Why Venture Later?
Incentives, Learning, and Industry Allocation in VC Funds

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Link to Paper

Abstract

Venture funds enter new high-tech industries with delay. I develop and estimate a structural model with two frictions that generates a socially inefficient delay to enter. Inside deals, managers need credible early evidence from entrepreneurs about viability of new ventures, but because monitoring is costly they do too little. Between investors and managers, LPs cannot verify or directly reward that monitoring, so incentives under-provide it. Estimating the model on matched pairs of funds shows the first friction reduces the share of capital allocated to new sectors, while the second keeps monitoring too low and limits the scale of those investments. Combined frictions imply average welfare losses of nearly $40B per year (around 3% of VC and 12% of new-sector capital). I examine the effectiveness of policy tools, such as exploration bonus for managers, temporary public risk-sharing, and lower-cost funding for new-sector deals, in raising early exploration and investment scale.

Motivation and Puzzle

Venture capital plays a central role in the diffusion of new technologies. Early capital accelerates experimentation, standard setting, and learning; late capital arrives after private rents have compressed and much of the social value from early discovery has already been created.

Two empirical facts make the timing problem concrete:

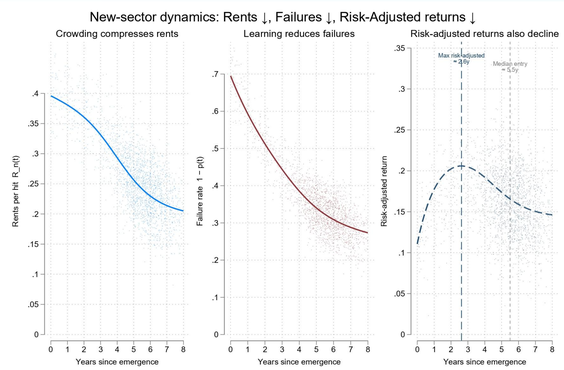
- **Entry is late.** The median VC fund enters a new sector roughly 5–6 years after the sector's birth.
- **Returns peak early.** Risk-adjusted private returns are highest early in sector time and decline as sectors mature.

Late entry therefore does **not** compensate for higher risk or worse information. Instead, risk-adjusted opportunities are better early, yet most capital arrives later.

Puzzle:
Why does early exploration arrive late, and is this delay privately optimal or socially inefficient?

Stylized Facts: Late Entry

New-sector dynamics over time
As new sectors mature, learning improves project success while increased participation compresses rents.
These forces jointly imply that risk-adjusted private returns peak early, even though capital arrives later.



In the data:
- **Failure rates decline** with sector age, consistent with learning
- **Rents per hit decline** as entry and adoption increase
- **Risk-adjusted returns peak early**, around **2.5 years** after sector emergence
- **Median VC entry occurs much later**, around **5–6 years**

Key implication:
- Late VC entry does **not** reflect compensation for higher risk.
- Risk-adjusted opportunities are strongest early, yet most capital arrives after private margins have already compressed.

Model

Environment and Timing

Environment
- New sector emerges
- GPs manage core + new-sector exploration
- Entrepreneurs hold private information about project viability
- LPs finance GPs and can audit/enforce governance
- Fund size is market-set each vintage

Timing: GP–Entrepreneur (information creation)

t = 0 — Experimentation
- New-sector project: NPV < 0 without experimentation
- Entrepreneur sends viability signal (may be false positive)
- False positive driven by continuation utility
- False positive harder with higher entrepreneur credibility and GP monitoring
- Matching/sorting: better GPs ↔ more credible founders

t = 1 — Learning
- Fund 1 outcomes and signals realized
- Learning from credible outcomes
- Matching quality improves for next fund

t = 2 — Implementation
- Projects selected for next fund are implemented and scaled

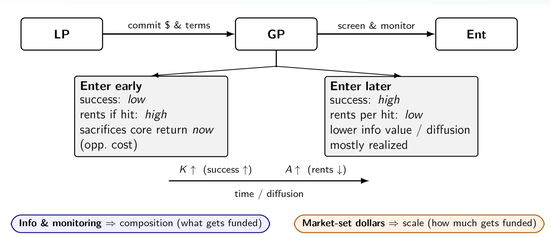
Timing: LP–GP (scale and reallocation)

t = 0
- LP invests 1 in GP
- GP allocates α_1 to new sector and (1- α_1) to core sector
- LP auditing affects enforcement of GP monitoring μ_1
- Early exploration requires sacrificing core returns (opportunity cost)

t = 1
- Fund 1 outcomes observed
- LP sets Fund 2 scale I_2 (market-set dollars)

t = 2
- Given I_2, GP chooses portfolio tilt α_2
- Capital deployed at market-set scale

Diffusion over sector time
- Knowledge (K ↑) ⇒ success probability ↑
- Adoption (A ↑) ⇒ competition ↑ ⇒ rents ↓



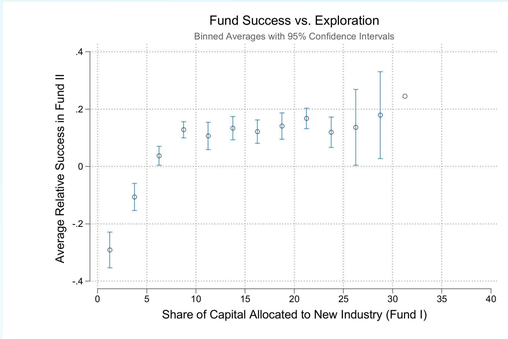
Choices, Learning, and Frictions

Entrepreneur Choice
- **Viability signal**: report project quality
- Incentive to send false positive (due to continuation utility)

GP choices
- **α_1 (Exploration share):** capital allocated to the new sector
- **μ_1 (Monitoring effort):** governance / signal quality
- ➢ Early exploration is privately costly and only partially contractible

LP choice
- **Investment / scale:** how much capital to commit
- Determines second-fund scale I_2 (market-set dollars)

Learning Evidence:



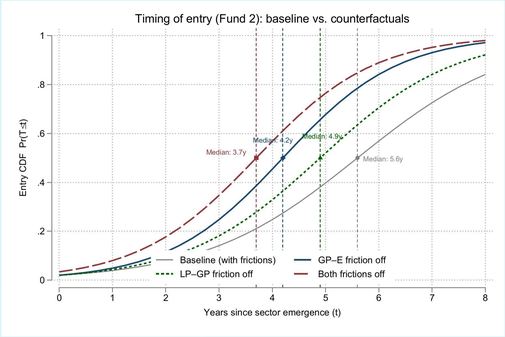
Early exploration generates learning that scales into future success

Frictions
Why early learning is under-supplied:
- Information wedge (GP–Entrepreneur):
  Costly monitoring ⇒ noisy early signals ⇒ weak pass-through from α_1 to reallocation
- Scale wedge (LP–GP):
  Market-set fund size ⇒ dollars do not scale with expected returns in tight vintages

Composition vs. scale
Two distinct margins
- **Composition:** what gets funded (portfolio tilt)
- **Scale:** how much gets funded (market-set dollars)

One-Line Mechanism
(α_1, μ_1) → signal quality → Learning → (α_2, I_2) → entry timing

Results



Removing frictions shifts VC entry earlier toward the planner benchmark

Entry timing
- VC entry into newly emerged sectors is **late relative to a planner**
- Median entry ≈ **5–6 years** after sector birth

Why late? Two frictions
- **GP–Entrepreneur (information):** under-exploration → weak early signals
- **LP–GP (pricing/scale):** dollars do not scale when returns are high

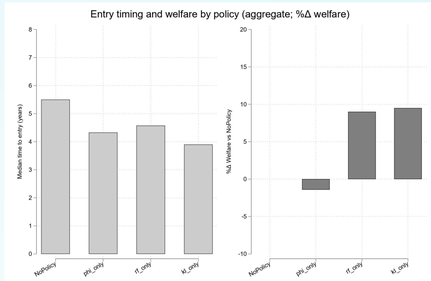
Quantitative importance
- **≈ 2/3** of delay from GP–E information/monitoring
- **≈ 1/3** from LP–GP scale/pricing

Welfare loss due to late entry
≈ $40B per year in lost surplus *(~3% of VC capital; ~12% of new-sector capital)*

Policy and Takeways

Policy levers
1) Exploration-linked carry (information lever)
- Fixes: GP–Entrepreneur wedge
- Tool: carry top-up tied to audited early exploration
- Effect: α_1↑, μ↑ → stronger learning

2) Price / scale levers (capital elasticity)
- Fixes: LP–GP wedge
- Tools: first-loss guarantees, concessional credit
- Effect: I_2↑ → dollars scale earlier



Policies that relax information and scale frictions shift entry earlier and raise welfare.