STEVEN N. KAPLAN

Steven N. Kaplan is the Neubauer Family Distinguished Service Professor of Entrepreneurship and Finance at the University of Chicago Booth School of Business and the Thomas Cole Distinguished Visiting Professor Chair at the University of Chicago Law School. Professor Kaplan is also the Kessenich E.P. Faculty Director of the University of Chicago's Polsky Center for Entrepreneurship and Innovation.

Research

Professor Kaplan researches private equity, venture capital, corporate governance and executive talent. He is the co-creator of the Kaplan-Schoar PME (Public Market Equivalent) private equity benchmarking approach. A Fortune Magazine article referred to him as "probably the foremost private equity scholar in the galaxy." A JP Morgan report called him "the patron saint of private equity research." He is the co-author (with Paul Gompers) of An Advanced Introduction to Private Equity. He has testified to U.S. Senate and U.S. House Committees about his research on private equity and executive compensation. His findings and opinions appear regularly in the business media. Professor Kaplan is a Research Associate at the National Bureau of Economic Research.

Teaching

Professor Kaplan teaches advanced MBA, law and executive courses in entrepreneurial finance and private equity, corporate financial management, corporate governance, and wealth management. His course in entrepreneurial finance and private equity is consistently among the most popular in the school. *BusinessWeek* named him one of the top twelve business school teachers in the country and one of the top four teachers of entrepreneurship.

Professor Kaplan co-founded the entrepreneurship program at Booth. With his students, he helped start Booth's business plan competition, the New Venture Challenge (NVC), which has spawned over two hundred companies. The companies have raised over $1 billion from investors (including Accel, Andreesen Horowitz, Benchmark, Index and Sequoia) and have created over $8 billion in market value. Companies include GrubHub, Braintree/Venmo, Ben & Frank, FoxTrot, MedSpeed, Simple Mills and Tovala. The NVC has been rated one of the top two university accelerator programs in the U.S. as well as one of the top eight accelerators of any kind in the U.S. He helped start Hyde Park Angels which has been named one of the top angel groups in the U.S.

Professor Kaplan has been awarded the Phoenix Award four times and the Arthur Kelly Prize twice for exhibiting exceptional dedication to his students outside of the classroom.

Non-academic

Professor Kaplan serves on the board of Morningstar (MORN). He co-created the Lincoln Middle Market Index. He also serves on the advisory boards of several private equity and venture capital funds.

Education

Professor Kaplan earned his PhD in Business Economics from Harvard University. He received his AB, *summa cum laude*, in Applied Mathematics and Economics from Harvard College.

Private Equity:
Past, Present and Future

Steve Kaplan

University of Chicago Booth School of Business

Prepared for SEC Investor Advisory Committee Meeting, March 2023: Examining the Growth of Private Markets relative to the Public Markets: Drivers and Implications.

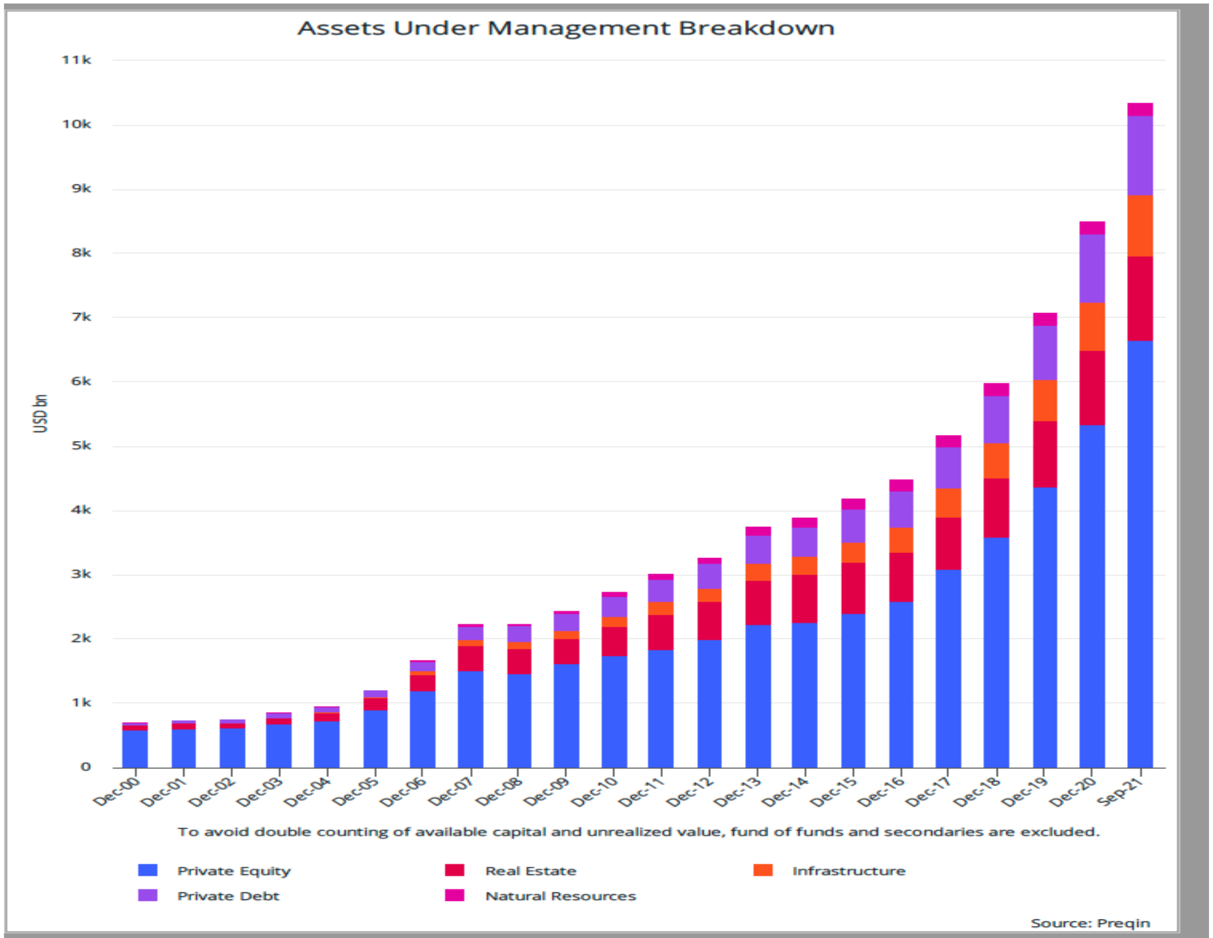
Overview

- How has PE grown?
- What do PE (LBO and Growth Equity) do at the company level?
  - Increase productivity / improve operations.
- What does PE do at the fund level?
  - Outperform public markets consistently.
- Why has PE grown so much? Will it continue?
- Thoughts on regulation?

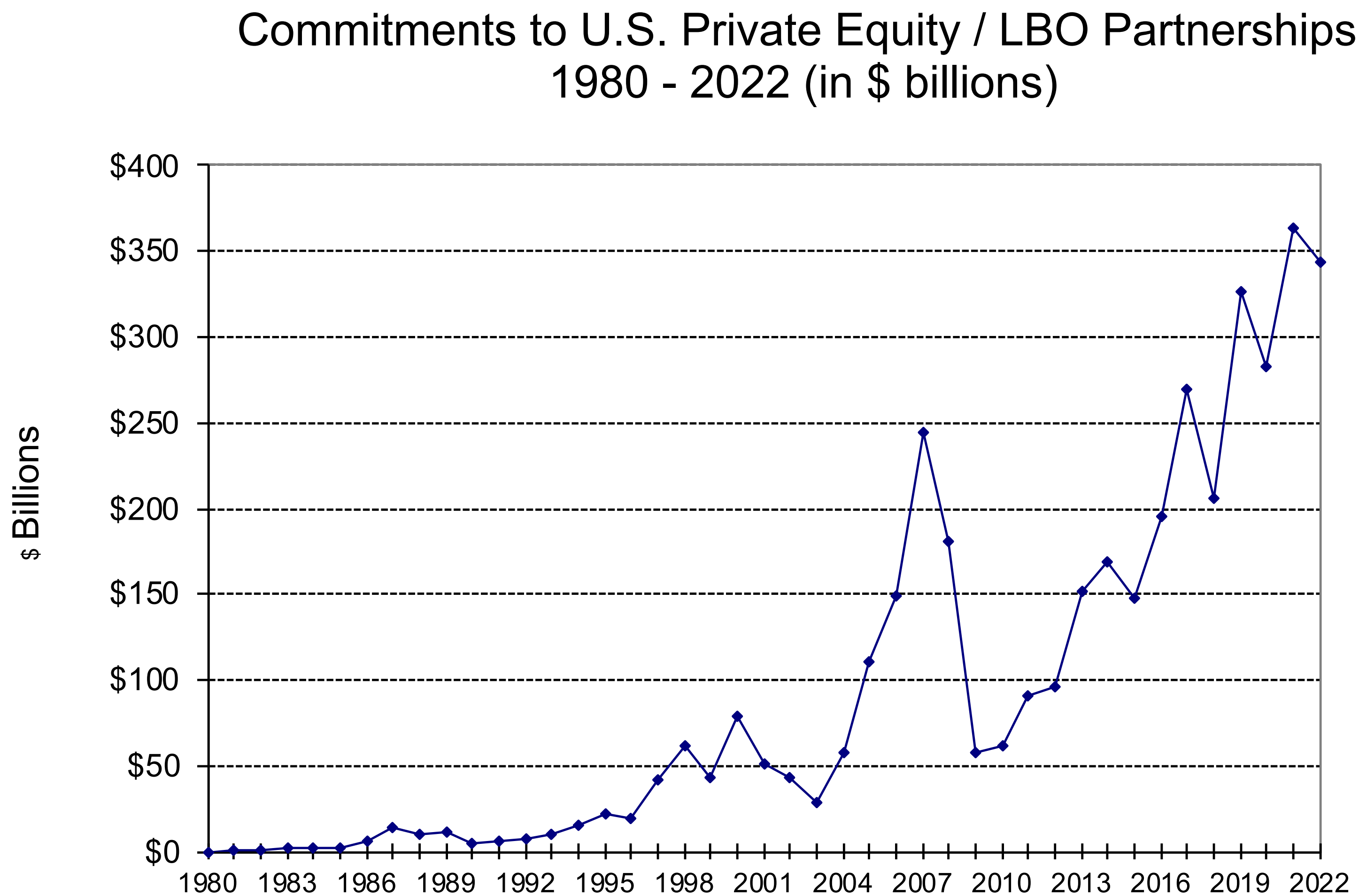
For more details, see:

- Advanced Introduction to Private Equity by Paul Gompers and Steven Kaplan

How Has PE Grown?



How Has PE Grown?



Source: Private Equity Analyst, Pitchbook, Steven N. Kaplan

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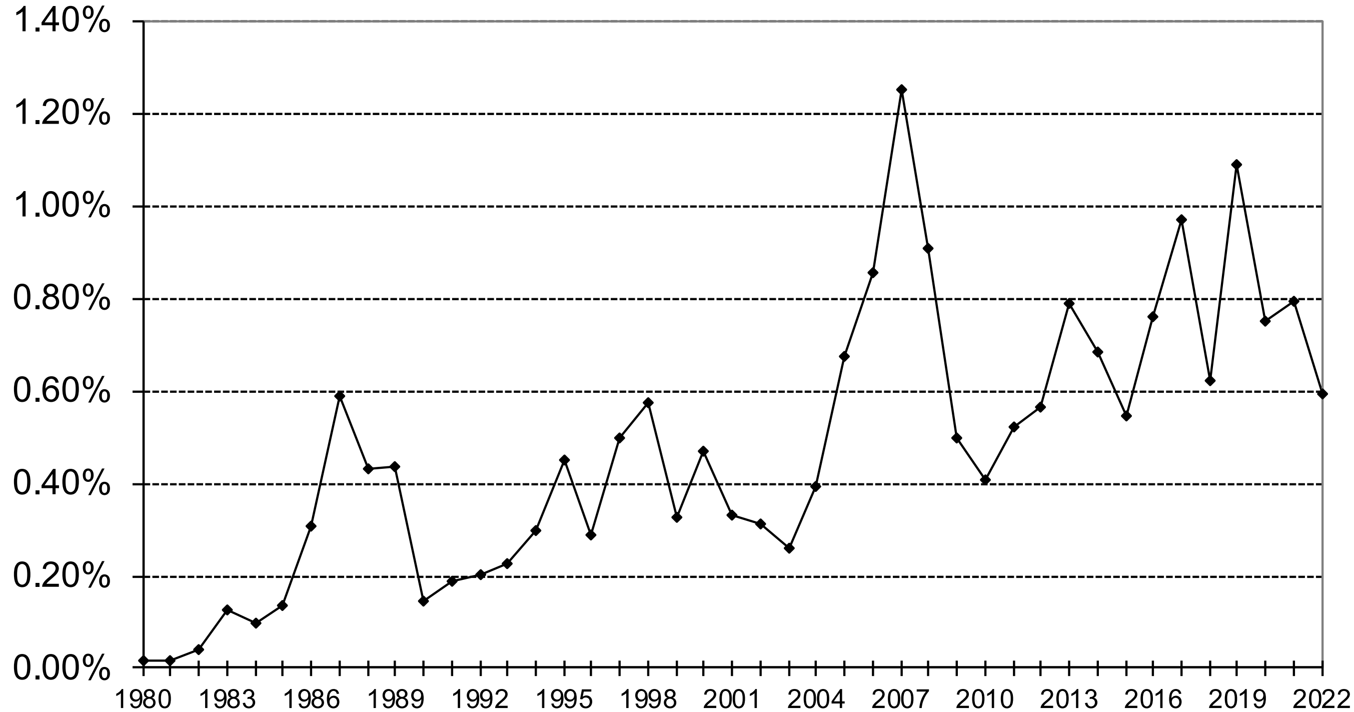
How Has PE Grown?

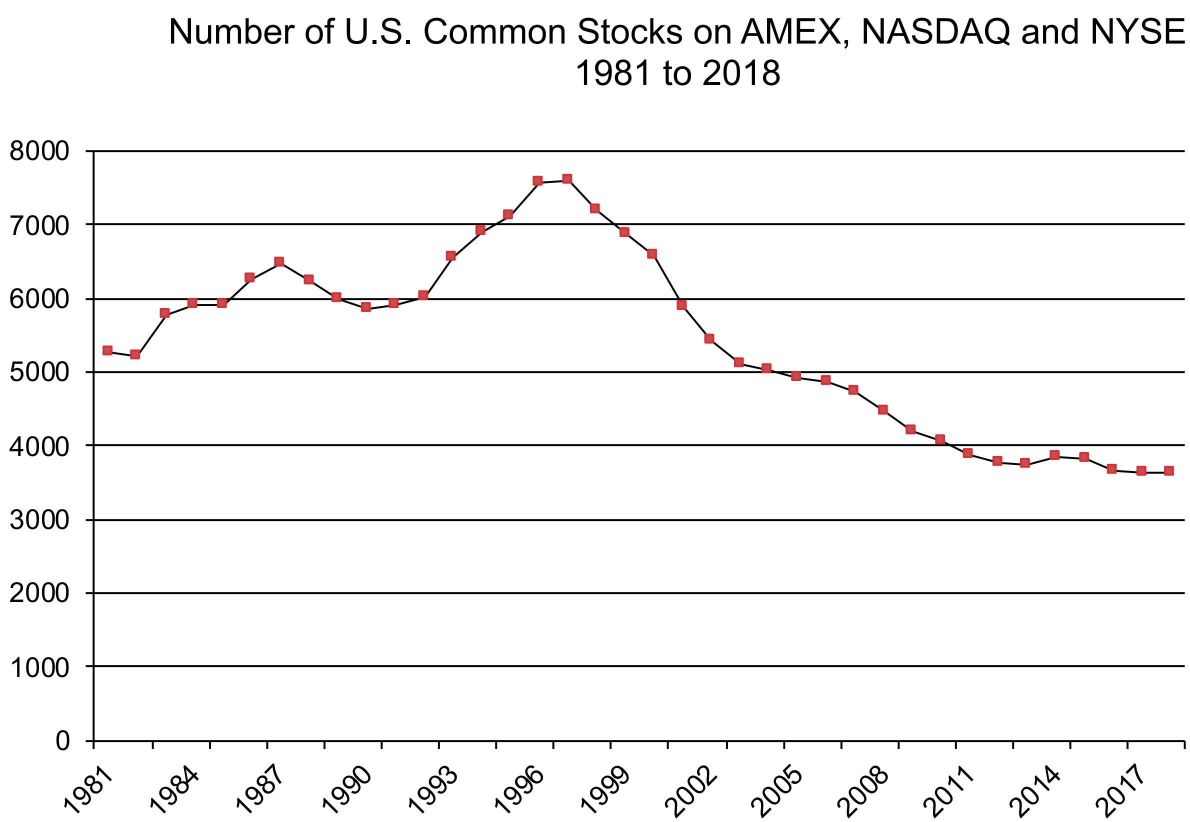
Commitments to Private Equity / LBO Partnerships in U.S.
as Fraction of Stock Market Capitalization 1980 - 2022



Source: Private Equity Analyst, Pitchbook, Steven N. Kaplan

How Has PE Grown?

- Fewer (but larger) public companies to invest in.



Source: Steve Kaplan and CRSP

Why is PE Controversial?

- Systemic effects of so much leverage?
- Are there excess returns?
- Effect on workers?
- Success?
  - Perception that PE investors enjoy low tax rates.
    - » Carried interest taxed at capital gains rates.
  - Substantial fees.

What Do PE / Buyouts Do At Company Level?

- **Private equity / buyout funded associated with increases in productivity / profitability.**
  - Davis et al. (2014 and 2019) from 1980s to 2011.
    - » Look at large fraction of all U.S. buyouts.
    - » **Net effect is: significant increase in productivity.**
      - Private-to-private and public-to-private.
      - Only beginning to capture effects of operational engineering?
    - » PE firms exit low productivity plants.
    - » PE firms enter (build / buy high) productivity plants.
  - Kaplan (1989b) in 1980s, Cohn, Hotchkiss and Towery (2019) in U.S.
    - » Increase in operating margins.
  - Wright (various) in U.K., Boucly et al. (2011) in France.
  - Caveat, public-to-privates in Guo et al. (2011) and Cohn et al. (2014).
    - » Davis (2019) is more positive.

What Do PE / Buyouts Do At Company Level?

- Davis et al. (2019):
  - Employment growth in existing operations (relative to firms in same industry) is lower by 4.4%.
  - Employment growth overall is lower by (insignificant) 1.4%.
    - » Buyouts reduce more in existing operations and increase more in new and acquired ones.
  - Employment growth is
    - » significantly higher for private-to-private deals.
    - » significantly lower for public-to-private deals.
  - Acquisition might be a better comparison?
    - » Employment result likely would be different.
  - No significant difference in average compensation per employee.
  - Do not measure what happens outside U.S.

What Do PE / Buyouts Do At Company Level?
Non-financial Results Largely Positive

- Fracassi, Previtero, and Sheen (2017).
  - PE firms increase sales with new products / geographical expansion, not price increases.
- Bloom, Sadun and van Reenen (2015).
  - PE-backed firms have better management practices.
- Cohn, Nestoriak and Wardlaw (2018).
  - Workplace injuries decline for public company buyouts vs. similar firms.
- Howell et al. (2022).
  - PE investments in airports bring marked improvements in airport performance.
- Gao et al. (2021).
  - PE acquirers largely positive for hospitals.
- Agrawal, and Tamber (2016).
  - Buyouts enhance human capital.
- Bernstein and Sheen (2016).
  - PE-funded restaurants have fewer health violations.
- Lerner et al. (2011)
  - Patenting buyout firms become more innovative.
- Johnston-Ross, Ma and Puri (2021)
  - PE-acquired banks performed better in Great Financial Crisis (GFC).
- Bernstein et al. (2021)
  - PE-funded companies in UK decreased investment less and performed better in GFC.

What Do PE /Buyouts Do At Company Level? Non-financial Results, but not All Positive

- Eaton, Howell and Yannelis (2018).
  - PE firms increase enrollment and profits at for-profit education companies. (taking advantage of student loans), but also defaults.
- Gupta et al. (2019).
  - PE-backed nursing homes have worse health outcomes and compliance.
  - BUT:
    - » Gandhi et al. (2020). Fewer COVID deaths at PE-backed nursing homes.
    - » issues with sample.
    - » deals lost money.
- Maug et al. (2020). In Netherlands buyouts:
  - Companies became more efficient and profitable;
  - Less healthy (less productive) workers lose wages and employment.
- Cummings et al. (2018). Buyouts associated with drop in patents / patent citations.

What Do PE Firms Do?

- ➔ **Evidence overwhelmingly indicates PE investors make companies more efficient / productive.**
  - No large sample negative results on productivity.
  - Usually with positive externalities, but not always.
  - ➔ Gross of fees, PE investors create value.

- Where does value come from? Kaplan and Stromberg (2009):
  - Financial Engineering.
    - » Better incentives and capital structure.
  - Governance Engineering.
    - » Better management and greater monitoring.
  - Operational Engineering.
    - » Capabilities to help companies operate better.

What do PE transactions / LBOs really do?

- Early investors -- KKR and others -- discovered benefits of LBOs. Benefits now applied in most LBOs.

  – Financial Engineering:
    - » High equity to management ==> improved incentives.
      - Management team gets roughly 15% / CEO 5%.
    - » High Debt ==> Discipline and tax benefits.
      - Less true today. 80% to 90% in ‘80s. 50% to 60% today.

- Governance Engineering:
  - » PE investors control boards of portfolio companies.
    - Boards are smaller than comparable public companies.
  - » PE investors work closely with CEO and management of portfolio companies.
  - » PE investors closely monitor CEO and portfolio companies.
  - » PE Investors / CEOs / Boards can make decisions quickly.

- In the last 10 to 20 years -- most top PE firms have added “operational engineering” to financial and governance engineering.
  - Most PE firms organized around industries.
    - » Use industry expertise to generate deal flow.
    - » Use industry expertise to identify improvements.
    - » Use industry expertise to help drive change.
- **At time PE firms invest, they have a value creation plan in mind:**
  - Identified strategic changes / repositioning.
  - Identified organic growth opportunities.
  - Identified acquisition opportunities.
  - Management changes and upgrades implemented, if necessary.
  - Identified cost cutting opportunities / productivity improvements.
- **The days of pure financial engineering are over.**
- **Performance (at company level) may not be fully reflected in research most of which looks at deals before 2012.**

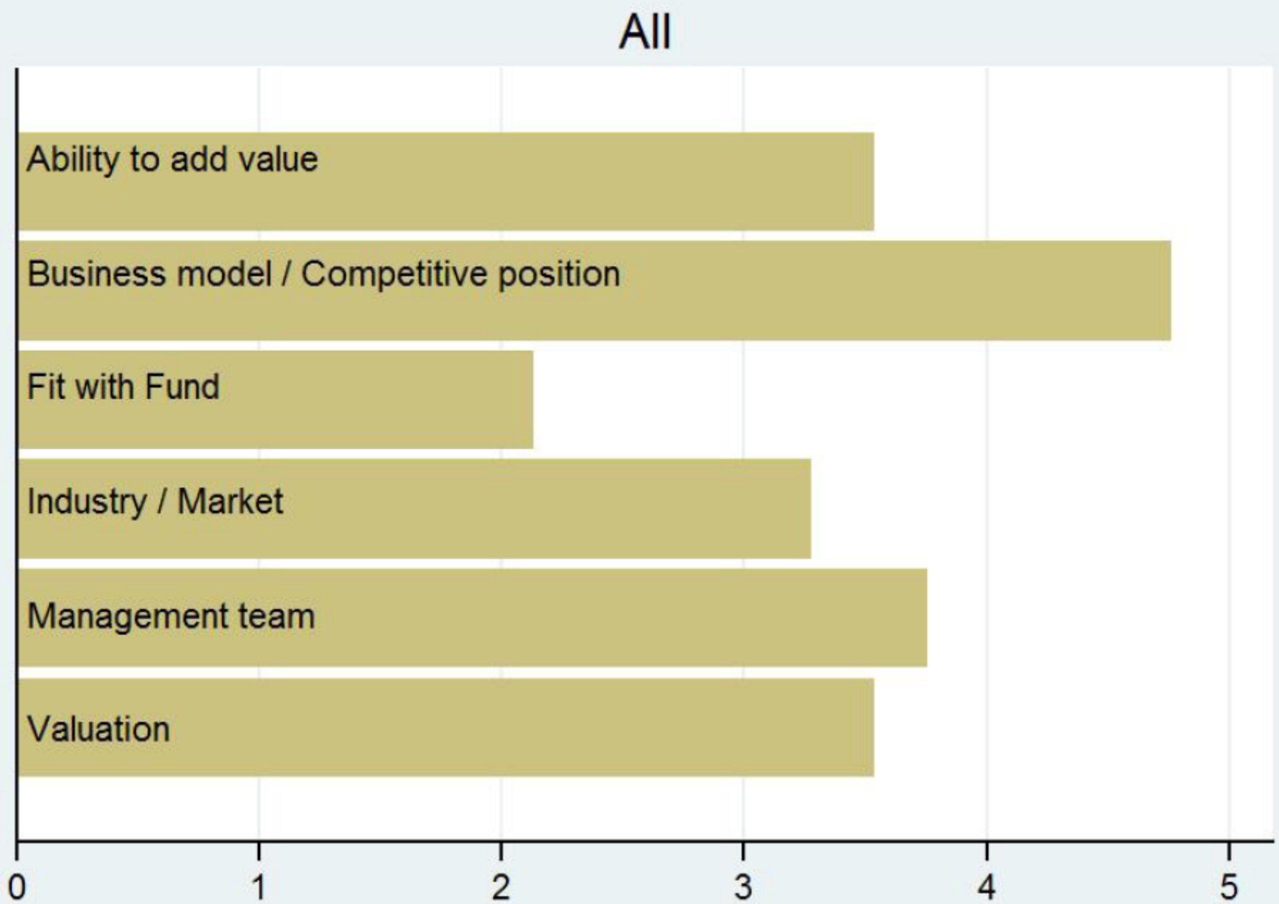
What Do PE Firms Say They Do?

- Gompers, Kaplan and Mukharlyov (2015) look at the engineering components.
  - Survey 79 PE firms with almost $800 B AUM.
    - » 2012 / 2013.
  - 40% to 50% of capital raised.

- Gompers, Kaplan and Mukharlyov (2022) revisit survey the summer of the pandemic.
  - Survey 200+ PE firms with $1900 B AUM.
    - » 2020
  - 40% to 50% of capital raised.

Q46: Rank the following investment factors in the order of importance (most important first).

Section 5: Due Diligence



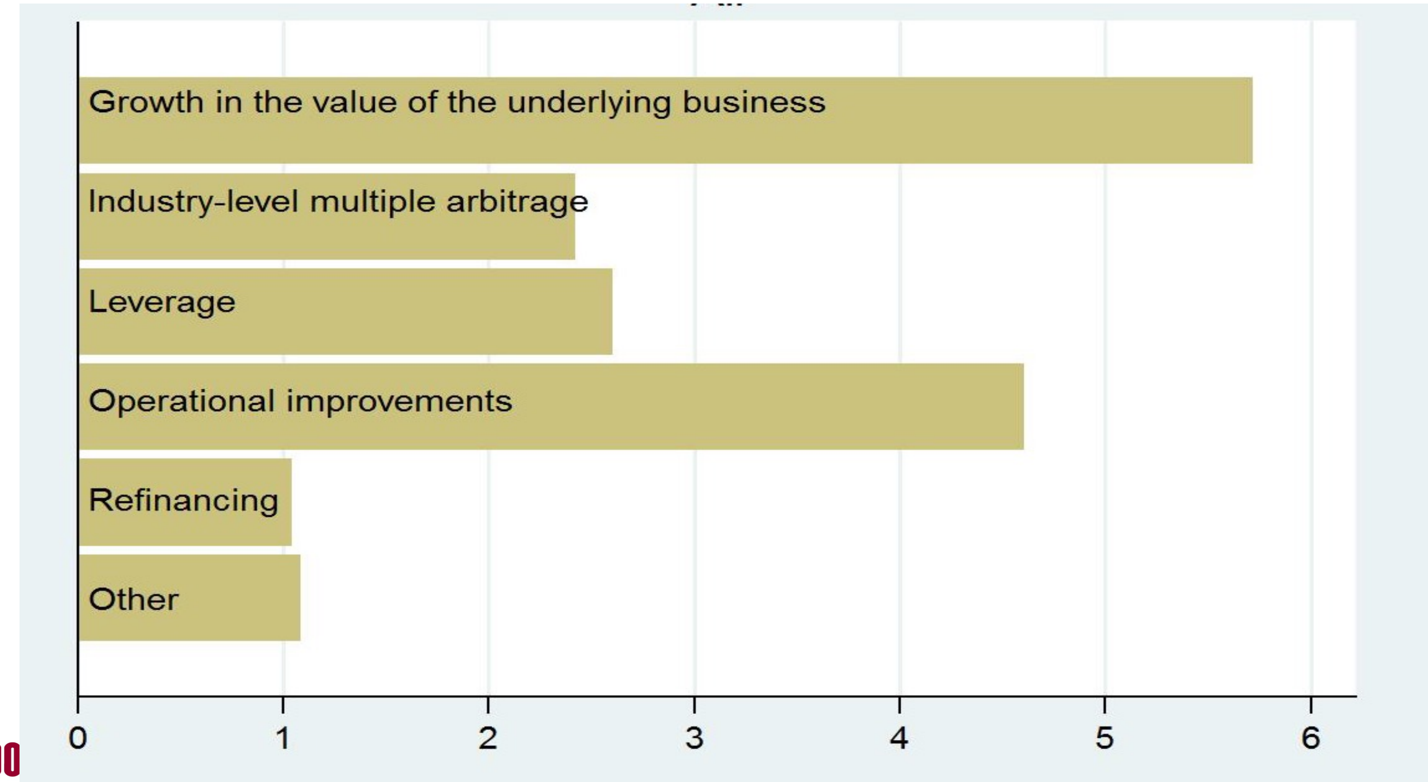
stion type: Rank (longer bar = higher importance)

Factors for PE Investment Decision – 2020 Survey

			AUM		Age	
Investment factor	Mean	Median	Low	High	Young	Old
Ability to add value	7.7	8.0	7.9	7.5	7.7	7.7
Business model / Competitive position	8.5	9.0	8.5	8.6	8.6	8.4
Fit with Fund	6.9	7.3	6.8	7.0	7.1	6.7
Industry /Market	7.2	8.0	6.9	7.6*	7.1	7.4
Management team	8.0	8.0	8.0	8.1	8.0	8.1
Valuation	7.2	8.0	7.3	7.1	7.2	7.2
Ability to be cash flow positive	7.7	8.0	7.8	7.5	7.8	7.5
Other	1.3	1.0	1.3	1.4	1.2	1.4
Observations	151	151	76	75	76	75

Value Creation – Identified pre-deal?

- Key return drivers (ranking).
  - Growing value of business and operational improvements.
  - Leverage and multiple arbitrage also important, but less so.



Projected Source of Value on PE Investments 2020 Survey

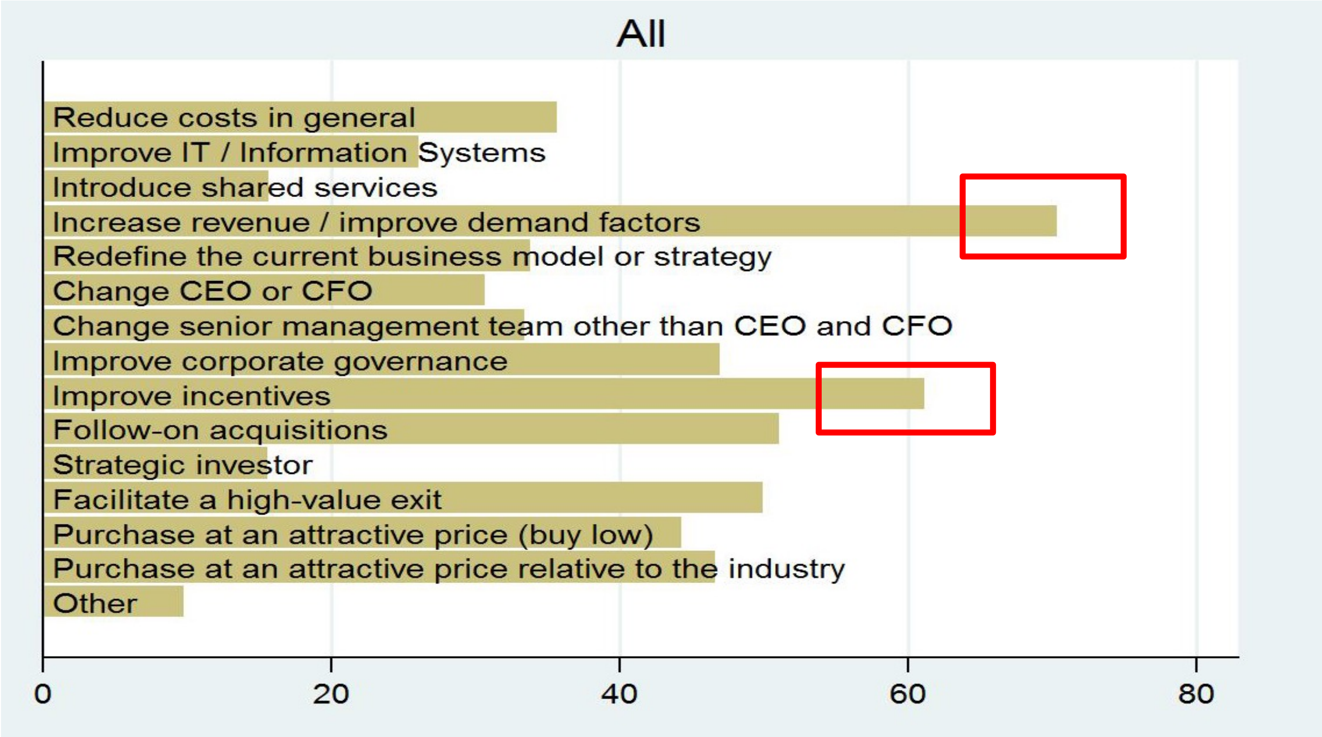
Source of value	Mean	Median	AUM		Age	
			Low	High	Young	Old
Growth in revenue of the underlying business	8.1	8.0	7.9	8.3	8.0	8.1
Reducing costs	5.4	5.0	5.5	5.4	5.5	5.3
Industry-level multiple arbitrage	4.6	4.5	4.4	4.8	4.6	4.7
Leverage	3.9	4.0	3.9	4.0	4.0	3.8
Refinancing	3.2	3.0	3.2	3.1	3.2	3.2
Other	1.7	1.0	1.5	1.9	1.9	1.6
Observations	145	145	73	72	77	68

Key source of value is growth.

Cost cutting and leverage are distant second and third.

Value Creation – Pre-deal?

- Where do PE investors expect to get value when they invest?
  - Increased revenue and improved incentives perceived as key sources of value.



How much do GPs interact with companies? Summer 2020

		AUM		Age	
Frequency of interactions	Mean	Low	High	Young	Old
Never	0.1	0.0	0.3	0.0	0.3
Less than once a month	0.8	0.0	1.7	1.2	0.4
Once a month	5.4	5.4	5.5	9.9	0.0***
2-3 times a month	11.8	13.5	10.0	8.6	15.6
Once a week	24.2	24.3	24.1	24.7	23.7
Multiple times a week	50.7	50.0	51.5	45.7	57.0
Every day	6.8	6.8	6.8	9.9	3.0*
Observations	147	74	73	81	66

82% interact once a week or more often.

Operational Engineering

- Judge for PEI Operational Engineering Awards
  - 2021 – 35 Entries.
    - Median IRR of 50%+ / Median MOIC of 4.1X
    - At least 25% mention:
      - **New CEO, upgraded team, new strategy, technology upgrade, new sales approach, new products, improved efficiency and acquisitions.**
  - 2022 – 35 Entries.
    - Median IRR of 50%+ / Median MOIC of 5.3X
    - At least 25% mention:
      - **New CEO, upgraded team, new strategy, technology upgrade, new sales approach, new products, improved efficiency and acquisitions.**

Some examples:

- Aldevron / EQT
  – Aldevron was a plasmid DNA supplier. EQT helped transform it into a scalable manufacturer of critical input materials for genomic medicine.
  – Built a new manufacturing facility in North Dakota.
  – Launched an mRNA manufacturing service and boosted investments in its protein manufacturing capabilities.
    » Manufactured for Moderna.
  – Implemented a new enterprise resource planning system and significantly overhauled its finance, legal and quality processes.
  – Bought for $3.4 B. Sold for $9.6 B.

- BJ's Wholesale / Leonard Green
  – New management, New products, More data analytics.

Some examples:

- Sun Country Airlines / Apollo.
  - Bought in 2018. Was focused on business traveler.
  - Apollo brought in new management.
  - Transformed into tech-forward low-cost carrier.
    - New routes. Expanded into cargo.
    - Invested $200 M in aircraft / interiors / IT.
  - Grew passengers 43%, revenue 25% and reduced unit costs / fares.
  - IPO in 2021. Apollo made 3X – 4X. During pandemic.
- Columbus Meats / Arbor.
  - Columbus Meats. High quality deli meat.
  - PE firm bought from family / professionalized.
  - Arbor bought in secondary buyout for 8X EBITDA.
  - Invested in new plant / national distribution / many new products.
  - Revenue and EBITDA up.
  - Sold to Hormel for 17X EBITDA.

Some examples:

- Trellis Rx / Francisco Partners
  - Identified opportunity to provide specialty pharmacy services to patients across the US through integrated, in-house systems.
  - invested in proprietary software platform, which streamlined workflow and generated analytics for Trellis Rx's specialty pharmacies.
  - Launched a chronic disease management program to complement its core specialty pharmacy business.
  - Partnered with 17 clients, supporting more than 60 hospitals and 200 clinics.
- Taylor-Made Golf / KPS
  - At purchase, company was in a declining end-market with cost structure issues and operating losses.
  - Set up a new ERP system; established a sales and distribution infrastructure across 14 markets; consolidated multiple distribution centers into one; eliminated all retail outlets in the US; improved range of products; improved contracts with athletes.
  - EBITDA went from negative $80 million to $192 million, while revenues doubled.

Some examples:

- KKR:
  - Peter Stavros, co-head of Americas private equity KKR, implemented "an innovative employee engagement and ownership model, an approach that has been successfully implemented at a number of companies including Gardner Denver / Ingersoll Rand, Capsugel, Capital Safety and CHI Overhead Doors."
  - More broadly-based stock ownership, awarding stock to factory workers and other non-executive employees.
  - Stavros claims that those incentives have led to measurable improvements in productivity and employee safety. https://www.kkr.com/our-firm/leadership/pete-stavros

Summary at the Company Level

- **Large sample evidence shows that PE investors improve operating performance / productivity of their portfolio companies.**
  - **Non-financial metrics also tend to be positive.**

- **PE investors today are most focused on growing their businesses.**

At the Portfolio / Fund Level:
What about performance for LPs (net of fees)?

- **Improved operating performance at company level does not mean that PE funds generate out-performance net of fees.**

  - **It depends on what PE funds pay to acquire companies.**
    - » Premiums usually go to selling shareholders.
    - » Which accrue to society, but not to PE investors.

  - **It depends on fees.**

What about performance for LPs?

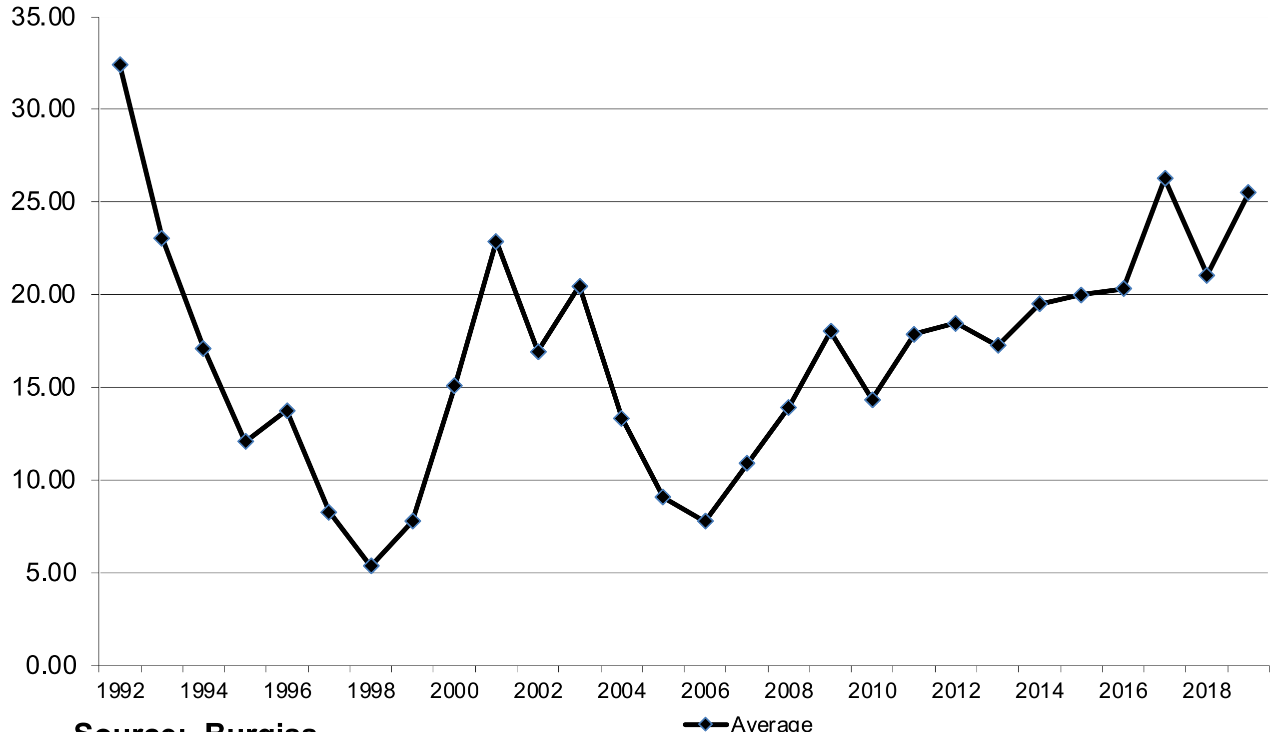
- How is performance measured?
- What has performance been on average?
- All results are net of fees.
- Use Burgiss data.
  - Best data for performance.
  - No reporting bias.
  - Minimal selection bias, if any.
- For reference:
  - Harris, Jenkinson, Kaplan, Journal of Finance, 2014.
  - Harris, Jenkinson, Kaplan, Journal of Investment Management, 2016.
  - Harris, Jenkinson, Kaplan, Stucke, Journal of Corporate Finance, (forthcoming).

How is performance measured?

- **The industry focuses on two metrics**
  - Annualized IRR (net of fees)
  - Multiple of Invested Capital (MIC) or Total Value to Paid-in-capital (TVPI).
    - » Total Value Returned / Invested Capital
    - » (Distributed Value + Residual Value) / (Capital calls + Fees)
- **These are absolute measures.**
  - Net IRR
    - » Absolute (not relative) - does not control for the market.
    - » Is sensitive to sequencing of investments.
  - Multiple of Invested Capital
    - » Absolute (not relative) - does not control for the market.

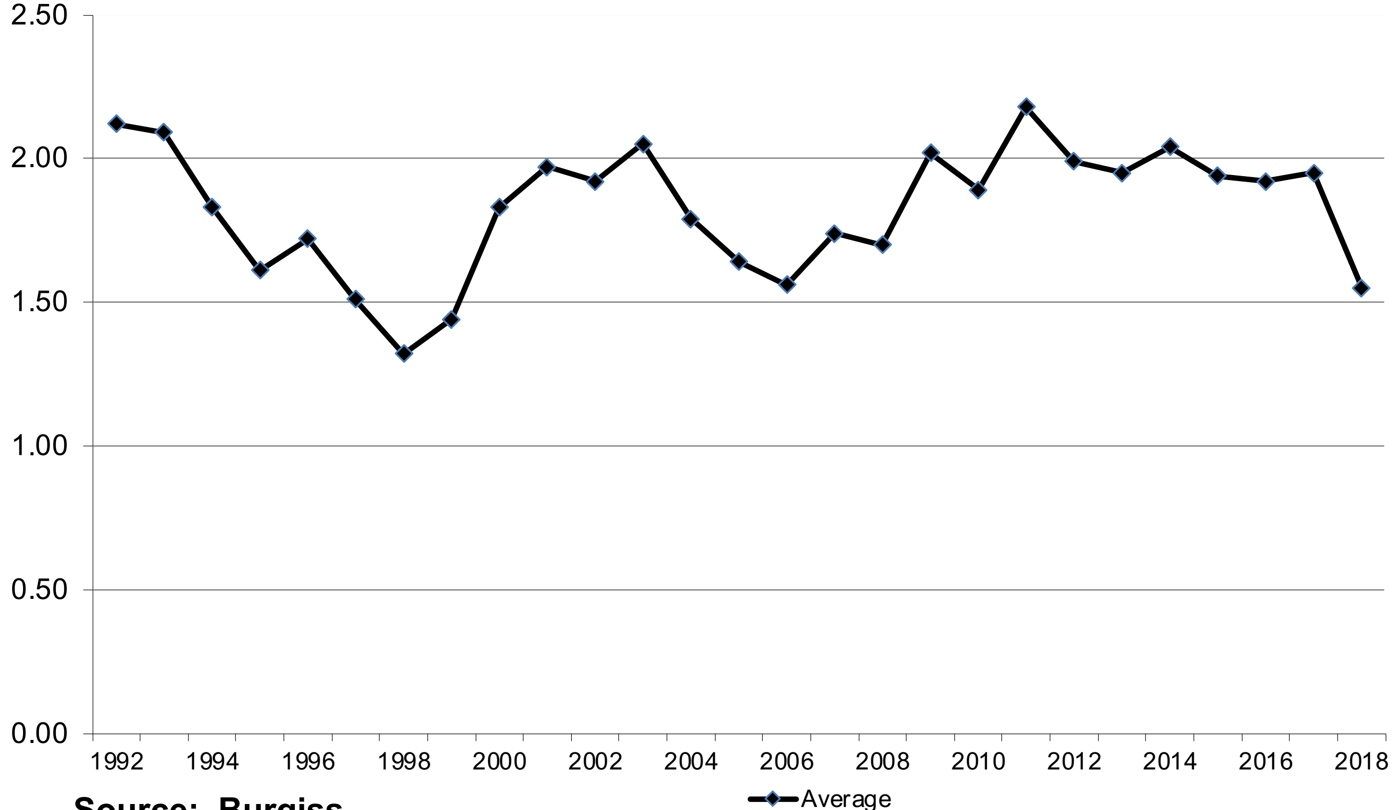
What have returns looked like?

U.S. Buyout IRRs by Vintage Year, 1992 - 2019
Pooled Ave. as of 2022 Q3



Source: Burgiss

U.S. Buyout MOICs by Vintage Year, 1992 - 2018
Pooled Ave. as of 2022 Q3



Source: Burgiss

What has performance been on average?

- Vintage year IRRs vary a lot.

- Vintage year Multiples of Invested Capital vary less.
  - Generally between 1.5 and 2.0 since mid-1990s.

- Is that performance good or bad?
  - Compared to what?

- A 3rd method – KS-PME
  - (Kaplan-Schoar Public Market Equivalent).

- Compare two investments:
  - 1. Invest $100 million.
    - » 4 years later it returns $200 million.
    - » IRR = 19% ; Multiple of Invested Capital = 2X

  - 2. Invest $100 million.
    - » 4 years later it returns $100 million.
    - » IRR = 0% ; Multiple = 1X

  - Which investment is better?

- Investment 1:
  - Invest $100 million in September 2011.
  - Return $200 million in September 2015.
  - Instead, if you had invested the $100 million in the S&P 500, you would have had $185 million in September 2015.
  - Gross PME = $200 / $185 = 1.08.
  - Net PME = $180 / $185 = 0.97.

- Investment 2:
  - Invest $100 million in September 2007.
  - Return $100 million in September 2011.
  - Instead, if you had invested the $100 million in the S&P 500, you would have had $82 million in September 2011.
  - Gross PME = Net PME = $100 / $82 = 1.22.

- **For LP, investment 2 is much better.**

How is Performance Measured?

- Kaplan and Schoar (2005) introduced PME.
  - = market-adjusted multiple.
  - PME = Public Market Equivalent.
    - $$\frac{\Sigma(\text{S\&P 500 discounted value of cash outflows})_t}{\Sigma(\text{S\&P 500 discounted value paid in capital})_t}$$
    - Compares fund to investment in S&P (including dividends).
    - If PME > 1, then LPs did better than S&P 500.

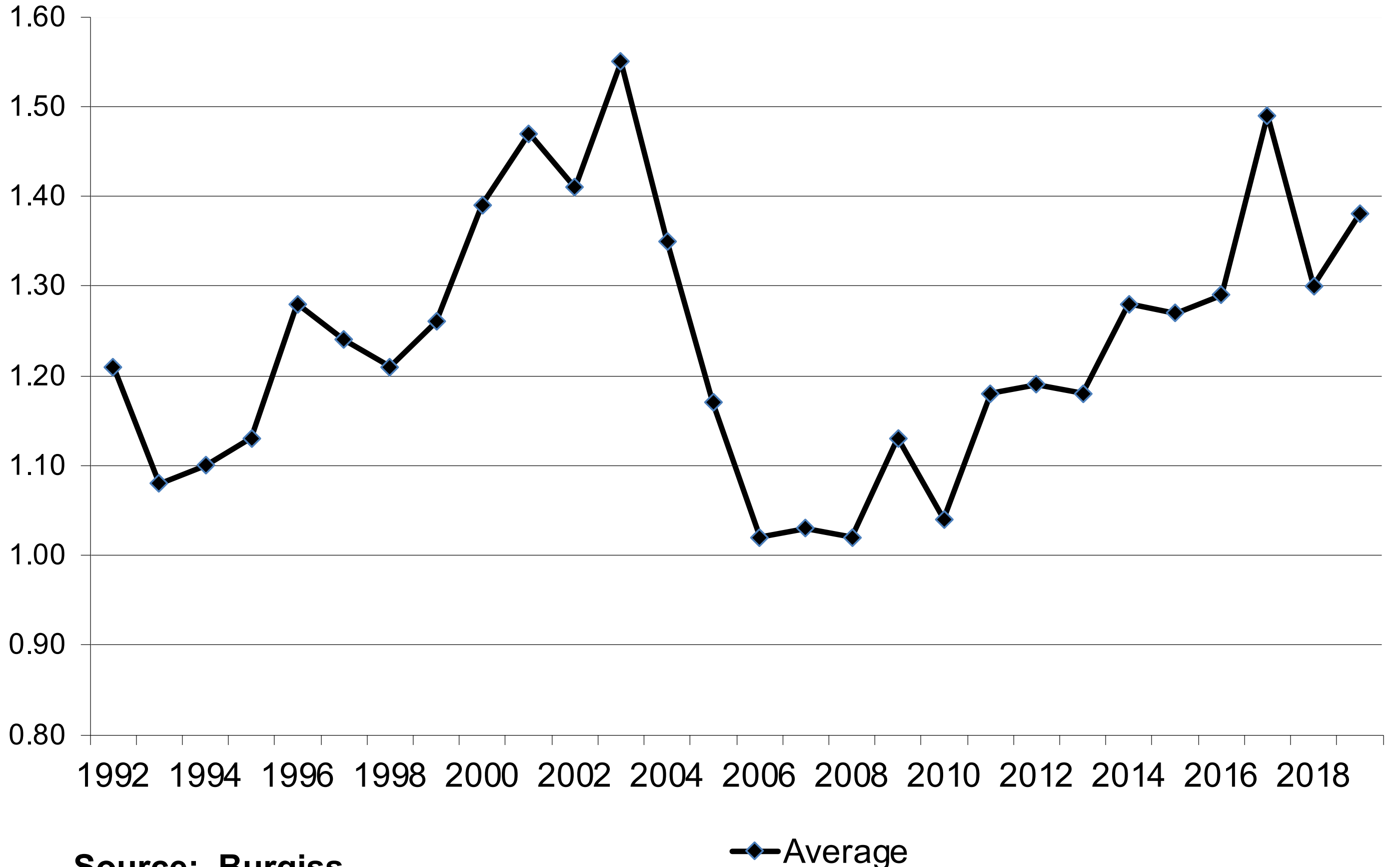
Who measures performance?

- Four (at least) commercial databases:
  - Burgiss.
  - Cambridge Associates (CA).
  - Preqin.
  - Pitchbook.

- Results are similar in all 4 databases for buyout (not VC).

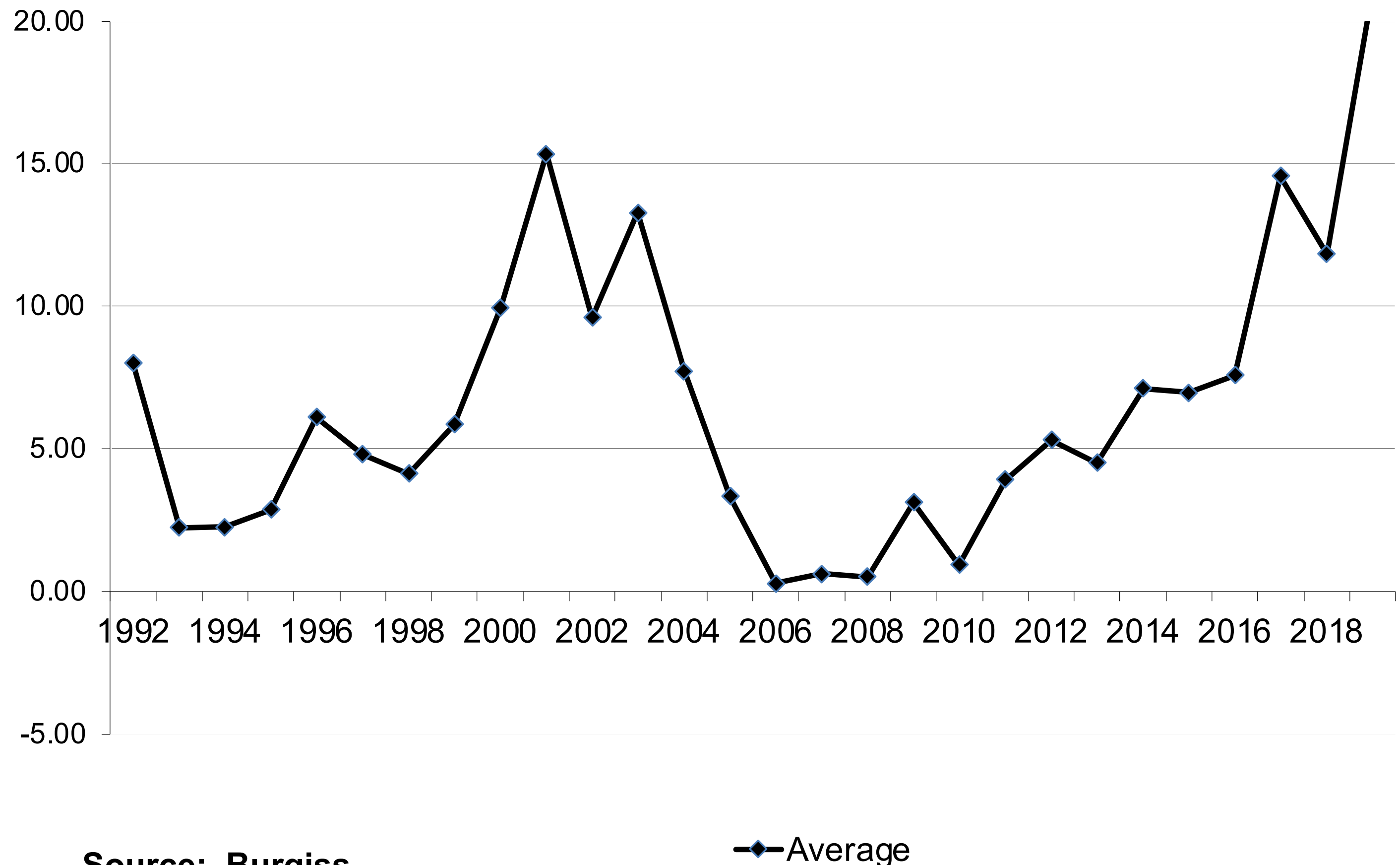
- We use Burgiss which is likely most reliable. Burgiss get data from LPs.
  - LPs use Burgiss software to record / monitor performance.
  - No bias in Burgiss for specific LPs.
  - Superior to Preqin and Pitchbook who rely on LPs or GPs to provide data.

U.S. Buyout PMEs by Vintage Year, 1992 - 2019
Pooled Ave. as of 2022 Q3



Source: Burgiss

U.S. Buyout Direct Alphas by Vintage Year, 1992 - 2019
Pooled Ave. as of 2022 Q3



Source: Burgiss

Summary at the Fund Level

- **Buyout fund performance has been remarkably good.**
  - **Every vintage year since 1992 has outperformed the S&P 500.**
  - **Outperformance has been roughly 5% per year over a long period of time and post-Great Financial Crisis.**
  - **Significant value has gone to pension funds.**

- **The performance is not explained by leverage / risk.**
  - **Korteweg and Nagel (2022) estimate fund betas using cash flows and find them to be less than or equal to 1.**
    - **Betas measure how funds vary with overall stock market.**

Summary at the Fund Level

- Caveat: Does not include Real Estate, VC or Infrastructure funds.
  - Including these, overall performance still superior to public markets.
    - » PME of 1.12 overall, 1.18 post-GFC.
    - » Real Estate and Infra = 0.90 post-GFC.
      - But risk-return different from stock market.

Why Has PE Grown So Much?

- **First and foremost, as shown in the previous slides, performance has been strong.**
  - **The average fund in every vintage year since 1992 has outperformed the S&P 500.**
  - **LPs include many pension funds and their beneficiaries.**

- Second, PE provides diversification over and above holding public equities.
  - Fewer public cos. to invest in and public cos. are tech heavy.
  - See Goetzmann, Gourier and Phalippou (2018).

Why Has PE Grown So Much?

- Third, PE is attractive to executives relative to being public.
  - More pay / upside. See Gompers et al. (2022)..
  - PE investors are partners not raiders.
  - Avoid media, shareholder proposals, lawsuits, ISS, activists, etc.
    - » See Bennett, Stulz, Wang (2023), Ewens and Farre-Mensa (2021).

- Fourth, regulation.
  - SOX compliance, SEC comment letters, shareholder proposals, compensation disclosures, etc.
    - » See Bennett, Stulz, Wang (2023), Ewens and Farre-Mensa (2021).
  - Can spend more time on value creation, less on compliance.
  - Also why private credit has grown significantly post-Dodd Frank.
    - » See Erel and Inoz (2022)

Will PE Growth Continue?

- PE still has tailwinds.
  - Operational engineering capabilities of PE firms are real.
  - CEOs / execs more receptive to PE than in past.
  - Regulation less onerous for private companies than for public companies.
    - » More regulation on public companies coming (climate disclosures)?
  - More willing to make long-term investments / big changes that have short-term costs.
  - PE brings diversification advantages.

- But, also, some headwinds.
  - Increased capital means more deal competition.
  - Higher interest rates (at least for now).

Thoughts on regulation?

- Portfolio Company Reporting:
  - PE funded companies already report performance to Federal Reserve and Census.
  - Not clear there are benefits from companies reporting publicly when limited partners are sophisticated investors and informed by PE firms.
    - » Reasons to believe there are negative externalities / costs.
  - No reason to mandate reporting.
- At the fund level:
  - Fee reporting:
    - » PE firms have improved at reporting fees to LPs.
      - Proposals for more transparency will lock that in.
    - » But, some of the proposals are onerous / not clear.
  - Increased reporting requirements / regulation imposes fixed costs and favors the larger PE firms over the smaller / new ones.

Thoughts on regulation?

- Overall, PE has performed well.
  - LPs receive a lot of info on companies and fees.
    - » Aided by LPACs, consultant.
  - Be careful in imposing costly additional disclosure requirements with questionable / unclear benefits.

Thoughts on regulation?

- Increase attractiveness of being a public company.
  - Reduce regulatory burden:
    - » SOX 404 every other year, not every year?
      - Self-attestation every other year.
    - » Reduce costly disclosure requirements with unclear benefits?
    - » Make it more difficult, not easier to litigate?
      - D&O insurance increasingly expensive.
  - Still at disadvantage re incentives / governance / operational engineering.

Summary

- At the company level:
  - PE outperforms.
    - » Companies are more efficient.
  - Why?
    - » Combination of financial, governance, and operational engineering.
  - PE investors most focused on growing companies than on cutting.

- At the fund level:
  - PE has outperformed public markets each vintage year 1992 to 2019.
  - Outperformance does not appear to be caused by higher risk.

Summary

- PE has grown markedly because:
  - Performance has been strong.
  - Operational engineering is effective and attractive to executives.
  - Public companies and public markets have become less attractive.

- Regulation:
  - PE has performed well.
    - » Be careful in imposing costly additional disclosure requirements with questionable / unclear benefits.
  - If anything, room to reduce public company regulation

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