

Motivation

- Investors tend to be **reluctant to bear risk**: even those who hold stocks tend to put only a small fraction of their financial wealth in them (Calvet et al. 2023)
- Can investors be **encouraged** to take more risk? If so, how?
- Gennaioli, Shleifer, and Vishny (2015) hypothesize that trusted financial intermediaries (“**money doctors**”) can give their clients the confidence to overcome their anxieties and take risks, including through **communication**
- Communication by fund managers is prevalent (Hillert, Niessen-Ruenzi, and Ruenzi 2021): over 9/10 semi-annual reports contain **fund letters**. Risk is a major topic.
- Is the money doctors mechanism of **anxiety alleviation** at work in this setting?

Empirical setting

- Focus on communication by index mutual funds that **track the S&P 500** market index to aid identification (Hortaçsu and Syverson 2004)
- Extract statements related to **risk** – the very thing investors fear
 - Measure both **amount/detail** of communication & **level** of risk conveyed
- Examine aggregate flows to & from these funds to study investors’ behavior

Providing more detail about risk encourages risk-taking

- Risk Detail**_{*i,t*} is the log word count about risk. (Total length is controlled for.)
- Effect is present in the cross-section, and over time (i.e. within-fund)
- The level of risk conveyed is informative – but **investors don’t learn** from it
- Other specifications involving changes to sentiment from a prior ⇒ similar result

Dependent Variable:	Net Flow _{<i>i,t</i>→<i>t+1</i>} (%)					
	(1)	(2)	(3)	(4)	(5)	(6)
Risk Detail _{<i>i,t</i>}	0.5044*** (0.1808)	0.4976*** (0.1768)	0.5258*** (0.1974)	0.5022*** (0.1842)	0.4950*** (0.1877)	0.4795** (0.2002)
Risk Level _{<i>i,t</i>}		0.1043 (0.1123)		0.0058 (0.0169)	0.0144 (0.0201)	
1{High Risk Level} _{<i>i,t</i>}			0.3339 (0.8204)			0.5278 (1.242)
Risk Detail _{<i>i,t</i>} × 1{High Risk Level} _{<i>i,t</i>}			-0.0457 (0.1380)			-0.0404 (0.2232)
Risk Level measure		Sentiment	Sentiment	High-Low Words	High Words	High Words
1{High Risk Level} threshold			Median			0
Fund Controls _{<i>i,t</i>}	✓	✓	✓	✓	✓	✓
Year-month FEs	✓	✓	✓	✓	✓	✓
Fund FEs	✓	✓	✓	✓	✓	✓
N	1,155	1,137	1,137	1,154	1,154	1,154
R ²	0.44	0.43	0.43	0.44	0.44	0.44

Fund controls: total (log) word count, fund’s prior month return, its square, fees & (log) size, and fund family’s (log) age & (log) size. Clustered (Fund & Year-month) standard-errors in parentheses. Signif. Codes: ***: 0.01, **: 0.05, *: 0.1

An explicit test for belief-based persuasion

- Weaker prior (i.e. higher **VVIX**) *should* produce stronger updates; however...

Dependent Variables:	Net Flow _{<i>i,t</i>→<i>t+1</i>} (%)		Inflow _{<i>i,t</i>→<i>t+1</i>} (%)		Outflow _{<i>i,t</i>→<i>t+1</i>} (%)	
	(1)	(2)	(3)	(4)	(5)	(6)
Risk Detail _{<i>i,t</i>}	0.5248*** (0.1633)	0.5195*** (0.1917)	0.5569*** (0.1886)	0.5160** (0.2005)	0.0350 (0.0667)	0.0958 (0.0804)
Risk Detail _{<i>i,t</i>} × 1{Low Prior Strength} _{<i>t</i>}	-0.0778 (0.1141)	-0.0346 (0.1328)	-0.1485 (0.1271)	-0.1028 (0.1536)	-0.0546 (0.0873)	-0.1038 (0.0948)
Fund Controls _{<i>i,t</i>}	✓	✓	✓	✓	✓	✓
Fund FEs	✓	✓	✓	✓	✓	✓
Market Controls _{<i>t</i>}	✓		✓		✓	
Year-month FEs		✓		✓		✓
N	1,155	1,155	1,155	1,155	1,155	1,155
R ²	0.31	0.44	0.74	0.79	0.83	0.85

Clustered (Fund & Year-month) standard-errors in parentheses: ***: 0.01, **: 0.05, *: 0.1

The effect is concentrated among anxious readers

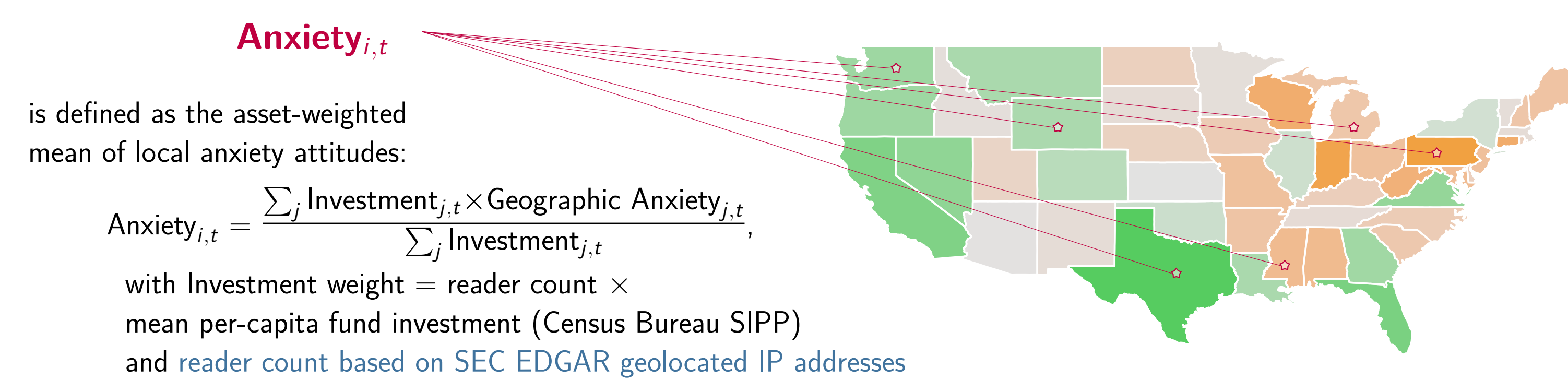
- Cross-sectional median split; i.e. always same time period

Dependent Variable:	Net Flow _{<i>i,t</i>→<i>t+1</i>} (%)			
	Low Anxiety		High Anxiety	
Sub-sample:	(1)	(2)	(3)	(4)
Risk Detail _{<i>i,t</i>}	-0.1019 (0.1386)	-0.1170 (0.1365)	0.5850*** (0.2064)	0.5795*** (0.2065)
Risk Level _{<i>i,t</i>}		0.1137 (0.1060)		0.2221** (0.1109)
Local Economy Controls _{<i>i,t</i>}	✓	✓	✓	✓
Fund Controls _{<i>i,t</i>}	✓	✓	✓	✓
Year-month FEs	✓	✓	✓	✓
Fund FEs	✓	✓	✓	✓
N	553	552	686	685
R ²	0.61	0.61	0.52	0.52

Clustered (Fund & Year-month) standard-errors in parentheses: ***: 0.01, **: 0.05, *: 0.1

Measuring investor anxiety at a fund-month level

- For readership of letter issued by fund *i* during month *t*:
- Geographic anxiety attitudes based on Google search activity for anxiety-related topics, varying per state & month:



Interpreting the empirical findings

- In the literature, effective **risk aversion increases with anxiety** (e.g. Kuhn and Knutson 2011; Guiso, Sapienza, and Zingales 2018) ...
- ... and **communication reduces anxiety** (e.g. Hayward 1975; Hall, Roter, and Katz 1988)
- Consider an investor who holds the (mean-variance-efficient) fraction

$$x_t = \frac{\mathbb{E}_t[R_{t+1}]}{\gamma_t \text{Var}_t(R_{t+1})} \quad (1)$$

of her financial wealth in the risky asset with excess return R_{t+1} (and the remainder in the risk-free asset)

- If communication does not shift her beliefs (as shown by my empirical results), the results are instead consistent with a decrease in effective risk aversion:

$$\text{Net Flow} = \frac{x_{t+1} - x_t}{x_t} = \frac{\gamma_t}{\gamma_{t+1}} - 1 \quad (2)$$

Asset pricing implications for the stock market

- In the paper, I show that communication-driven flows are persistent and not due to rebalancing between equity funds ⇒ fresh flows into the stock market ⇒ a \$1 inflow increases the value between \$1.9–\$5 (Gabaix and Koijen 2021; Hartzmark and Solomon 2023)
- Allows me to produce **rough counterfactuals for the S&P 500** level over my sample period, based on my flow estimates × each estimated market multiplier
- Effect is responsible for a **27–67 b.p. annual average return**
- Observed S&P 500 annual ex-div. return was 8% ⇒ about 3–8% of that

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