starts with a section collecting respondents' background information, including gender, age, monthly income, and mutual fund investment experience. I measure the subjects' risk attitude by asking how much risk they are willing to take in investing. Possible choices include "no risk", "low risk, low return", "Medium risk, medium return", and "high risk, high return".

**Table 1: Summary Statistics**

	<b>N</b>	<b>Mean</b>	<b>Std</b>	<b>Min</b>	<b>Q1</b>	<b>Median</b>	<b>Q3</b>	<b>Max</b>
<b>Male</b>	345	0.414	0.493	0	0	0	1	1
<b>Female</b>	345	0.586	0.493	0	0	1	1	1
Monthly Income: CNY 0-1000	345	0.003	0.055	0	0	0	0	1
Monthly Income: CNY 1000-2000	345	0.029	0.168	0	0	0	0	1
Monthly Income: CNY 2000-5000	345	0.128	0.334	0	0	0	0	1
Monthly Income: CNY 5000-10000	345	0.339	0.473	0	0	0	1	1
Monthly Income: CNY 10000+	345	0.501	0.500	0	0	1	1	1
Risk Preference: No Risk Taking	345	0.003	0.055	0	0	0	0	1
Risk Preference: Low Risk	345	0.594	0.491	0	0	1	1	1
Risk Preference: Medium Risk	345	0.342	0.474	0	0	0	1	1
Risk Preference: High Risk	345	0.061	0.239	0	0	0	0	1
Age	345	29.60	7.85	19	24	28	34	59
Experience	345	4.80	3.99	0	2	4	5	23

In the next section, subjects were shown a reading material that provides a brief introduction to the UNPRI to guarantee that all the subjects have a basic understanding of this organization. The reading material introduces several features of the UNPRI. a) the UNPRI is aimed to encourage socially responsible investment. b) UNPRI signatories include many leading institutional investors both in China and around the world. c) when a mutual fund management company signs the UNPRI, it promises that all the funds under its management will increase (decrease) the holding of stocks with good (bad) socially responsible performance. d) UNPRI signatories are required to periodically report socially responsible investment activities. e) Any signatory will be asked to exit the UNPRI if it cannot meet the UNPRI's requirement; f) the UNPRI cannot force its signatories to do socially responsible investments. After reading this material, subjects are asked to answer two attention-check questions regarding the contents in the reading materials. Those proving wrong answers to any of the two questions were excluded from the experiment and not included in the full sample. Table 1 reports the summary statistics of the 345 subjects in the sample.

Then subjects were asked to make investment decisions in 8 choice experiments. In each experiment, subjects should decide to invest in three mutual funds or choose not to invest in any funds (an opt-out alternative). The three mutual funds are

different in five attributes, including history performance in the past three years, the fund family size, the fund size, the annual management fees, and whether signing the UNPRI or not. The attributes and attribute levels chosen for the analysis are presented in Table 2.

**Table 2: Attributes and Attribute Levels in the choice experiments**

<b>Attributes</b>	<b>Attribute Levels</b>
<b>Signing the UNPRI</b>	<b>YES, No</b>
<b>Past Performance</b>	High (the 80th percentile) Middle (the 50th percentile) Low (the 20th percentile)
<b>Family Size</b>	Large (the 80th percentile) Middle (the 50th percentile) Small (the 20th percentile)
<b>Fund Size</b>	Large (the 80th percentile) Middle (the 50th percentile) Small (the 20th percentile)
<b>Annual Management Fee</b>	0.5%,1.0%

There are thirty-six different hypothetical mutual funds are constructed based on the combination of the five attributes and the corresponding levels. There are in total  $C_{36}^3 = 7140$  choice sets that including three mutual funds and an opt-out option. 8 out of these choice sets are generated by using Dcreate module of Stata (Hole, 2017). An example of choice set is presented in Table 3.

**Table 3: An example of a choice set**

	<b>Fund A</b>	<b>Fund B</b>	<b>Fund C</b>	<b>No Investment</b>
Signing the UNPRI	YES	No	No	
Past Performance	High	High	Middle	
Family Size	Large	Small	Middle	
Fund Size	Large	Middle	Small	
Annual Management Fee	0.5%	1.0%	1.0%	

### 3. Main Results

Following McFadden and Train (2000), I employ mixed logit regressions in analyzing the effect of signing the UNPRI on individual mutual fund investors' preference. This model assumes that each investor's utility is the sum of a linear combination of fund features and a random element. Specifically, investor  $i$ 's utility for the mutual fund  $m$  in the choice set  $j$ ,  $U_{ijm}$ , is assumed to be as follows.

$$U_{ijm} = \beta_i' x_{ijm} + \varepsilon_{ijm} \quad (1)$$

where  $x_{ijm}$  denotes the independent variables of the mutual fund  $m$  in the choice set  $j$ ,  $\beta_i$  denotes the marginal utility of independent variables, and  $\varepsilon_{ijm}$  is the error term. The primary variable in interest is *SignUNPRI*, a dummy variable that takes the value of one if the hypothetical fund has signed the UNPRI.

Following Gutsche and Ziegler (2019), I assume that the coefficients of the annual management fees (the financial variable) and all interaction terms are fixed across different individuals, while the coefficients of non-financial variables are randomly and independently drawn from normal distributions. I use "mixlogit" command of Stata in estimating these regressions.

Based on the results of the mixed logit regressions, I also estimate the WTP for *SignUNPRI* and other non-financial variables, in respect to the annual management fee. The mean WTP is the change of the management fee for a marginal change of the independent variable of interest when keeping the utility unchanged. Mathematically, the estimated WTP is equal to the regression coefficient of the annual management fee divided by that of *SignUNPRI*.

### 4. Empirical Results

Table 4 reports the findings of the mixed logit regression that examines the marginal effect of signing the UNPRI on individual mutual fund investors' preference. The reported results include the mean and standard deviation of the marginal utility of each independent variable (when applicable) across all individual investors. The sign of the (mean) coefficients indicates whether the feature increases or decreases the utility of investors. The primary coefficient in interest is that of *SignUNPRI*, which is 1.917 and is significant at the 1% level. This result shows that signing the UNPRI increases mutual funds' attractiveness to individual mutual fund investors. Therefore, committing to responsible investing increases individual investors' preference for mutual funds.

**Table 4: The Effect of Signing the UNPRI on Individual investors' Preference**

	<b>Mean</b>	<b>Standard Deviation</b>
<i>Annual Management Fee</i>	-0.435***	n.a
	(0.157)	
<i>SignUNPRI</i>	1.917***	1.655***
	(0.139)	(0.124)
<i>Past Performance: High</i>	0.593***	2.112***
	(0.145)	(0.133)
<i>Past Performance: Middle</i>	0.239***	0.803***
	(0.0788)	(0.100)
<i>Family Size: Large</i>	-0.206*	0.342**
	(0.118)	(0.140)
<i>Family Size: Middle</i>	0.167***	-0.204*
	(0.064)	(0.115)
<i>Fund Size: Large</i>	0.156	0.525***
	(0.114)	(0.115)
<i>Fund Size: Middle</i>	0.174**	-0.003
	(0.068)	(0.086)
<i>N</i>	11040	

\*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level respectively

For other attributes, the results show that higher past performance has positive effect on investors' preference for mutual funds. In addition, mutual funds managed by large fund families are less attractive than those managed by small fund families, while managed by middle-sized families makes funds more attractive. In terms of the size of mutual funds, I find that middle-sized funds are more attractive to individual investors than small-sized funds, but large-sized funds and small-sized funds are not significantly different in terms of attractiveness. Not surprisingly, the annual management fees have negative effect on mutual fund investors' preference.

**Table 5: Estimated WTP in respect to Annual Management Fee**

	<b>Estimated WTP</b>	<b>Lower Bound of 95% CI</b>	<b>Upper Bound of 95% CI</b>
<i>SignUNPRI</i>	4.06%	1.45%	6.67%
<i>Past Performance: High</i>	1.17%	0.30%	2.03%
<i>Past Performance: Middle</i>	0.53%	0.00%	1.05%
<i>Family Size: Large</i>	-0.45%	-1.21%	0.31%
<i>Family Size: Middle</i>	0.41%	0.02%	0.79%
<i>Fund Size: Large</i>	0.31%	-0.13%	0.76%
<i>Fund Size: Middle</i>	0.39%	-0.04%	0.82%

Table 5 reports the estimated WTP of all the independent variables. The estimated WTP of signing UNPRI is 4.06% with respect to the annual management fee,

implying that individual mutual fund investors are willing to pay 4.06 percentage points more annual management fees for responsible investment. Given that the annual management fees of public open-end actively managed equity mutual funds in China is usually no more than 1.5%, the estimated WTP is economically large. The estimated WTP for other independent variables is consistent with the signs and the magnitudes of the coefficients in Table 4.

I also investigate the heterogenous effect of signing the UNPRI across different types of individual mutual fund investors. The results are presented in Table 6. HighIncome is an indicator variable for participants whose families have annual income over CNY 10,000. HighRisk is a dummy for participants with medium or high risk-taking. I find no significant evidence that the marginal effect of signing the UNPRI on investors' utility is related to gender, income, risk attitude, and mutual fund investment experience. However, the marginal effect of signing the UNPRI is significantly larger among older investors.

**Table 6: Heterogenous Effect**

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Annual Management Fee</i>	-0.435***	-0.435***	-0.437***	-0.435***	-0.433***	-0.436***
	(0.157)	(0.157)	(0.157)	(0.157)	(0.157)	(0.157)
<i>SignUNPRI</i>	1.917***	1.932***	1.799***	1.988***	1.695***	1.107***
	(0.139)	(0.169)	(0.163)	(0.202)	(0.175)	(0.401)
<i>Past Performance: High</i>	0.593***	0.592***	0.610***	0.590***	0.640***	0.607***
	(0.145)	(0.145)	(0.144)	(0.146)	(0.147)	(0.145)
<i>Past Performance: Middle</i>	0.239***	0.239***	0.234***	0.240***	0.181**	0.229***
	(0.079)	(0.079)	(0.079)	(0.079)	(0.080)	(0.079)
<i>Family Size: Large</i>	-0.206*	-0.206*	-0.208*	-0.205*	-0.217*	-0.208*
	(0.118)	(0.118)	(0.118)	(0.118)	(0.117)	(0.118)
<i>Family Size: Middle</i>	0.167***	0.167***	0.167***	0.167***	0.166***	0.166***
	(0.063)	(0.063)	(0.064)	(0.064)	(0.063)	(0.063)
<i>Fund Size: Large</i>	0.156	0.156	0.155	0.157	0.137	0.157
	(0.114)	(0.114)	(0.114)	(0.114)	(0.112)	(0.114)
<i>Fund Size: Middle</i>	0.174**	0.174**	0.174**	0.174**	0.170**	0.174**
	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)	(0.068)
<i>SignUNPRI* Male</i>		-0.032				
		(0.199)				
<i>SignUNPRI* HighIncome</i>			0.276			
			(0.201)			
<i>SignUNPRI* HighRisk</i>				-0.104		
				(0.214)		
<i>SignUNPRI* Experience</i>					0.023	
					(0.023)	
<i>SignUNPRI* Age</i>						0.027**
						(0.013)
N	11,040	11,040	11,040	11,040	11,040	11,040

\*\*\*, \*\*, \* denote significance at the 1%, 5%, and 10% level respectively.



## **5. Conclusion**

Using stated choice experiments, I test the causal effect of funds' commitment to the responsible investing principles by signing the UNPRI on the attractiveness to individual mutual fund investors. I employ the mixed logit regression model to analyze the experiment data and have several findings. First, individual mutual fund investors have preference for mutual funds having signed the UNPRI. In other words, the commitment to the responsible investing can attract investors. The estimated WTP is approximately 4% in terms of the annual management fees, which is both statistically and economically significant. Second, the marginal effect of signing the UNPRI is larger among the older investors than the younger.

This paper might have implications for policy makers. It is possible that committing to the ESG investing is just cheap talk, given the findings that this commitment is not related to more high-ESG stock holding nor more ESG incorporation to portfolio companies (Kim and Yoon, 2023). However, the commitment to ESG investing can still attract individual mutual fund investors. Policy makers should make effort in scrutinizing institutional investors ESG activities and educating individual investors to understand the commitment.

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