When Others Invest: Fear of Missing Out (FoMO) and Financial Market Entry

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Motivation

- In recent years, **financial market participation** has increased substantially (World Economic Forum).
- The financial investment environment has been transformed by **online trading platforms, mobile apps, and easier access to investing**.
- Investment decisions are increasingly made in **highly visible social environments** (e.g., social media platforms and online trading communities).
- Financial influencers constantly publicize their **investment choices, realized gains, and success stories**.
- The visibility of peers' **successful investment outcomes** may increase social comparison and induce **fear of missing out (FoMO)**.
- Important in **volatile and risky markets**, such as cryptocurrencies, where investors are **relatively inexperienced** and potentially more **susceptible to social influence**.

Key Concepts

Fear of Missing Out (FoMO)

FoMO is the psychological feeling of missing out on potentially rewarding opportunities from which peers may benefit through their financial choices (Kaddouhah, 2024).

Peers

Peers are individuals who face similar investment decisions and whose outcomes are observable to the individual, even if they are not socially connected.

Why FoMO Matters?

Evidence from the literature

- Social interactions, peer performance, and community effects shape stock market participation (Hong et al., 2004; Kaustia and Knüpfer, 2012).
  - 32% of investors report **fear of missing out on peers' returns**, while 60% report **wanting to achieve similar returns** (Bursztyn et al., 2014).
  - A one standard deviation **increase in peers' returns increases stock market entry** by 9.4% (Kaustia and Knüpfer, 2012).
- CySEC Survey on Retail Investor Behaviours and Habits (2022) shows:
  - 22% of investors make investment decisions based on **digital promotions or celebrity endorsements on social media**.
  - 31% report making investment decisions based on the advice of a **"financial influencer"**.

Research Question

Research question

How does anticipated exposure to peers' successful investment outcomes affect financial market entry through fear of missing out (FoMO)?

Main idea

Individuals may enter financial markets not only because of expected returns, but also to avoid missing gains realized by peers.

Contribution

- Develop a theoretical model in which **FoMO is modeled as socially amplified anticipated regret**, arising from the possibility of missing peers' successful investment outcomes.
- Introduce the **expected number of observable successful peer outcomes** as a measure of social amplification.
- Test the theoretical predictions using a controlled online experiment that manipulates **anticipated peer feedback** and **peer-group size**.

Setup

We consider an **asset market**.

- A finite set of individuals N decides whether to invest in a risky asset.
- Each individual $i \in N$ has a peer group $N_i \subseteq N$, where $i \notin N_i$.
- Individuals are assumed to be risk neutral and regret averse.
- $\sigma \in \{0, 1\}$ denotes the state of the world.
- We do not limit our analysis to a specific asset.

Asset Market

The asset payoff distribution is:

$$V = \begin{cases} 1, & \text{with probability } \mu, \\ 0, & \text{with probability } 1-\mu. \end{cases}$$

Each individual chooses:

$$x_i = \begin{cases} 1, & \text{enter the market,} \\ 0, & \text{do not enter.} \end{cases}$$

Material return of the asset:

$$r_i(x_i) = \begin{cases} V - p, & \text{if entry } (x_i = 1), \\ 0, & \text{if non-entry } (x_i = 0). \end{cases}$$

Modeling FoMO

Our approach

We model **Fear of Missing Out (FoMO)** as anticipated regret from choosing non-entry and later observing that peers earned positive investment returns.

Key idea

Unlike standard regret, FoMO is generated by **anticipated exposure to successful peer investment outcomes**.

Why Regret Theory?

- Regret theory assumes that individuals anticipate future regret when making current decisions (Bell, 1982; Loomes and Sugden, 1982).
- Utility depends on comparisons between realized and counterfactual outcomes.
- This provides a natural framework for modeling FoMO as anticipated regret.

Our extension

The counterfactual is generated by **successful peer investment outcomes**, rather than only by one's own forgone investment returns.

Utility with Anticipated Regret

Individuals choose x_i to maximize expected modified utility:

$$u_i(x_i, X_{-i}, \sigma) = u\big(r_i(x_i, \sigma)\big) + \underbrace{f_i(x_i, X_{-i}, n_i, \sigma)}_{\text{Regret function}}.$$

Components

- $u(\cdot)$: utility from the realized material payoff.
- $f_i(\cdot)$: anticipated regret from comparing realized and counterfactual outcomes.

Regret Function

$$f_i(x_i, X_{-i}, n_i, \sigma) = -\eta \sqrt{\underbrace{n_i \cdot \max_{j \in N_i} r_i(x_j, \sigma)}_{m_i(x_i, X_{-i}, n_i, \sigma)} - r_i(x_i, \sigma)}.$$

Parameters

- η: regret sensitivity.
- n_i: expected number of peers whose successful investment outcomes become observable.

Interpretation

- Regret arises from comparing the **realized payoff** with the **counterfactual payoff**.
- **Our innovation:** anticipated regret is **socially amplified** by the expected number of observable successful peer outcomes (n_i).

Interpretation of the Regret Function

The regret function distinguishes between the following cases:

$$f_i(x_i, X_{-i}, n_i, \sigma) = \begin{cases} -\eta\sqrt{(1-p)n_i}, & x_i = 0,\ X_{-i} = 1,\ \sigma = 1, \\ -\eta\sqrt{p}, & x_i = 1,\ X_{-i} = 0,\ \sigma = 0, \\ 0, & \text{otherwise.} \end{cases}$$

FoMO

- Individual does not enter.
- Peers enter and earn positive returns.
- Regret increases with the expected number of observable successful peer outcomes (n_i).

Standard Regret

- Individual enters but the investment is unsuccessful.
- Choosing not to invest is generally less socially visible.
- Regret is not socially amplified.

Solution

Objective

- Derive the conditions under which an individual chooses to enter the market.

Decision environment

- Each individual chooses whether to enter the market, taking the strategy profile of peers as given.
- Analyze individual i's entry decision as a **best response** to the strategy profile of peers.

Peer environment

- To study FoMO, we focus on the case where peers enter the market:
  - $X_{-i} = 1$, with $n_i = |N_i|$.

Solution: Benchmark Case

Without FoMO

Market entry is determined by expected returns.

Entry occurs if

$$\hat{u}_i(x_i = 1) \geq \hat{u}_i(x_i = 0)$$
$$\iff \quad \hat{\mu} \geq p.$$

- If $\hat{\mu} \geq p$: **Enter.**
- If $\hat{\mu} < p$: **Do not enter.**

Interpretation

- Entry depends on expected returns.

$\implies$ *This benchmark provides the reference point for identifying the effect of FoMO.*

Solution: FoMO Case

With FoMO

Compare expected modified utility conditional on peers entering the market.

Entry occurs if

$$\hat{u}_i(x_i = 1, X_{-i} = 1) \geq \hat{u}_i(x_i = 0, X_{-i} = 1)$$

$$\iff \eta \geq \frac{p - \hat{\mu}}{\hat{\mu}\sqrt{(1-p)|N_i|}} \qquad \textbf{(Threshold 1)}$$

Interpretation

- Threshold 1 characterizes the level of FoMO required to induce market entry.
- If expected returns are negative ($\hat{\mu} < p$), entry may still occur when FoMO is sufficiently strong.

$\implies$ **FoMO lowers the threshold for financial market entry.**

Theoretical Prediction

From Threshold 1

$$\eta \geq \frac{p - \hat{\mu}}{\hat{\mu}\sqrt{(1-p)|N_i|}}.$$

Define

$$A \equiv \eta\sqrt{(1-p)|N_i|}.$$

Then the entry condition becomes

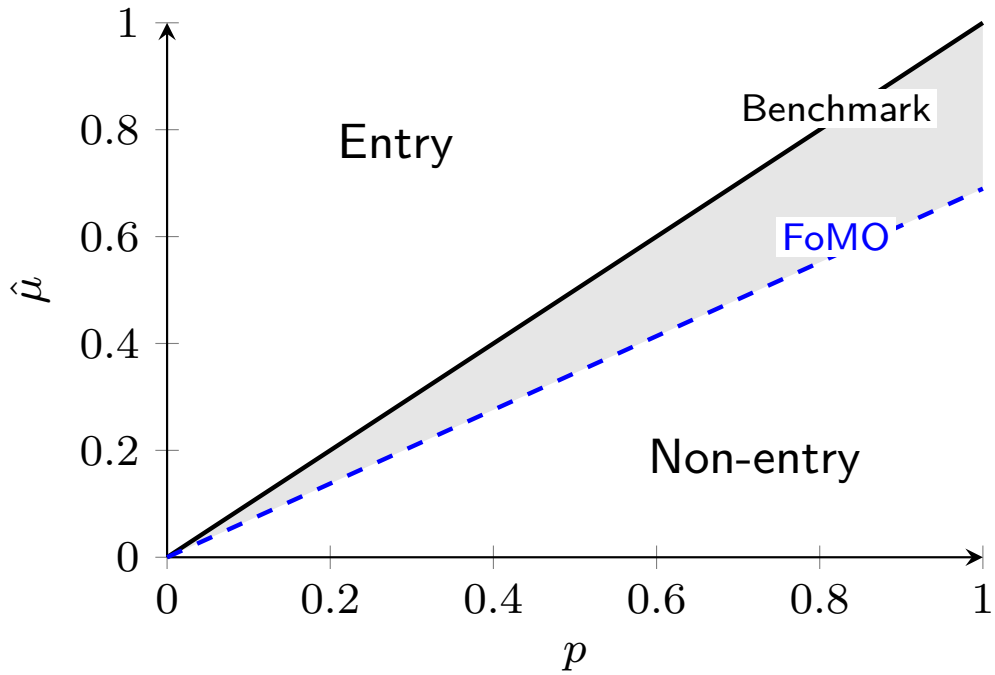
$$\underbrace{\hat{\mu} \geq \frac{p}{1+A}}_{\text{FoMO}} \qquad \underbrace{\hat{\mu} \geq p}_{\text{Benchmark}}$$

Predictions

- FoMO lowers the minimum expected return required for market entry.
- The magnitude of FoMO increases with anticipated exposure to successful peer outcomes ($|N_i|$).

FoMO Lowers the Entry Threshold

Illustrative example with $A = 0.45$.



- Relative to the benchmark, FoMO lowers the threshold for market entry.
- The shaded area represents excess market entry induced by FoMO.

Experiment

Experimental approach

- The design builds on the literature on **anticipated regret**, where feedback about foregone outcomes is used to induce regret-minimizing behavior (Zeelenberg et al., 1996; Zeelenberg and Beattie, 1997; Filiz-Ozbay and Ozbay, 2007).

Treatment structure

The experiment uses a 2×2 **between-subjects design**.

- **Peer environment:** pair or group of four participants.
- **Feedback condition:** participants are informed whether they may receive feedback on successful investment outcomes of other group members.

Feedback Treatment

Additional Information: One or more participants in your group received the high investment payoff.

Experimental Task

Choice	Option A	Option B	Difference
1	Keep 50	50% of 300, 50% of 20	+90
2	Keep 50	50% of 150, 50% of 20	+15
3	Keep 50	50% of 140, 50% of 20	+10
4	Keep 50	50% of 130, 50% of 20	+5
5	Keep 50	50% of 120, 50% of 20	0
6	Keep 50	50% of 110, 50% of 20	-5
7	Keep 50	50% of 100, 50% of 20	-10
8	Keep 50	50% of 90, 50% of 20	-15
9	Keep 50	50% of 80, 50% of 20	-20
10	Keep 50	50% of 30, 50% of 20	-45

Example MPL task (Holt and Laury, 2002) ($p = 20$).

- Participants choose the switching point from Option B to Option A.
- The switching row identifies each participant's investment threshold.
- Later switching indicates greater willingness to invest.

Experimental Predictions

Model Predictions

- Anticipated peer feedback increases willingness to invest, leading participants to switch later from the risky asset to the safe option.
- Larger groups strengthen this effect by increasing anticipated exposure to successful peer investment outcomes.

Hypotheses

H1 Feedback increases switching thresholds in pairs.

H2 Feedback increases switching thresholds in groups with 4 participants.

H3 The feedback effect is stronger in groups with 4 participants than in pairs.

Experimental Flow

Step 1: Decision task

Step 2: FoMO questionnaire FoMO Scale

- Before learning outcomes or receiving feedback, participants complete an 8-item FoMO scale following Friederich et al. (2024).

Step 3: Anticipated regret scale

- Participants report the intensity of emotions they anticipate experiencing (e.g., regret, happiness, anger) under different possible outcome scenarios, adapted from Filiz-Ozbay and Ozbay (2014).

Step 4: Demographics

Step 5: Outcome realization and peer feedback

- One choice is randomly selected for payment.
- Depending on the treatment, participants receive feedback only about their own outcome or also about successful peer investment outcomes.

Conclusion

Main contribution

- We model FoMO as **socially amplified anticipated regret** arising from the possibility of missing peers' successful investment outcomes.

Main theoretical prediction

- FoMO lowers the threshold for financial market entry even when expected returns are negative.
- Greater anticipated exposure to successful peer outcomes ($|N_i|$) amplifies FoMO, lowering the entry threshold further.

Experiment

- Aim to test whether anticipated peer feedback increases switching thresholds in the MPL task.
- Larger peer groups lead to higher switching thresholds than pairs.

Thank you!

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Derivation of Threshold 1

Case 1: Peers Enter the Market
Expected modified utility from entry:

$$\hat{u}_i(x_i = 1, X_{-i} = 1) = \hat{\mu}\, u(1-p) + (1-\hat{\mu})\, u(-p).$$

Expected modified utility from non-entry:

$$\hat{u}_i(x_i = 0, X_{-i} = 1) = \hat{\mu}\Big(u(0) - \eta z\sqrt{(1-p)|N_i|}\Big) + (1-\hat{\mu})u(0).$$

Interpretation

- Anticipated regret arises only in the good state.
- Individual i experiences regret from forgoing gains realized by peers.

Entry occurs if:

$$\hat{u}_i(x_i = 1, X_{-i} = 1) \geq \hat{u}_i(x_i = 0, X_{-i} = 1).$$

Rearranging gives:

$$\eta z\sqrt{(1-p)|N_i|} \geq \frac{p-\hat{\mu}}{\hat{\mu}}. \qquad \textbf{(Threshold 1)}$$

Threshold 2 (No Peer Entry)

Non-entry occurs if

$$\hat{u}_i(x_i = 0, X_{-i} = 0) \geq \hat{u}_i(x_i = 1, X_{-i} = 0)$$

which implies

$$\eta \geq \frac{\hat{\mu} - p}{\sqrt{p}\,(1 - \hat{\mu})}. \qquad \textbf{(Threshold 2)}$$

Interpretation

- Threshold 2 captures the intensity of **standard regret aversion**.
- Regret arises from making an unsuccessful investment that could have been avoided by choosing non-entry.
- Unlike Threshold 1, regret is **not socially amplified** because no successful peer outcomes are expected to become observable.

Survey Measures

Step 2: FoMO Scale Measure

- Participants complete an **8-item FoMO scale** following Friederich et al. (2024).
- The scale captures fear of missing rewarding investment opportunities and social comparison concerns in general.

Example items:

- "I'm afraid that later I will feel sorry I did not invest."
- "I will worry my friends are getting more rewards than me."
- "I will feel bothered that I missed an opportunity to invest."

Step 3: Anticipated Regret Scale

- Before receiving feedback, participants rate the intensity of anticipated emotions (*regret, anger, happiness*) under hypothetical outcome scenarios based on the experiment, following Filiz-Ozbay and Ozbay (2007).

Example scenarios:

- Choosing Option A and later observing that participants in the group earned the highest payoff.
- Choosing Option B, incurring a loss, and observing that participants in the group avoided this loss.

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