

Investor Expertise and Private Investment Selection

Shane Miller¹ Emmanuel Yimfor² Ye Zhang³

¹University of Michigan ²Columbia University

³Stockholm School of Economics

2024 IPC Research Workshop Series

Growth of Accredited Individual Investors in Private Markets

Bloomberg

Businessweek | In Depth

The Rich Investor Club Is Getting Crowded

More US households than ever qualify as accredited investors. Asset managers are thrilled, but democratization has downsides.



Illustration: Timo Lenzen for Bloomberg Businessweek



PERSONAL FINANCE

Inflation gives millions new access to investments for the wealthy, says SEC

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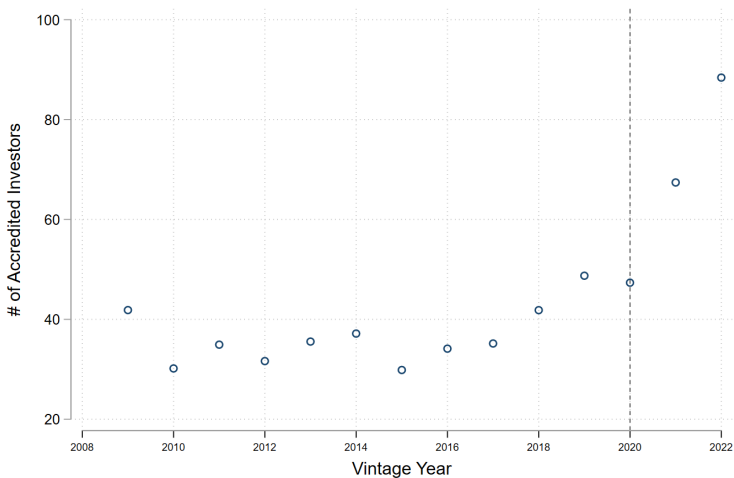


Greg Iacurci
@GREGIACURCI

KEY POINTS

- The number of "accredited" investors swelled to 24 million in 2022, the SEC said. That's 8 million more than in 2019, and the number is poised to keep growing.
- Accredited investors can buy private securities such as private equity, hedge funds and venture capital funds. They generally meet financial requirements tied to net worth or annual income.
- Private investments used to be earmarked for roughly the top 2%. Now, about 1 in 5 households can buy them.

Growth of Accredited Individual Investors in Private Markets



Research Question and Empirical Challenges

Despite the rapid growth of individual investors in private markets, little is known about their private market investment patterns.

This Paper: Provides the first empirical evidence of how private-market investments by individual investors differ from those of professionals

Setting: Focus on the venture capital (VC) fund selection process.

Empirical Challenges:

- Lack of data on individual investors' investment patterns
- Hard to separate VC fund access from VC fund selection

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Empirical Method: Survey Experiments with US LPs

Participants: 593 institutional and 445 individual accredited US limited partners (LPs)

- Individual LPs: Have experience investing in VC funds

Incentives: Offer free due diligence on general partners (GPs) from CEPRES, a leading private market investment technology platform

Survey Experiment:

- **Recruitment:** Between June and August 2023
- **Design:** Follows Lyons-Padilla et al. (2019)

LPs evaluate a single one pager with *randomly* assigned GP teams with characteristics generated using a *randomized factorial* approach to decide whether they want to invest in them

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Example Pager Displayed to Participants

- The first document that reaches a LP's desk
- GPs' characteristics are orthogonally randomized.
- LPs' evaluations
 - a. Mechanisms (network, matching, return, risk)
 - b. Decisions (investment interest, amount)

Evaluation Questions

EXPONENT CAPITAL

\$250 MILLION – EXPONENT CAP III, LP

The Opportunity

- **Fund Name:**
Exponent Cap III, LP.
- **Target Size:**
\$250 Million
- **Portfolio**
Construction: 20-25 companies, investing \$1-10M each. For companies that take off, we maintain reserves for follow on rounds

Track Record

Fund I, \$75M (2011 vin.)
Net IRR: -10.6% | TVPI: 0.62x

15 investments, 2 successful exits, 5 investments money-back

Fund II, \$150M (2014 vin.)
Net IRR: -9.2% | TVPI: 0.56x

20 investments, 2 successful exits, 6 investments money-back

OUR INVESTMENT TEAM

The Exponent team brings together a unique blend of complementary skill sets and networks, which positions us well for successfully running our third VC fund.



Nathan Phillips, Managing Partner
Nathan previously served as the Chief Executive Officer of Cygnia. Also co-founded Dynamos Inc. with a focus on innovation and creativity. Princeton University graduate.



Benjamin Cook, Venture Partner
Benjamin founded Vertexa to provide innovative solutions to a variety of challenges in the market. California Institute of Technology graduate.



Victor Anderson, Principal
Victor built Nexodus from scratch, with a focus on delivering the best possible customer experience. University of California Los Angeles graduate.

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Managing Director
investors@ExponentCap.vc
Los Angeles, CA
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It is not our intent to provide any information about any current or future offering. Any information provided herein is intended to be general information about our management and business model and historical data only.

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Finding 1: Both Value Better Returns and Networks...

Dependent Variable:	Professional Investors		Individual Investors	
	Investment Interest Q_5	Investment Amount Q_6	Investment Interest Q_5	Investment Amount Q_6
	(1)	(2)	(3)	(4)
Network Evaluations Q_1	6.90*** (1.08)	0.66*** (0.16)	3.66** (1.16)	11.69** (4.30)
Matching Evaluations Q_2	0.31 (0.86)	-0.07 (0.17)	0.87 (1.28)	2.34 (2.17)
Return Evaluations Q_3	14.46*** (1.08)	1.72*** (0.28)	14.90*** (1.48)	3.47 (4.14)
Risk Evaluations Q_4	-2.28** (0.89)	-0.07 (0.16)	1.15 (1.12)	0.15 (3.49)
R^2	0.541	0.214	0.713	0.083
Observations	593	571	445	445

- Both institutional LPs and individual LPs value VC funds with higher expected returns and better networks
- This is the ex-ante expected behavior - investment interest/amount question design insulates decisions from matching beliefs, all else equal higher returns and one of their primary drivers (network quality) are desirable to all investors
- Suggests the results are unlikely to be noise

Finding 2: ...But Differ in Beliefs on GP Characteristics

Institutional LPs prefer

- GPs with better past financial performance
- GPs with entrepreneurial experience
- seasoned VC funds

Consistent with VC performance indicators documented in the literature

Panel A-1: Investment Interest Ratings (Professional)

Dependent Variable:	Investment Interest 1{Q ₅ Above Median} (1)	Investment Amount 1{Q ₅ Above Median} (2)	Investment Interest 1{Q ₇ Above Median} (3)	Investment Interest 1{Q ₅ Above Median} (4)
Top Performing Fund	0.27*** (0.04)	0.22*** (0.04)	0.07* (0.04)	0.02 (0.04)
VC Exp	-0.01 (0.05)	-0.04 (0.05)	0.01 (0.05)	-0.04 (0.05)
Entrepreneurial Exp	0.11** (0.05)	0.13** (0.05)	0.04 (0.05)	0.02 (0.05)
Connection	0.05 (0.04)	0.08** (0.04)	-0.00 (0.04)	0.06 (0.04)
Prestigious School	0.04 (0.04)	0.04 (0.04)	0.02 (0.04)	0.12*** (0.04)
Western Coast	0.02 (0.04)	0.04 (0.04)	-0.01 (0.04)	0.02 (0.04)
First Time Fund	-0.08** (0.04)	-0.08** (0.04)	-0.06 (0.04)	-0.00 (0.04)
R ²	0.060	0.057	0.031	0.018
Observations	1,038	1,038	1,038	1,038

Finding 2: ...But Differ in Beliefs on GP Characteristics

Individual LPs slightly prefer

- Investors without entrepreneurial experience

Individual LPs:

- Do not weight past financial performance of GPs
- Do not prefer seasoned funds

Importantly, individual investors do not systematically value past financial performance of GPs (robust to specification).

Panel A-2: Investment Interest Ratings (Individual Interaction)

Dependent Variable:	Investment Interest 1{Q ₅ Above Median}	Investment Amount 1{Q ₅ Above Median}	Investment Interest 1{Q ₇ Above Median}	Investment Interest 1{Q ₉ Above Median}
	(1)	(2)	(3)	(4)
Top Performing Fund × Individual Investor	-0.31*** (0.06)	-0.22*** (0.06)	-0.14** (0.06)	-0.01 (0.06)
VC Exp × Individual Investor	-0.09 (0.08)	-0.04 (0.08)	-0.01 (0.08)	0.00 (0.08)
Entrepreneurial Exp × Individual Investor	-0.24*** (0.08)	-0.14* (0.08)	-0.22*** (0.08)	-0.10 (0.08)
Connection × Individual Investor	-0.08 (0.06)	-0.13** (0.06)	-0.01 (0.06)	-0.10 (0.06)
Prestigious School × Individual Investor	-0.03 (0.06)	-0.03 (0.06)	0.06 (0.06)	-0.10 (0.06)
Western Coast × Individual Investor	0.01 (0.06)	0.02 (0.06)	0.16** (0.06)	0.01 (0.06)
First Time Fund × Individual Investor	0.13** (0.06)	0.05 (0.06)	0.11* (0.06)	0.08 (0.06)
Individual Investor	0.25*** (0.09)	0.28*** (0.09)	0.04 (0.09)	0.10 (0.09)
R ²	0.060	0.057	0.031	0.018
Observations	1,038	1,038	1,038	1,038

Finding 2: ...And Differ in Beliefs on Return Mechanisms

Institutional LPs expect

- Top performing GPs to have better networks and returns with less risk, but less likely to accept investment
- Entrepreneurial experience to contribute to network and returns
- Seasoned funds reduce risk

Panel B-1: Investment Mechanism Ratings (Professional)

Dependent Variable:	Network Evaluations 1{Q ₁ Above Median} (1)	Matching Evaluations 1{Q ₂ Above Median} (2)	Return Evaluations 1{Q ₃ Above Median} (3)	Risk Evaluations 1{Q ₄ Above Median} (4)
Top Performing Fund	0.12*** (0.04)	-0.15*** (0.04)	0.25*** (0.04)	-0.15*** (0.04)
VC Exp	0.08 (0.05)	0.06 (0.05)	0.04 (0.05)	0.03 (0.05)
Entrepreneurial Exp	0.11** (0.05)	0.00 (0.05)	0.12** (0.05)	0.03 (0.05)
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Prestigious School	0.05 (0.04)	-0.06 (0.04)	0.01 (0.04)	0.01 (0.04)
Western Coast	0.08** (0.04)	-0.06 (0.04)	-0.01 (0.04)	0.03 (0.04)
First Time Fund	-0.03 (0.04)	0.04 (0.04)	-0.05 (0.04)	0.14*** (0.04)
R ²	0.031	0.025	0.051	0.034
Observations	1,038	1,038	1,038	1,038

Again, consistent with VC performance drivers documented in the literature

Finding 2: ...And Differ in Beliefs on Return Mechanisms

Individual LPs expect:

- Top performing GPs to have similar networks, returns, and risk, and no difference in likelihood to accept investment
- Entrepreneurial experience does not contribute to network and returns
- First time funds have better returns (offsetting higher risk)

Panel B-2: Investment Mechanism Ratings (Individual Interaction)

Dependent Variable:	Network Evaluations 1{Q ₁ Above Median} (1)	Matching Evaluations 1{Q ₂ Above Median} (2)	Return Evaluations 1{Q ₃ Above Median} (3)	Risk Evaluations 1{Q ₄ Above Median} (4)
Top Performing Fund × Individual Investor	-0.18*** (0.06)	0.16*** (0.06)	-0.24*** (0.06)	0.16*** (0.06)
VC Exp × Individual Investor	-0.18** (0.08)	-0.07 (0.08)	-0.13 (0.08)	-0.12 (0.08)
Entrepreneurial Exp × Individual Investor	-0.21*** (0.08)	0.04 (0.08)	-0.18** (0.08)	-0.05 (0.08)
Connection × Individual Investor	-0.05 (0.06)	0.00 (0.06)	-0.06 (0.06)	0.04 (0.06)
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Observations	1,038	1,038	1,038	1,038

Fully offsets most professional investor beliefs, access beliefs inconsistent with data

What Explains Individual Investors' Investment Patterns?

Investment experience!

- Individual investors with more investment experience value VC funds with better past financial performance
- Consistent with the institutional LPs' patterns and the well documented "persistent performance of VC funds" phenomenon

Panel A: Investment Interest Ratings

Dependent Variable:	Investment Interest	Investment Amount	Investment Interest	Investment Interest
	Q ₅	Q ₆	Q ₇ (High Quality)	Q ₈ (Low Quality)
	(1)	(2)	(3)	(4)
Top Performing Fund × Experienced Individuals	13.88*** (5.06)	0.05 (0.10)	2.65 (4.55)	13.68** (5.89)
Top Performing Fund	-2.18 (2.11)	-0.01 (0.06)	-2.63 (2.10)	-2.50 (2.52)
Experienced Individuals	-17.70** (8.45)	-0.17 (0.15)	-10.02 (7.23)	-29.71*** (9.54)
...				
R ²	0.083	0.047	0.051	0.113
Observations	445	445	445	445

Panel B: Mechanism Evaluations

Dependent Variable:	Network Evaluations	Matching Evaluations	Return Evaluations	Risk Evaluations
	Q ₁	Q ₂	Q ₃	Q ₄
	(1)	(2)	(3)	(4)
Top Performing Fund × Experienced Individuals	13.64*** (4.43)	1.05 (4.43)	11.39** (4.98)	4.61 (4.30)
Top Performing Fund	-3.57* (2.11)	-1.85 (2.15)	-2.14 (2.21)	-1.61 (2.40)
Experienced Individuals	-11.09 (6.91)	-4.43 (6.34)	-15.57* (8.05)	-4.83 (6.10)
...				
R ²	0.067	0.032	0.079	0.056
Observations	445	445	445	445

Finding 3: Understanding Adverse Selection

GP-LP market is a two-sided matching market

- Institutional investors take adverse selection into consideration
 - Realize that better performing funds are less likely to collaborate with them due to better outside options
- Individual investors stated beliefs do not reflect this (and experience doesn't correct matching beliefs)

Dependent Variable:	Matching: 1{Q ₂ Above Median}			
	Seasoned Funds		All Funds	
	OLS (1)	Probit (2)	OLS (3)	Probit (4)
Top Performing Fund × Individual Investor	0.22** (0.09)	0.58** (0.24)	0.16*** (0.06)	0.42*** (0.16)
Top Performing Fund	-0.23*** (0.06)	-0.59*** (0.15)	-0.15*** (0.04)	-0.38*** (0.10)
Individual Investor	-0.25** (0.12)	-0.65** (0.31)	-0.15* (0.09)	-0.39* (0.23)
...				
R ² (Pseudo R ²)	0.058	0.043	0.025	0.045
Observations	1,038	1,038	1,038	1,038

Summary: Experimental Results

- 1 All investors want to invest with funds with better expected returns, and understand the importance of networks in private markets investing
- 2 Investors differ in stated beliefs about which GP characteristics predict high returns and good networks
- 3 Individual investors do not state a belief in limited access to successful funds or the adverse selection concerns with funds they can access

Questions Raised:

- How large are these results economically?
- What drives differences in stated beliefs?

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Implication 1: Investment Performance

Key Difference: Professional investors highly value past GP performance, whereas individual investors do not.

Calibrate the implications of fund selection differences on their investment performance

- Use the persistence of performance in VC funds measured in prior work
A transition matrix in Table 3 in [Harris, Jenkinson, Kaplan, and Stucke \(2023\)](#)

- Use the collected experimental data to calibrate demand differences
Indicate how likely professional and individual investors would invest in VC funds with different past financial performance.

When the expected returns are measured using IRR, the expected returns for VC funds demanded by professional investors are 19.52%; those for individual investors are 17.36% (a 12.44% difference, significant at the 1% level) calibration process

A 2% difference is comparable in magnitude to the average risk-adjusted out-performance of VC funds (Korteweg (2019), regardless of risk-adjustment method).

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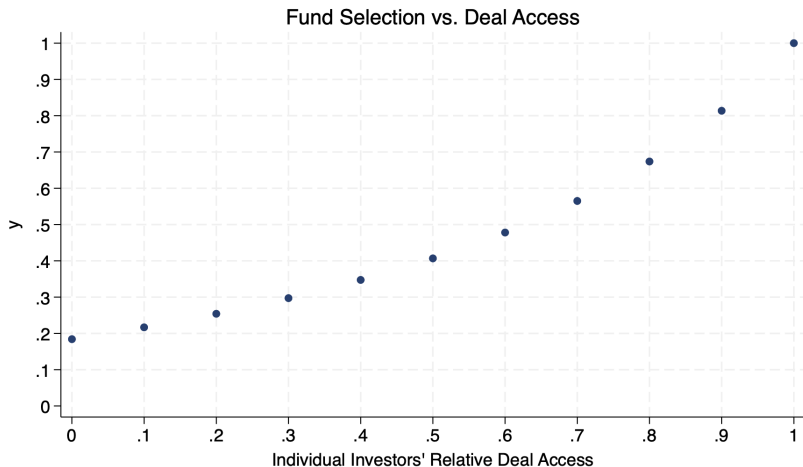
Observational Data: Investment Performance of Individual LPs

- Fund Performance Data: Pitchbook
- # of Individual LPs (fund-level): scrape Form D from the SEC website

Consistent with the experiment, VC funds likely to be backed by more individual LPs exhibit poorer financial performance.

Dependent Variable:	P(IPO/Acq)	P(IPO)	P(Acq)	P(Closures)
	(1)	(2)	(3)	(4)
Ln(Accredited Investors)	-0.019** (0.007)	-0.027*** (0.007)	0.008 (0.005)	0.004 (0.004)
VC Exp	0.018 (0.021)	-0.009 (0.018)	0.027* (0.015)	-0.009 (0.009)
Entrepreneurial Exp	-0.008 (0.013)	0.006 (0.012)	-0.015 (0.010)	0.017*** (0.006)
Connection	-0.048*** (0.018)	-0.063*** (0.014)	0.015 (0.015)	0.002 (0.009)
Prestigious School	-0.001 (0.015)	-0.004 (0.010)	0.003 (0.012)	0.004 (0.007)
Western Coast	0.003 (0.012)	0.004 (0.010)	-0.001 (0.009)	0.005 (0.006)
First Time Fund	0.035* (0.018)	0.016 (0.016)	0.019 (0.013)	-0.005 (0.008)
Ln(Fund Size)	0.039*** (0.005)	0.045*** (0.005)	-0.006 (0.004)	-0.020*** (0.004)
Observations	662	662	662	662
Adjusted R^2	0.606	0.202	0.602	0.368
Vintage Year FE?	YES	YES	YES	YES

Implication 2: Importance of Fund Selection vs Deal Access



- y-axis: relative importance of fund selection
- x-axis: individual LPs' relative access to high-track-record GPs
- fund selection alone could explain 20% of the performance gap [details](#)

Discussion

- Are the results surprising?

(Public Market) Retail investors have various behavioral biases (overconfidence, over-trading, trend-following, over-extrapolation, etc.).

(private market)

- Angel investors exhibit superior investment performance in the public market using Norwegian data (Karlsen, Kisseleva, Mjos, and Robinson 2023)

- Any policy implications?

(Frictionless, Full-information Economy) Increased access to private markets would unambiguously increase welfare and improve the efficiency of allocations

This paper: The welfare impact of expanding access to private market investments is not unambiguously positive (mis-allocation, over-allocation possible).

Investment experience matters. (Having FOFs is an important tool to avoid capital misallocation in the private market. Harris, Jenkinson, Kaplan and Stucke 2018)

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Extensions

Individual investors in VC markets seem to display *different* behavioral biases than retail investors in public markets:

- Under-weighting past performance (this study), versus over-extrapolation (public markets)
- Failure to incorporate well-documented market facts (performance persistence, access, preferential LP treatment), possibly consistent with public markets

Follow-up Experiment (Individual Investors):

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Takeaway: Individual LPs Display Different Fund Selection Strategies

- **Research Question:** How do investments by individual investors and those of professionals differ in the private market? (VC fund selection process)
- **Empirical Method:** Survey experiment with US individual and institutional LPs
- **Findings:**
 - Both groups aim to select high-performing VC funds but differ in their beliefs about which GP characteristics predict high returns.
 - Professionals prefer GPs with strong past returns, while individuals place much less emphasis on VC funds' past performance
 - Individuals do not take access and adverse selection into consideration
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 - Individual investors are associated with worse investment performance.
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Evaluation Questions

back

1. (Network) What is the likelihood that this VC fund will syndicate with an established and prestigious VC fund?

0 10 20 30 40 50 60 70 80 90 100

Probability of Joining a Successful Syndication (Drag the bar)



2. (Matching) What's the probability that this fund will accept your investment?

0 10 20 30 40 50 60 70 80 90 100

Probability of Accepting Your Offer (Drag the bar)



3. (Returns) Imagine that this VC fund is guaranteed to accept your investment offer. What's the likelihood that it will generate higher financial returns than other funds of the same type?

0 10 20 30 40 50 60 70 80 90 100

Probability of Generating Higher Returns (Drag the bar)



4. (Risk) Imagine that this VC fund team is guaranteed to accept your investment offer. What is the likelihood that this VC fund will have a higher risk than other funds of the same type?

0 10 20 30 40 50 60 70 80 90 100

Probability of Having Higher Risk (Drag the bar)



5. (Decision) If you consider the investment team's network, return, risk, and the likelihood that you get an allocation, how likely would you consider investing in the fund?

0 10 20 30 40 50 60 70 80 90 100

Probability of Investment (Drag the bar)



6. If you are planning to deploy \$25 million in VC capital this year, how much would you allocate to this fund considering that its target size is \$250 million?

Note: TVPI (i.e., "Total Value to Paid-In Capital") is calculated by dividing the current value of the fund's portfolio by the total amount of capital that has been called or paid in by limited partners **in the following two questions**. It is a common performance metric used to measure the return on investment for a fund.

1. After an initial meeting with the GPs, you feel that they are open to an allocation from you. Further, together with your consultants, your team estimates that their **expected TVPI is 4.5x** with a **standard deviation of 8.4x**. How likely would you consider making an allocation?

0 10 20 30 40 50 60 70 80 90 100

Probability of Investment (Drag the bar)



2. After an initial meeting with the GPs, you feel that they are open to an allocation from you. Further, together with your consultants, your team instead estimates that their **expected TVPI is 0.7x** with a **standard deviation of 0.6x**. How likely would you consider making an allocation?

0 10 20 30 40 50 60 70 80 90 100

Probability of Investment (Drag the bar)



Implication 1: Fund Performance (Calibration Process)

Transition Matrix from [Harris, Jenkinson, Kaplan, and Stucke 2023](#)

		Current Fund Quartile			
		1	2	3	4
Fund Quartile at Fundraise	1	45.1%	23.6%	19.0%	12.2%
	4	10%	20%	26%	44%

$$E(r) = Pr(\text{Selecting Better-Performing Funds}) \times r_{\text{Top-quantile Performance}} + Pr(\text{Selecting Worse-performing Funds}) \times r_{\text{Bottom-quantile Performance}}$$

- $Pr(\text{Selecting Better(Worse)-Performing Funds})$ is from experimental data (Q_5)
- $r_{\text{Top(Bottom)-quantile Performance}}$ is from the transition matrix
- standard errors are calculated by bootstrapping. [back](#)

Implication 2: Importance of Fund Selection vs Deal Access

Step 1: calculate the performance gap driven solely by fund selection

(In the experiment, institutional and individual LPs have the same access to all GPs)

As shown in the one-pages in the experiment

- GPs with high track records have an average TVPI of 4.9
- GPs with low track records have an average TVPI of 0.59

Based on the experiment, institutional (individual) investor would invest in

- higher-track-record GPs with a probability of 0.62 (0.51)
- lower-track-record GPs with a probability of 0.38 (0.49)

Hence, Institutional investors' expected TVPI: $0.62 \times 4.9 + 0.38 \times 0.59 = 3.26$

Individual investors' expected TVPI: $0.51 \times 4.9 + 0.49 \times 0.59 = 2.79$

performance gap driven solely by fund selection is $3.26 - 2.79 = 0.47$ [back](#)

Implication 2: Importance of Fund Selection vs Deal Access

Step 2: calculate the performance gap driven by both fund selection and fund access

($x = 0.1$: assuming institutional investors have access to all GPs; individual investors have access to all lower-track-record GPs and 10% of higher-track-record GPs.)

- Individual investors' expected TVPI: $\frac{(0.51 \times 4.9 \times 0.1 + 0.49 \times 0.59 \times 1)}{(0.51 \times 0.1 + 0.49 \times 1)} = 0.996$
- the performance gap becomes $3.26 - 0.996 = 2.264$

Step 3: calculate the role of fund selection

The y-axis is $0.47 / 2.264 = 0.21$ (i.e., performance gap caused by fund selection divided by performance gap caused by both fund selection and deal access) [back](#)