

Good Peers, Good Apples: Peer Effects Lead to Better Financial Outcomes

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Introduction

Social interactions and advice has been linked to herding behavior (Shiller, 2015), financial mistakes (Heimer, 2016) and bubbles (Pedersen, 2022)

- Underlying assumption is that social interactions is about **specific** assets.
- Literature on social ties is often about **participation** in risky asset markets (Kaustia & Knüpfer, 2012; Ouimet & Tate, 2019; Haliassos *et al.* , 2020)

Research question: do social ties propagate good or bad investment behavior?

- Good advice: participation in funds, ETFs
- Bad advice: participation in high attention “meme”-stocks, lottery-type stocks (Bali *et al.* , 2021), stocks with high skewness and vol (Han *et al.* , 2022)

This paper

1. Peer effects work through recommendation of **single assets**
2. Recommendation is more likely if the Recommender has a **higher** quality portfolio
3. Recommended assets are more likely to be funds and lead to **higher** portfolio quality

Obstacles on the way and our solutions

Studying the effect of social ties on portfolio composition is complicated :

1. Lack of data on portfolio composition

→ We use data from a German bank including detailed portfolio data

2. Peer relationships are often unobserved

→ We use data from a referral campaign to identify social ties

3. Difficult to identify peer effects

→ We argue that *overlap* in portfolio composition strongly suggest that individuals recommend specific assets to their friends

Data and methodology

Data from a large German online bank 2003 - 2017

Data

258,000 randomly selected clients with detailed transaction (including securities accounts) and sociodemographic (age, gender, income) data

- Detailed data on portfolio composition
- Investors have access to 900,000 assets

Referral campaign active from 2012 - 2017

- Bank customers can recommend a person via their online bank by sending a Facebook message or a link via email
- 20 Euro or non-cash (mixers, suitcases, headphones or coffee machines)
- 533 Recommender - Follower pairs

Sample selection and methodology

Data

Sample selection:

- We select customers with active trading accounts and with non-zero AUM
- Select individuals who joined the bank after 2012
- We select the first twelve months of trading to avoid learning and luck having an influence on portfolio choice

Overlap analysis helps separate true peer effects

Methodology

Most factors that could explain peer effects operate at the level of the portfolio

- Correlated risk aversion, background risk or local bias
- The **overlap** (share of common securities in Follower portfolio) in individual assets is our evidence for peer effects

$$Overlap_i^F = \frac{\sum_{k=1}^K V_k \mathbb{1}_{k=m}}{\sum_{k=1}^K V_k}$$

We fix Recommender portfolio 1 month prior to Follower joining the bank to establish direction of causality and construct placebo pairs to examine how rare overlap actually is

Portfolio quality based on a CAPM-model Calvet *et al.* (2007)

Portfolio quality

Relative Sharpe Ratio loss – Measure of diversification loss

$$RSRL_i = 1 - \frac{\overbrace{S_i}^{\text{Sharpe ratio portfolio}}}{\underbrace{S_B}_{\text{Sharpe ratio benchmark}}}.$$

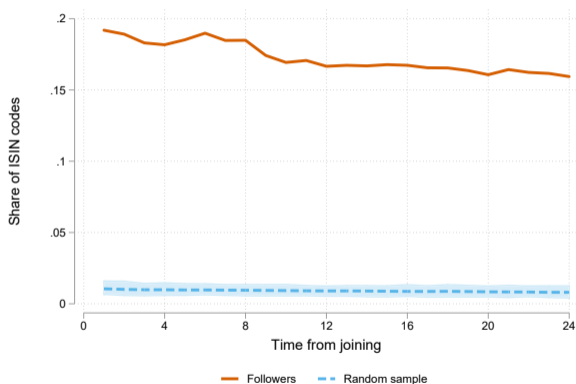
Return Loss – Lost return due to choosing portfolio instead of benchmark and cash

$$RL_i = \underbrace{(Er_m^e)}_{\text{Expected excess return on market portfolio}} \times \underbrace{w_i \beta_i}_{\text{Weight on stocks x beta}} \times \underbrace{\left(\frac{RSRL_i}{1 - RSRL_i} \right)}_{\text{Sharpe ratio loss transformation}}$$

Overlap and portfolio quality

Overlap is significantly higher for Followers

Overlap



Placebos: Matched Followers & Matched Recommenders.

Overlap distribution

Overlap with all investors

Overlap is higher for Followers with better Recommenders

$$Overlap_{i,k,t} = \alpha + \gamma RecQuality_i + \mathbf{X}'_{i,k}\beta + \delta_{i,k} + \epsilon_{i,k}$$

	Return loss				Relative Sharpe ratio loss			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Rec: log Return loss	-0.070*** (0.023)	-0.069*** (0.023)	-0.050** (0.025)	-0.054** (0.025)				
Rec: log RSRL					-0.109*** (0.031)	-0.105*** (0.032)	-0.067* (0.035)	-0.071** (0.035)
Follower controls								
Controls	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Recommender controls	No	No	No	Yes	No	No	No	Yes
Region#Year fixed effect	No	No	Yes	Yes	No	No	Yes	Yes
Observations	407	407	395	395	407	407	395	395
Adjusted R^2	0.024	0.017	0.061	0.073	0.025	0.017	0.058	0.071

Peer effects in portfolio quality

$$y_{i,k} = \alpha + \gamma \text{Follower}_{i,k} + \mathbf{X}'_{i,k} \beta + \delta_{i,k} + \epsilon_{i,k}$$

	Log Return loss				Log Relative Sharpe ratio loss			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Follower	-0.27*** (0.05)	-0.11** (0.05)	-0.08 (0.05)	-0.00 (0.07)	-0.28*** (0.03)	-0.10*** (0.03)	-0.09*** (0.03)	-0.05 (0.04)
Follower × Positive Overlap				-0.20* (0.11)				-0.11 (0.07)
Controls	No	No	Yes	Yes	No	No	Yes	Yes
Region#Year fixed effect	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Dep. var. mean	-6.73	-6.73	-6.73	-6.73	-1.39	-1.39	-1.39	-1.39
Dep. var. std. dev	1.31	1.31	1.31	1.31	0.83	0.83	0.83	0.83
Number of Followers	515	515	515	515	515	515	515	515
Observations	25605	25605	25605	25605	25605	25605	25605	25605

Peer effects in investment styles

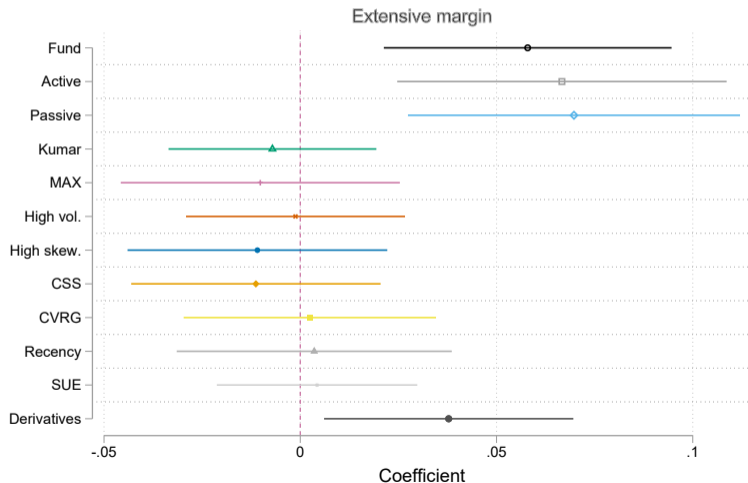
Why Lower Diversification Loss?

We classify different investment styles as “good” and “bad”

- **Good** investment styles are participation in funds
 - increases diversification
 - correlated with *lower* Return loss and RSRL
 - should improve portfolio performance (French, 2008), but exceptions (Bhattacharya *et al.* , 2017; Ben-David *et al.* , 2021)
- **Bad** investment styles are participation in high risk, high skew assets
 - lottery stocks, high attention stocks, and derivatives
 - correlated with *higher* Return loss and RSRL
 - linked to unsophisticated investor types (Kumar, 2009; Dorn *et al.* , 2015)
 - structured retail products and derivatives are costly and generally underperform (Vokata, 2021)

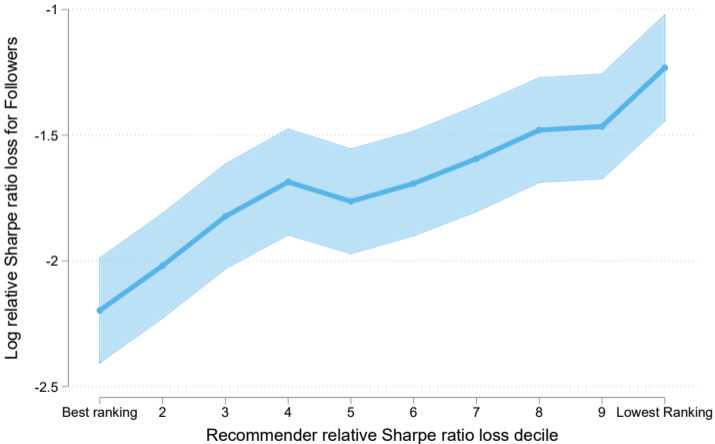
Investment styles - Extensive margin

Do Followers invest more than the matched sample?



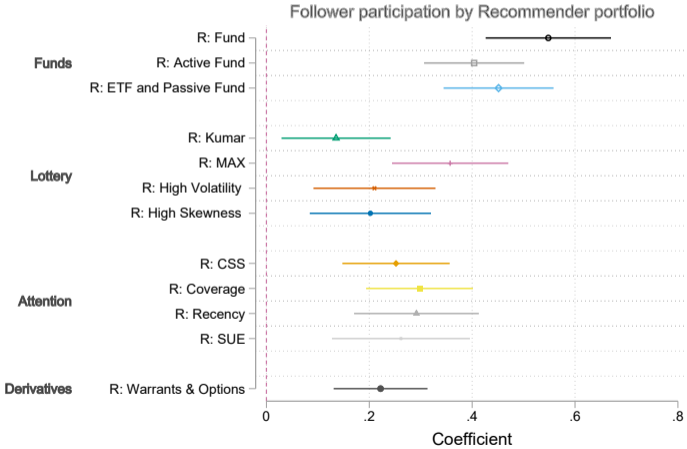
Is Follower performance driven by peer effects?

Correlation in Log Relative Sharpe ratio loss



Correlation in investment styles

If Recommender invest, what is the probability that the Follower invests?



Conclusions

Conclusion I

Peer effects leads to overlap in portfolio composition and similarities in portfolio quality

→ Scope for both good and bad advice about **individual assets** to spread through social networks

Who gives the advice is paramount for understanding whether peer effects propagates good or bad investment behavior

- In our case, Recommenders are positively selected
- Is this a general result?

Conclusion II – we observe a different type of social links

Recommenders-Follower pairs are characterized by a personal relationship which likely precedes the observed financial advice

→ Recommenders may be incentivized by reputational costs, social utility (Bursztyn *et al.*, 2014), or 'warm glow,' to recommend sound financial advice

Incentives are unrelated to the performance of own or referred portfolios, and unconditional on (quality) advice shared between Recommender and Follower.

- Financial advisors characterized by a credence relationship with principal-agent conflicts due to information asymmetry and incentives (Mullainathan *et al.*, 2012)

[Appendix

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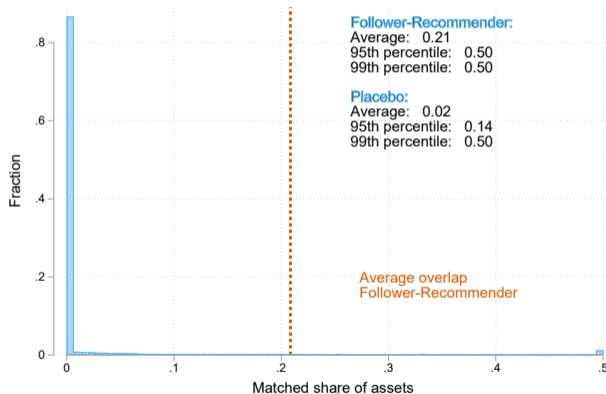
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References III

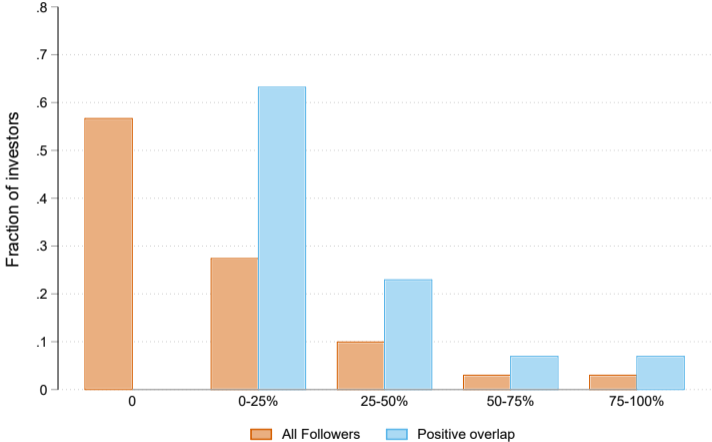
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Overlap between each Follower with ALL investors

Overlap



Overlap Distribution



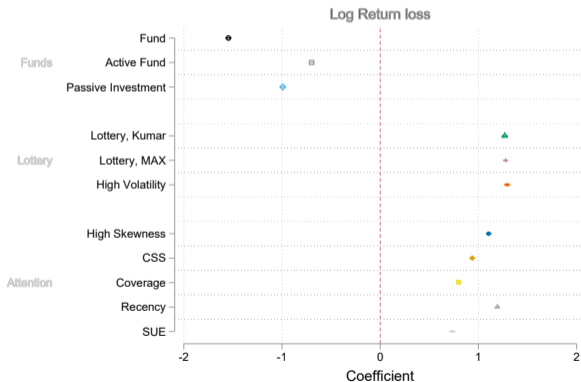
Return Loss components

$$\ln RL_i = \ln(Er_m^e) + \ln w_i + \ln \beta_i + \ln \left(\frac{RSRL_i}{1 - RSRL_i} \right).$$

	Return loss $\ln(RL_i)$	Risky share $\ln w_i$	Risky portfolio beta $\ln \beta_i$	Diversification loss $\ln \left(\frac{RSRL_i}{1 - RSRL_i} \right)$
Follower	-0.04 (0.06)	0.17*** (0.04)	0.08** (0.03)	-0.16*** (0.05)
Region fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes
Age fixed effect	Yes	Yes	Yes	Yes
Observations	19117	19410	18486	18507
Adjusted R^2	0.029	0.053	0.021	0.035

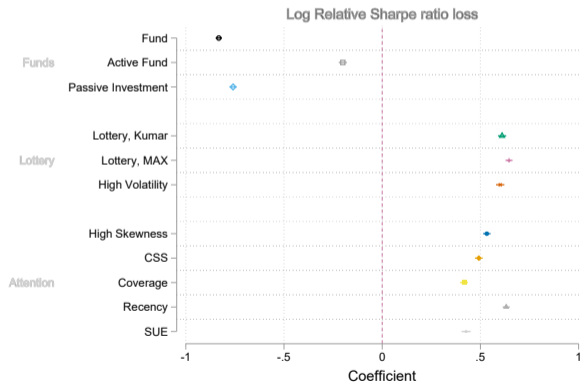
Return loss and investment styles

$$\ln RL_i = \alpha + Participation_j + \epsilon$$



Relative Sharpe ratio loss and investment styles

$$\ln RSRL_i = \alpha + Participation_j + \epsilon$$



Are Peers Better? Relative Sharpe Ratio loss for Recommenders and population

