The Economic Impact of Distributing Financial Products on Third-Party Online Platforms

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The Rise of the Platform Economy

- Empowered by technological innovations, platforms are like intermediaries on steroids:
  - vastly improve the means of connectivity,
  - profoundly re-shape the flow of information,
  - and transform the way we live.
- The widely adopted platforms have disrupted their respective industries:
  - Google for information.
  - Amazon and Taobao for retails.
  - Facebook and Wechat for social networking.
  - Uber and Didi for taxi rides.
  - Meituan for food delivery.
- This paper: What happens when third-party online platforms are allowed to intermediate financial products?

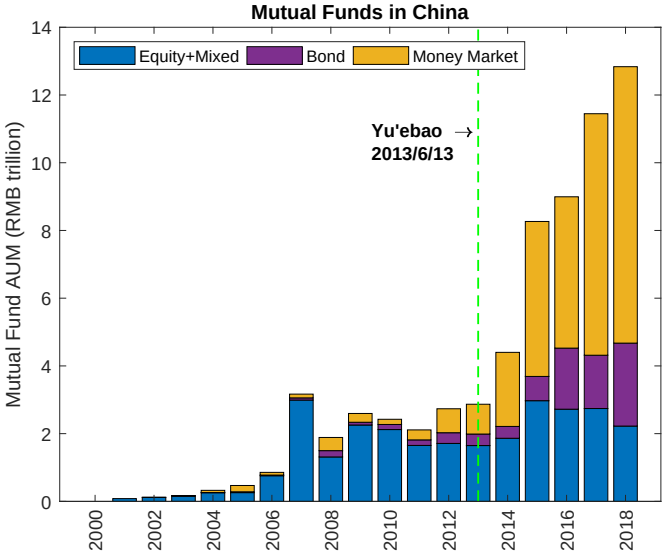
Word Cloud from 156 FinTech Proposals submitted to *RFS* in 2017

Source: "To FinTech and Beyond" by Goldstein, Jiang, and Karolyi, Review of Financial Studies, 2019

Asset Management in China

- Estimated at around RMB 100 trillion by 2018:
  - Wealth management products: 32 trillion.
  - Trust products: 22 trillion.
  - Asset management products: 50 trillion.
- Household savings are 23% of GDP, 15% higher than the global average in 2016.
- Mutual funds: 12.8 trillion, including 8 trillion money market funds.
  - Limited presence; huge potential.
  - Incoming competition from foreign asset-management companies.
  - Increasing partnerships with tech firms: Vanguard with Ant Financial; Blackrock in talks with Tencent.

Mutual Funds in China



The Traditional Distribution Channels

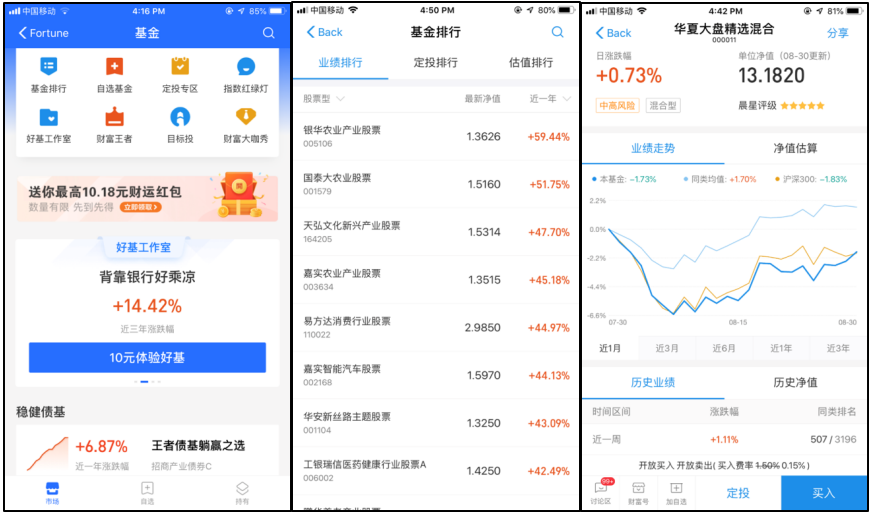
- Traditionally, the intermediation of mutual funds are segmented by distribution channels organized by fund families, banks, and brokers:
  - Different distribution channels offer different collections of funds.
  - The offering also varies within one distribution channel across different branches and advisers.
- In this traditional model, the flow of information
  - is severely barricaded and segmented, both within and across the vast number of distribution channels.
  - can also be biased, as the distribution channels promote their own affiliated funds more aggressively, both online on their websites and offline at their local branches.

The Third-Party Online Platforms (TPOP)

TPOPs are created by tech-driven firms that are independent of the traditional distribution channels. As with any platforms,

- Successful TPOPs thrive on scale – vast fund coverage and large user base.
- TPOPs overwhelmingly improve the means of connectivity:
  - take down the barriers,
  - allow information to flow more freely,
  - and level the playing field for all mutual funds.
- TPOPs offer technological efficiency – mobile apps allow for quick and convenient access to trading, moving away from the traditional physical counters and pc-based websites.

TPOP Mobile Apps



Our Motivation: Understand the Economic Impact of TPOPs

- As the platforms make the **distribution of funds** more efficient, do they also make the **allocation of risk** more efficient for investors?
- As the platforms improve the **means of connectivity**, what is the impact on the **means of production**, particularly for the actively-managed mutual funds?
- More generally, what are the economic consequences, *both intended and unintended,* of this new and powerful distribution channel on:
  - fund investors,
  - fund managers,
  - and fund families?

Our Main Findings

- On investor behavior: striking increase in performance chasing associated with the emergence of TPOPs.
- On fund managers: increased risk taking to enhance the probability of getting into the top rank.
- On fund families: the organizational structure of large fund families weakens as the introduction of platforms levels the playing field for all funds.

The Existing Literature

- **FinTech:** General discussions by Goldstein, Jiang, and Karolyi (2019), Philippon (2018), and Frost et al. (2019). Using proprietary data, Hau et al. (2017) on FinTech credit for small businesses, and Sun et al. (2019) on how platforms can influence customer buying behavior via the control of information flow.
- **Mutual Funds:** Convex flow-performance relation documented by Gruber (1996), Brown, Harlow, and Starks (1996), and Chevalier and Ellison (1997); Added effect of visibility: Kaniel and Parham (2017); Conflicts of interest on mutual fund advising by Bergstresser, Chalmers, and Tufano (2009), Chalmers and Reuter (2012), Christoffersen, Evans, and Musto (2013), etc.

Data and Key Variables

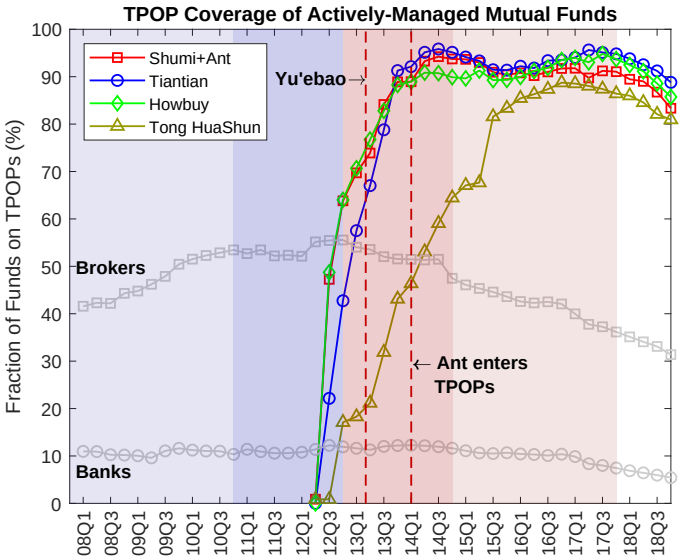
We use CSMAR for fund level data including fund returns and size; Wind for data on funds' entrance onto TPOPs. Our sample includes actively-managed equity, mixed, and bond funds from 2008 through 2018.

- **Performance Deciles:** Each quarter, actively-managed funds within each style (equity, mixed, and bond) are sorted by their past-12 month returns into deciles. Funds in the top decile have the best past performance.
- **Quarterly Flow:**

$$\text{Flow}_t^i = \frac{\text{TNA}_t^i - \text{TNA}_{t-1}^i \, (1 + R_t^i)}{\text{TNA}_{t-1}^i},$$

  where R_t^i is the quarter-t return of fund i and TNA_t^i is its total net asset value.
- **Platform Coverage:** $\text{Platform}_t^i = 1$ if fund i is covered by both Tiantian (2012Q3) and Ant Financial (2014Q2) during quarter t.

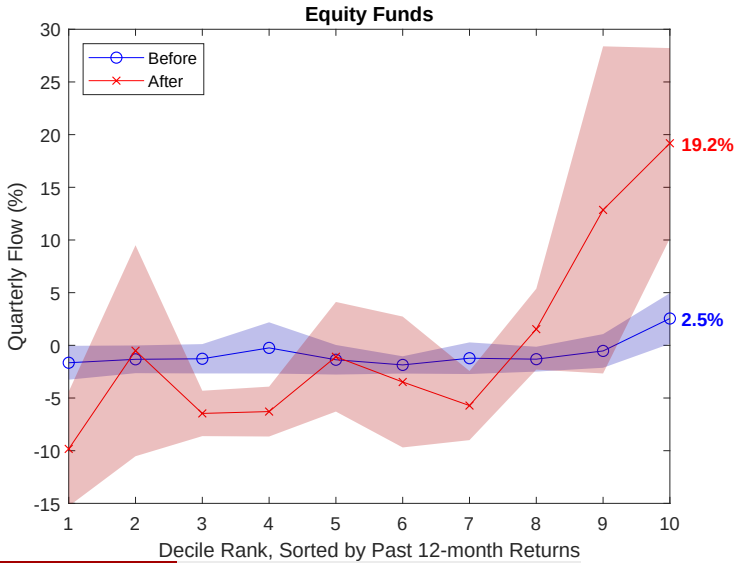
Swift Adoption of TPOPs



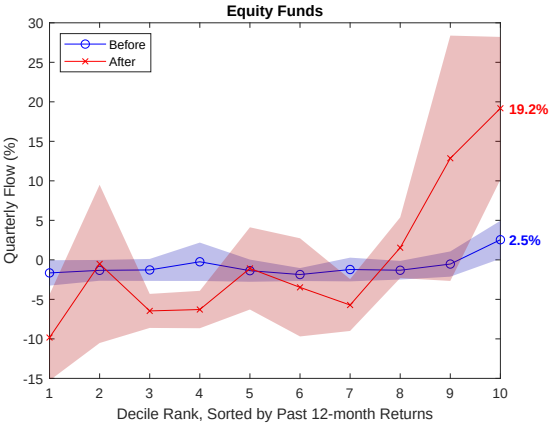
On Investor Behavior: Amplified Performance Chasing

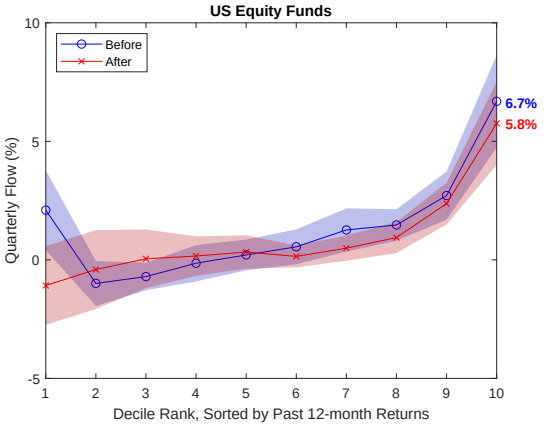
- Quarterly flow to top-decile equity funds increases from 2.55% before (2008-2012) to 19.18% after (2013-2017).
- The staggered entrance of funds onto TPOPs provides further evidence on the connection between the amplified performance chasing and the penetration of TPOPs.
- Proprietary data from Howbuy: 49.37% of the quarterly purchases on Howbuy goes to the top-decile funds. The whole market: 37.61% goes to the top-decile funds during the same period, and 23.79% pre-platform.
- The amplified performance chasing shows up in both equity and mixed funds, with mixed evidences for bond funds.

Fund Flow and Past Performance

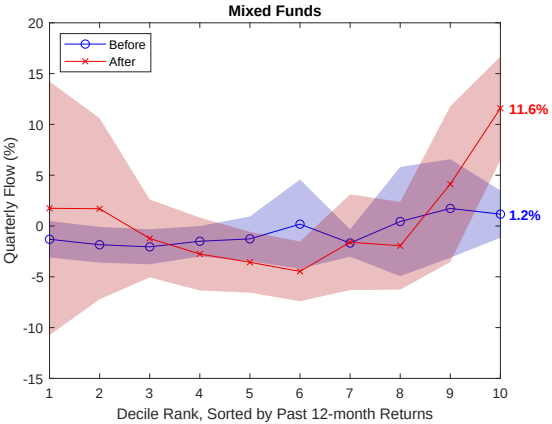


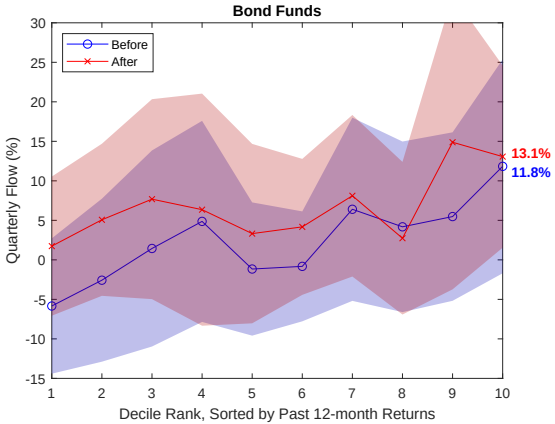
Fund Flow and Past Performance



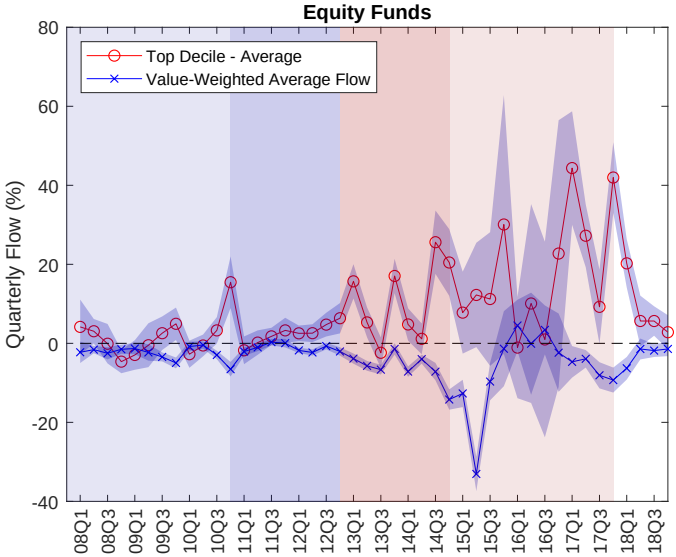


Fund Flow and Past Performance

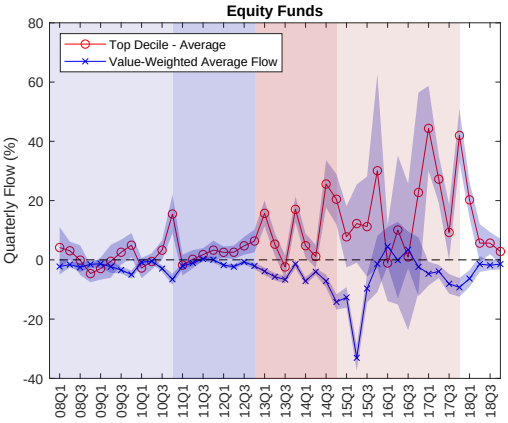


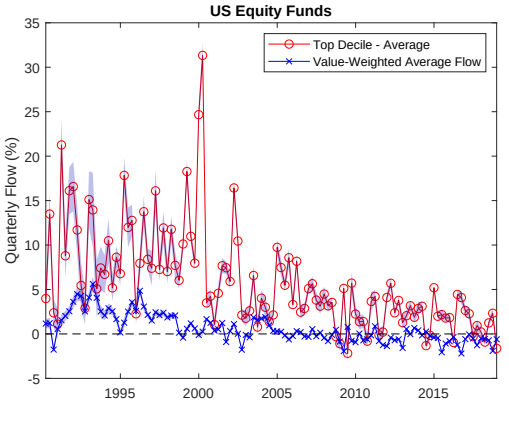


Time-Series Variation of Performance Chasing

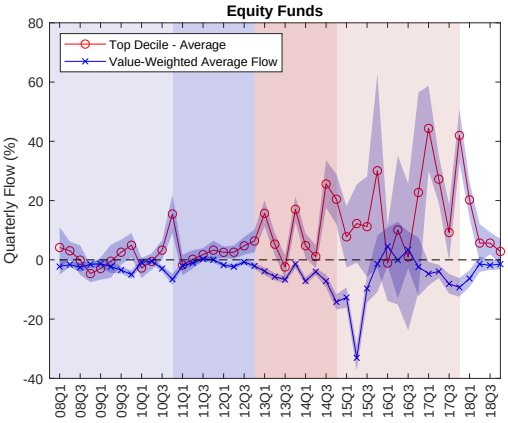


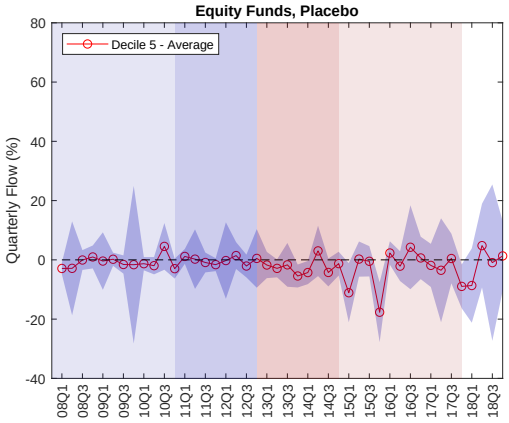
Compared with Actively-Managed US Equity Funds



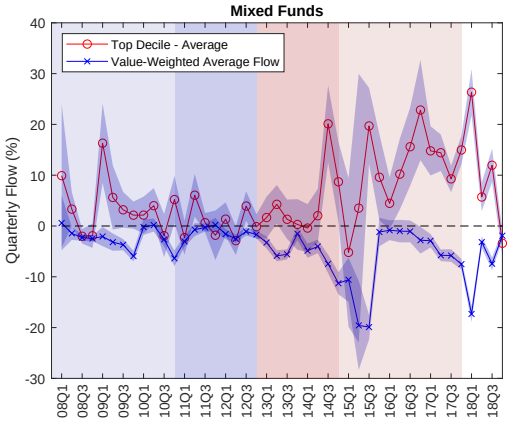


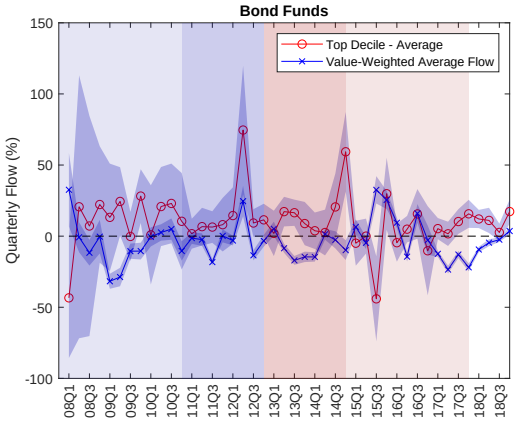
Compared with Funds in Decile 5





Mixed and Bond Funds





Panel Regression using Staggered Fund Entrance onto TPOPs

$$\text{Flow}_t^i = a + b\,\text{Decile10}_{t-1}^i + c\,\text{Decile10}_{t-1}^i \times \text{Platform}_t^i + d\,\text{Platform}_t^i + \text{Controls} + \epsilon_t^i$$

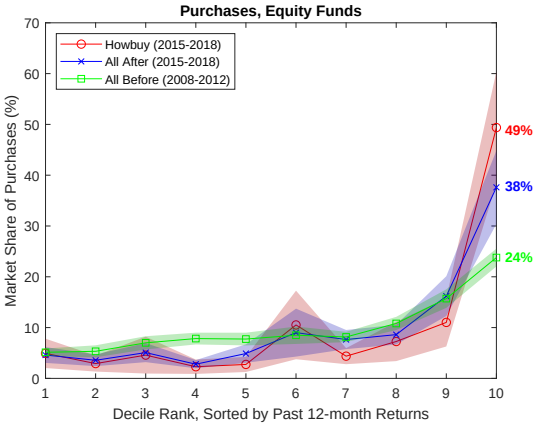
	Equity	Mixed	Bond
Decile10	7.181***	5.040***	8.590***
	[6.86]	[3.79]	[2.64]
Decile10×Platform	18.602***	13.080***	-2.229
	[3.81]	[4.94]	[-0.46]
Platform	-4.714	1.643	-0.376
	[-1.41]	[0.87]	[-0.11]
Controls, Time FE	Y	Y	Y
Observations	6,700	12,935	6,630
R-squared	0.056	0.054	0.099

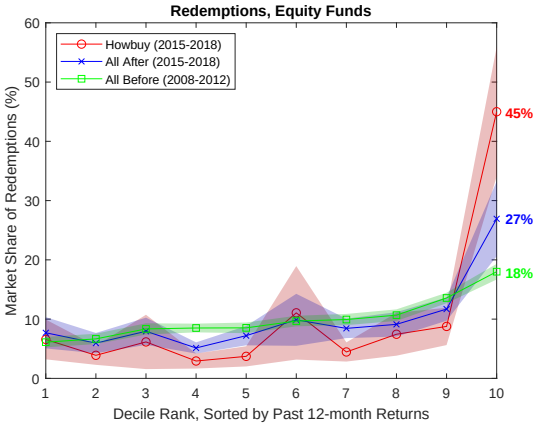
Panel Regression, Event Window Shrunk to 2011-2014

$$\text{Flow}_t^i = a + b\,\text{Decile10}_{t-1}^i + c\,\text{Decile10}_{t-1}^i \times \text{Platform}_t^i + d\,\text{Platform}_t^i + \text{Controls} + \epsilon_t^i$$

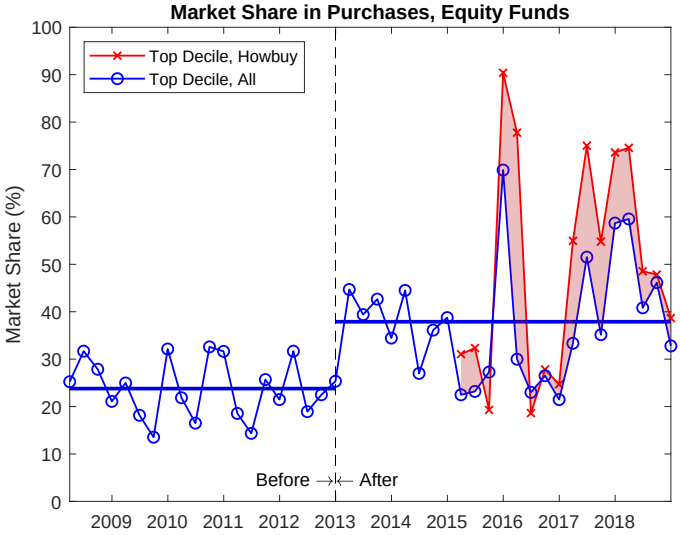
	Equity	Mixed	Bond
Decile10	6.647***	3.541***	10.086***
	[5.43]	[2.81]	[3.75]
Decile10×Platform	22.514***	12.981**	26.975**
	[2.98]	[2.54]	[2.10]
Platform	-6.723	1.208	8.398
	[-1.62]	[0.32]	[1.54]
Controls, Time FE	Y	Y	Y
Observations	3,996	2,873	1,861
R-squared	0.101	0.083	0.138

Direct Evidence from Howbuy





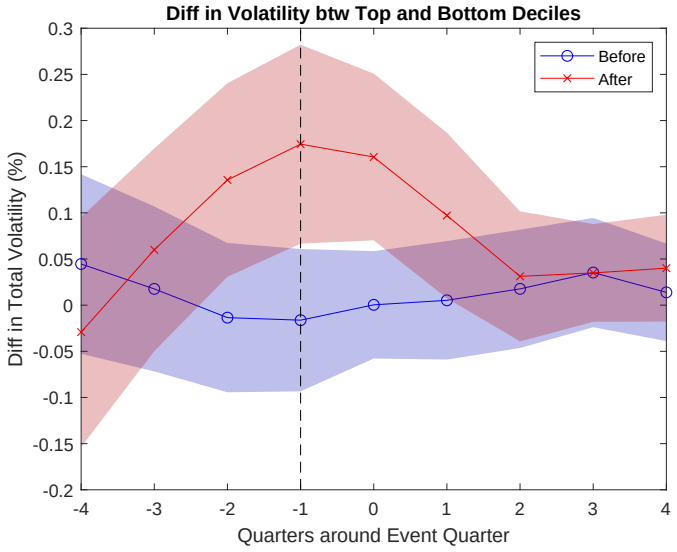
Direct Evidence from Howbuy, Time-Series Variation



On Fund Managers: Increased Risk Taking

- In the presence of amplified performance chasing, fund managers increase their risk taking to enhance the probability of getting into the top rank.
- Post 2013, funds in the top decile exhibit a pattern of increased volatility for at least two quarters prior to getting into the top ranking. By contrast, funds outside of the top decile do not exhibit such a pattern.
- The added risk taking is present in both systematic and idiosyncratic volatility:
  - Prior to 2013, fund managers rely on their own abilities in stock and bond selections, via increased idiosyncratic volatility, to get into the top decile.
  - Post 2013, the risk taking behavior increases not only in the idiosyncratic component, but also in the systematic component.
- Repeating the same exercise for the US equity mutual funds, we find no evidence of increased risk taking by the top decile funds.

Risk Taking in Equity Funds, Diff in Top and Bottom Deciles



Risk Taking, Measured by Total Volatility

$$\text{Volatility}^i_{t+k} = a + b\,\text{Decile10}^i_{t-1} + c\,\text{Decile10}^i_{t-1} \times \text{After}_t + \text{Controls} + \epsilon^i_{t+k}$$

	Total Volatility (%)						
	$k=-3$	$k=-2$	$k=-1$	$k=0$	$k=1$	$k=2$	$k=3$
Decile10	-0.021	-0.019	-0.017	0.000	0.012	0.02	0.014
	[-0.82]	[-0.77]	[-0.82]	[0.02]	[1.08]	[1.39]	[0.86]
Decile10×After	0.081**	0.100***	0.114***	0.083***	0.017	-0.006	-0.015
	[2.22]	[3.04]	[3.55]	[3.06]	[0.90]	[-0.27]	[-0.68]

Risk Taking, Systematic and Idiosyncratic Volatility

	$k=-3$	$k=-2$	$k=-1$	$k=0$	$k=1$	$k=2$	$k=3$
			Idiosyncratic Volatility (%)				
Decile10	0.033**	0.052***	0.049***	0.037***	0.031***	0.030*	0.017
	[2.28]	[3.95]	[4.02]	[3.16]	[3.46]	[2.01]	[1.03]
Decile10× After	0.042*	0.048**	0.049**	0.033*	0.003	-0.015	-0.004
	[1.92]	[2.29]	[2.31]	[1.81]	[0.27]	[-0.78]	[-0.22]
			Systematic Volatility (%)				
Decile10	-0.035	-0.043	-0.041*	-0.017	-0.002	0.007	0.004
	[-1.30]	[-1.66]	[-1.88]	[-0.97]	[-0.15]	[-0.48]	[-0.27]
Decile10× After	0.05	0.067**	0.082**	0.068**	0.014	-0.001	-0.013
	[1.43]	[2.04]	[2.60]	[2.26]	[0.77]	[-0.03]	[-0.67]

On Fund Families: Weakened Organization Structure

- Before the rise of the platform economy, large fund families serve as mini-platforms, whose resources are attractive to fund managers.
- Post platforms, in an environment of leveled playing field, large fund families as organizations lose their cohesiveness.
- Our results show that, with the emergence of the platforms,
  - Fund managers are increasingly being compared against the entire universe of funds, while their relative standing within the family becomes less important in attracting investor flows.
  - The co-movement of fund flows weakens within family.
  - The incentive for fund family to groom star managers drops.

Within-Family Flow Competition

Family Ranking	1.278***		0.907***
	[5.71]		[3.76]
Family Ranking×Platform	-0.125		-0.814**
	[-0.32]		[-2.01]
Decile10		6.212***	4.788***
		[6.25]	[4.49]
Decile10×Platform		7.202***	8.468***
		[4.01]	[4.46]
Platform	-1.215	-2.198	-0.715
	[-0.75]	[-1.63]	[-0.44]
Controls	Y	Y	Y
Time, Family, and Style FE	Y	Y	Y
Observations	22,221	22,221	22,221
R-Squared	0.071	0.076	0.077

Within-Family Flow Correlation

	Family Flow=MaxFlow		Family Flow=Flow^{-i}	
Family Flow	0.068***	0.064***	0.268**	0.244**
	[6.28]	[5.71]	[2.63]	[2.54]
Family Flow×Platform	-0.020**	-0.016*	-0.183*	-0.155*
	[-2.22]	[-1.83]	[-1.87]	[-1.69]
Platform	3.404***	0.868	-2.674	-3.042**
	[2.84]	[0.83]	[-1.40]	[-2.13]
Decile10	2.584***	2.904***	6.042***	6.068***
	[3.44]	[3.92]	[4.66]	[4.52]
Decile10×Platform	6.853***	6.649***	7.548**	7.277**
	[3.44]	[3.32]	[2.06]	[2.08]
Controls	N	Y	N	Y
Time, Family, and Style FE	Y	Y	Y	Y
Observations	20,317	20,317	22,221	22,221
R-Squared	0.086	0.097	0.053	0.077

The Largest Ten Fund Families

	Before (2008-2012)				After (2013-2017)			
	Family	TNA (¥B)	#Funds (/family)	Share (%)	Family	TNA (¥B)	#Funds (/family)	Share (%)
1	华夏	109	14	8.97	华夏	93	21	6.37
2	博时	78	11	6.54	易方达	84	26	5.36
3	广发	69	7	5.76	嘉实	71	28	4.70
4	嘉实	62	12	5.23	南方	61	26	3.99
5	南方	59	12	4.74	广发	57	23	3.92
6	易方达	57	11	4.65	博时	58	28	3.88
7	大成	54	10	4.41	工银瑞信	55	26	3.58
8	富国	41	10	3.44	汇添富	54	21	3.52
9	景顺长城	40	8	3.40	富国	51	26	3.39
10	华安	41	8	3.28	中银	42	21	2.71
Largest Ten		61	10	50.42	Largest Ten	63	25	41.42
Rest (N=51)		15	6	49.58	Rest (N=78)	12	11	58.58

Percent of Funds from Top Families in Each Performance Decile

	Top 10		Top 5		华夏	
	Before	After	Before	After	Before	After
Decile 1	28.46	24.48	13.76	13.23	4.27	2.25
Decile 2	32.20	25.84	18.02	13.74	2.01	2.22
Decile 3	32.04	27.71	17.07	13.57	3.22	2.24
Decile 4	32.77	28.54	18.52	15.48	3.53	3.28
Decile 5	30.90	25.26	16.94	12.32	3.58	2.50
Decile 6	34.68	23.64	16.94	12.09	3.35	1.96
Decile 7	33.28	23.84	17.67	12.95	4.60	3.05
Decile 8	34.81	26.46	16.37	14.22	4.35	3.50
Decile 9	32.08	21.93	16.28	11.96	5.18	1.24
Decile 10	38.04	19.64	26.57	9.76	10.30	0.80
Decile 10-1	9.58***	-4.84*	12.82***	-3.47	6.03**	-1.46**
	[3.07]	[-1.99]	[4.73]	[-1.71]	[2.81]	[-2.57]

Conclusions

- The success of the platform economy has transformed the way we live. Platform intermediation of financial products could be among the next disruptions.
- Our paper documents, for the first time, empirical evidences on the economic impact of platform intermediation of financial products:
  - Distributional efficiency does not necessarily translate to allocational efficiency – the vast scale and informational efficiency associated with the platforms have the tendency to synchronize and amplify individual investor behavior.
  - Improvement in means of connectivity does not equate improvement in means of production – the amplified performance-chasing incentivizes fund managers to increase risk taking to enhance the probability of getting into the top rank.
  - How the traditional organization structures in financial intermediation can be disrupted by the emergence of the platform economy – the weakening fund-family ties.