Private Equity: Past, Present and Future

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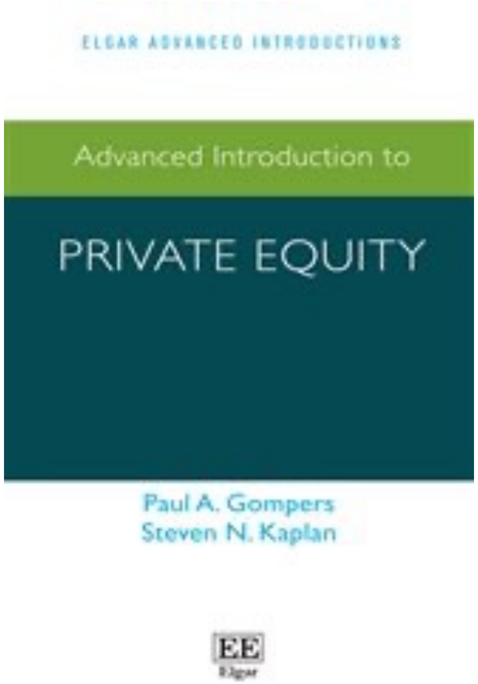
Prepared as Keynote for NBER LTAM Conference April 2024

Overview

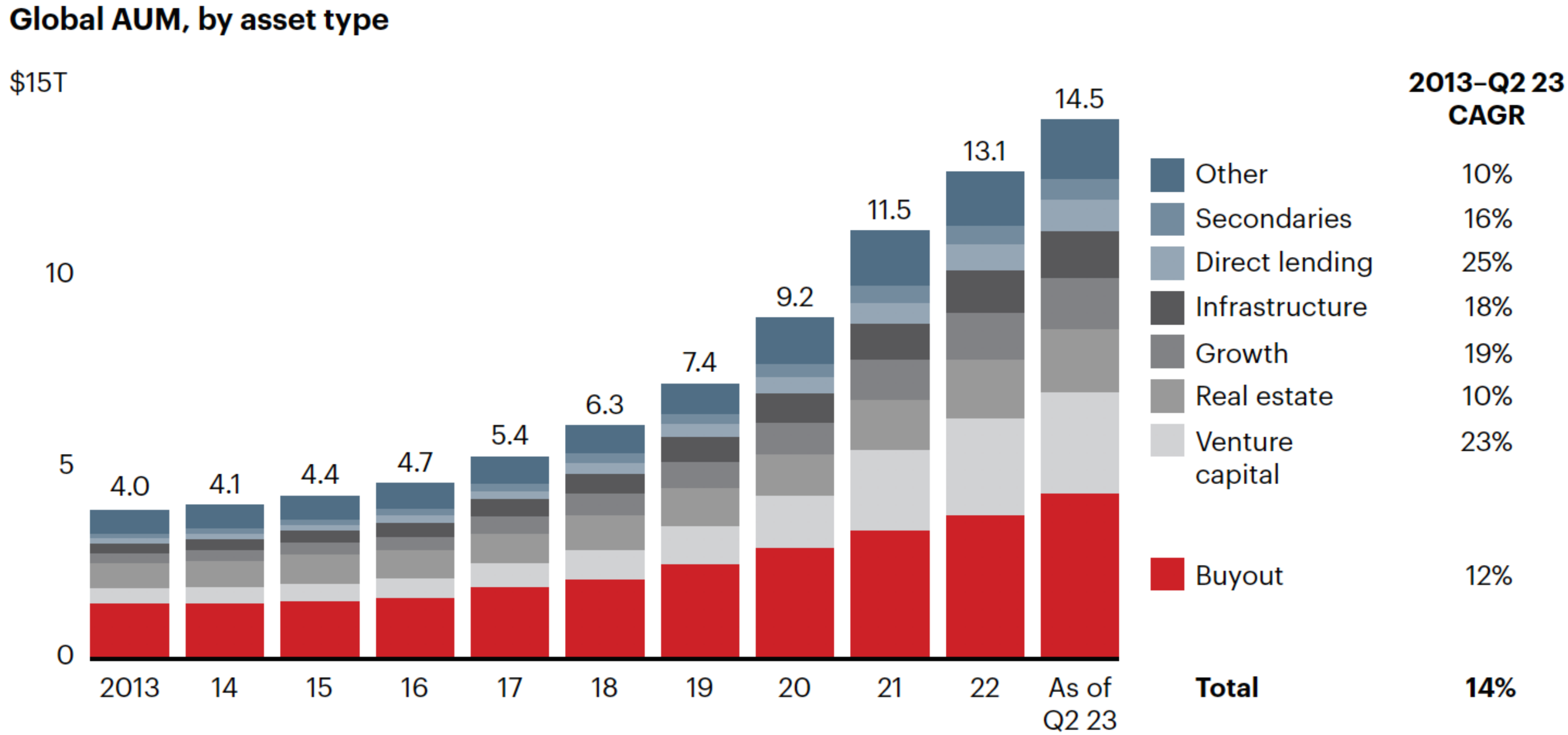
- How has Private Equity / Private Capital grown?
- What does PE (Buyout) do at the company level?
- What does PE (Buyout) do at the fund level?
- Why has PE / PC grown so much? Will it continue?
- Thoughts on the future?

For more details, see:

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



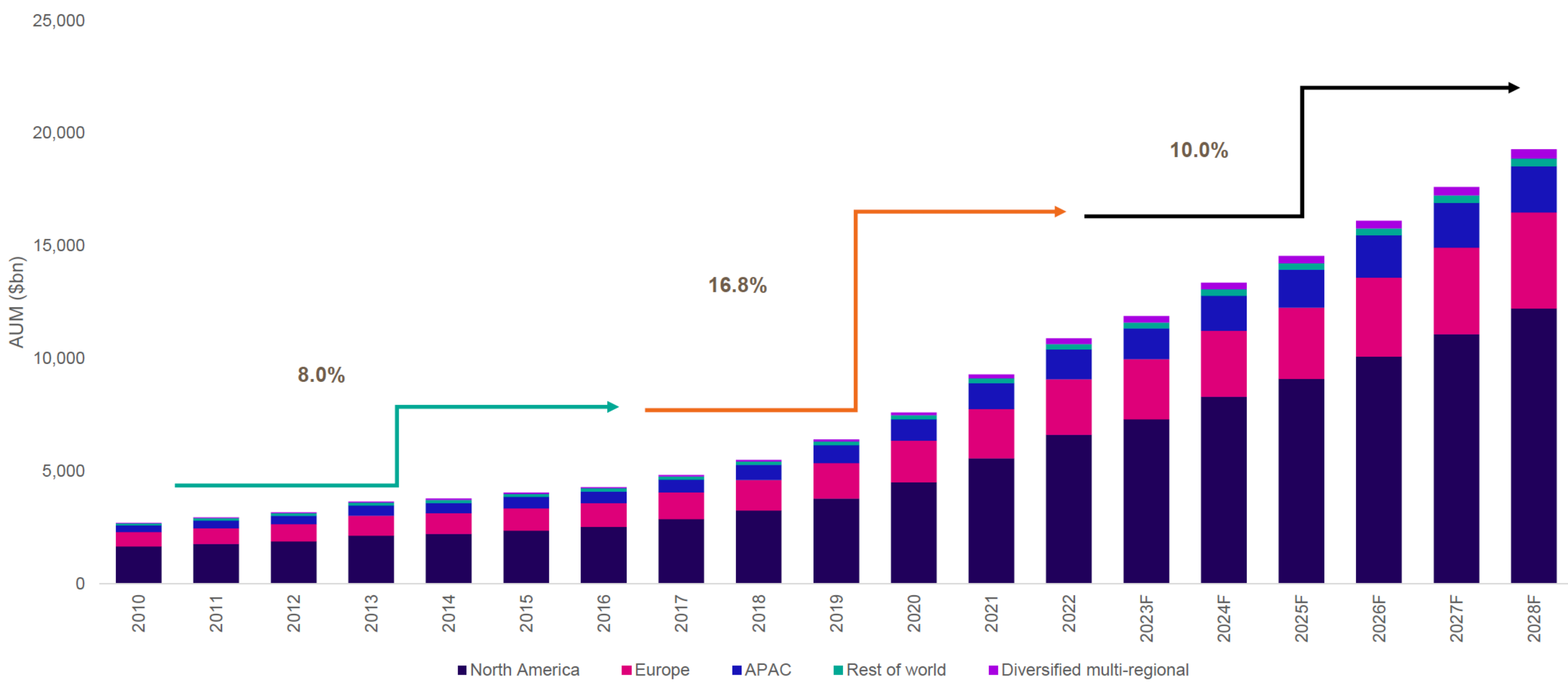
How Has PE / PC Grown?



Notes: Buyout category includes buyout, balanced, coinvestment, and coinvestment multimanager funds; secondaries includes real estate secondaries, infrastructure secondaries, direct secondaries (PE), and secondaries (PE) fund types; other category includes fund-of-funds, mezzanine, natural resources, hybrid, private investment in public equity, and real assets; excludes distressed private equity
Source: Preqin

How Has PE / PC Grown?

Private capital forecast by Preqin to grow to $19.3tn, led by North America

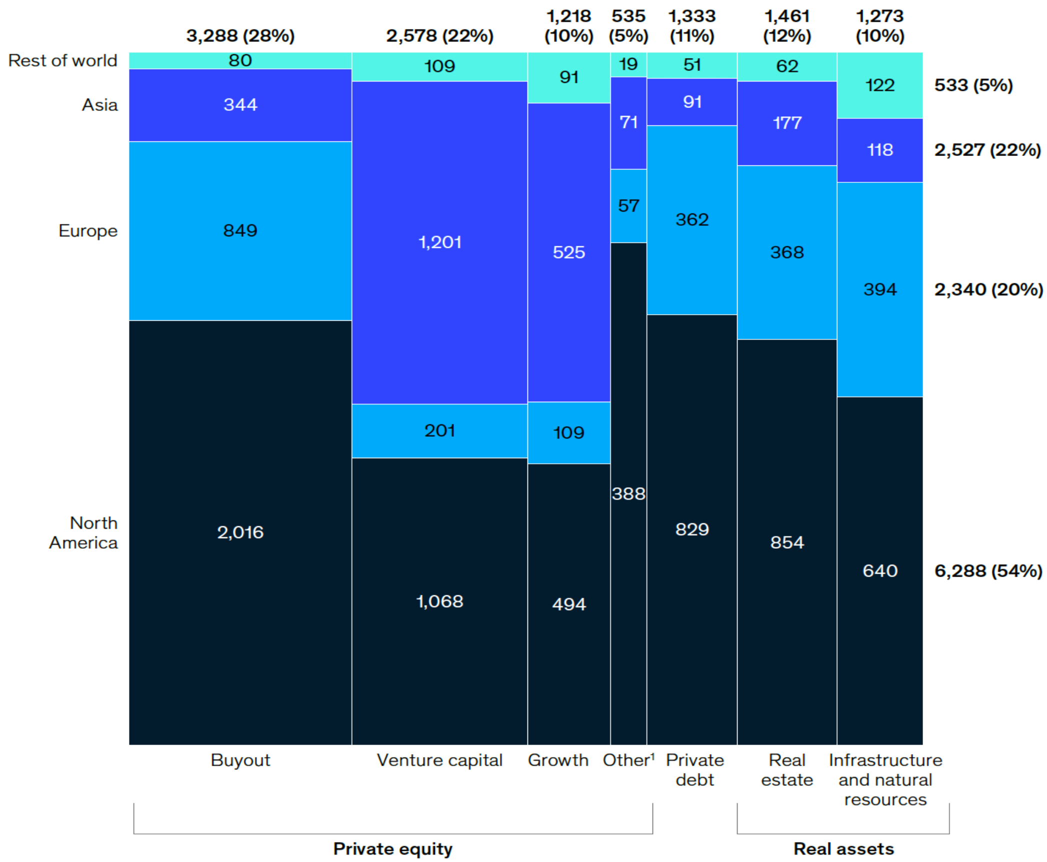


How Has PE / PC Grown?

Private markets AUM totaled $11.7 trillion.

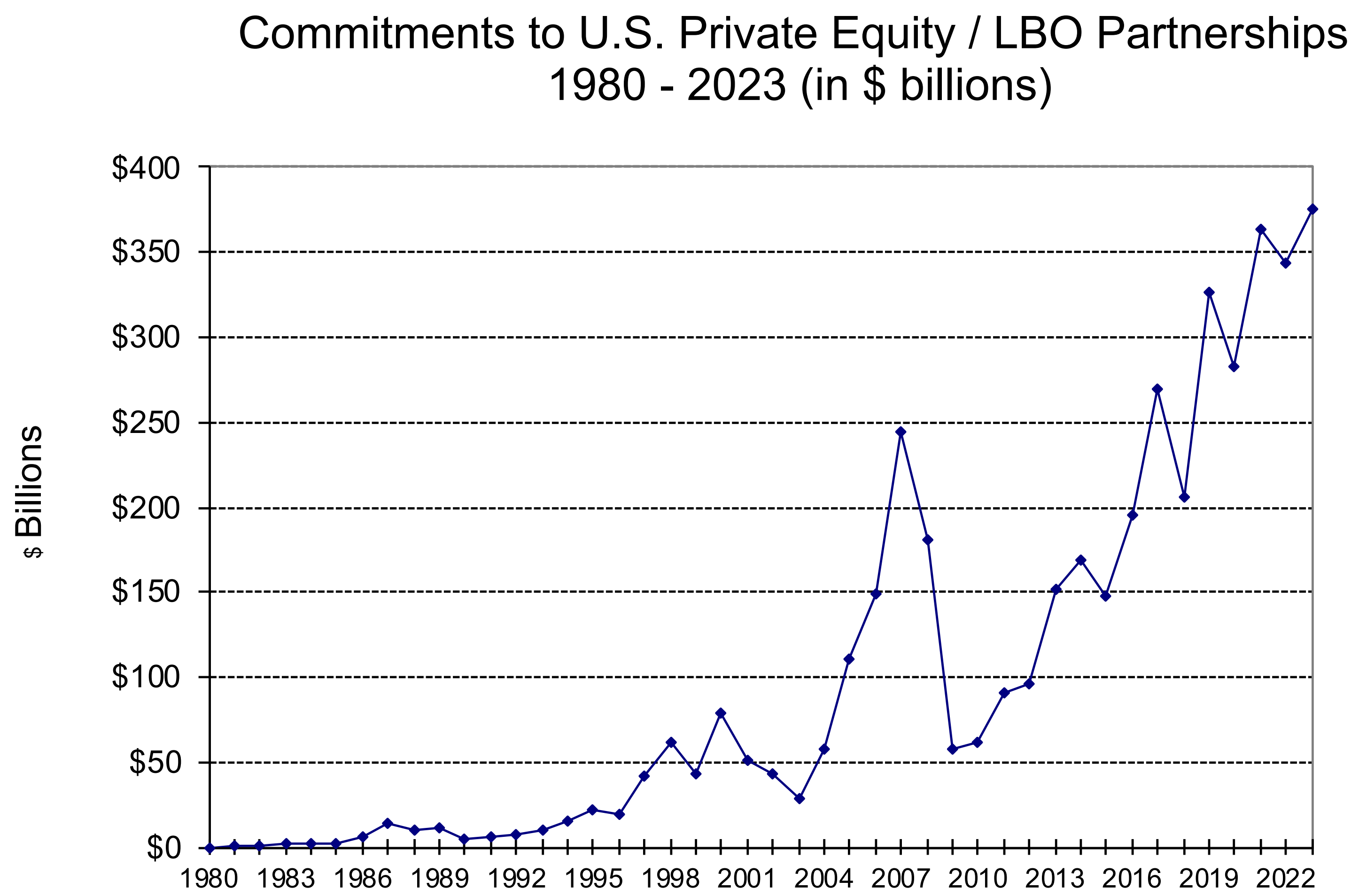
Private markets assets under management, H1 2022, $ billion

100% = $11.7 trillion



Note: Figures may not sum precisely, because of rounding.
[1]Includes turnaround PE funds and PE funds with unspecified strategy.
Source: Preqin

How Has PE (Buyout) Grown?



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

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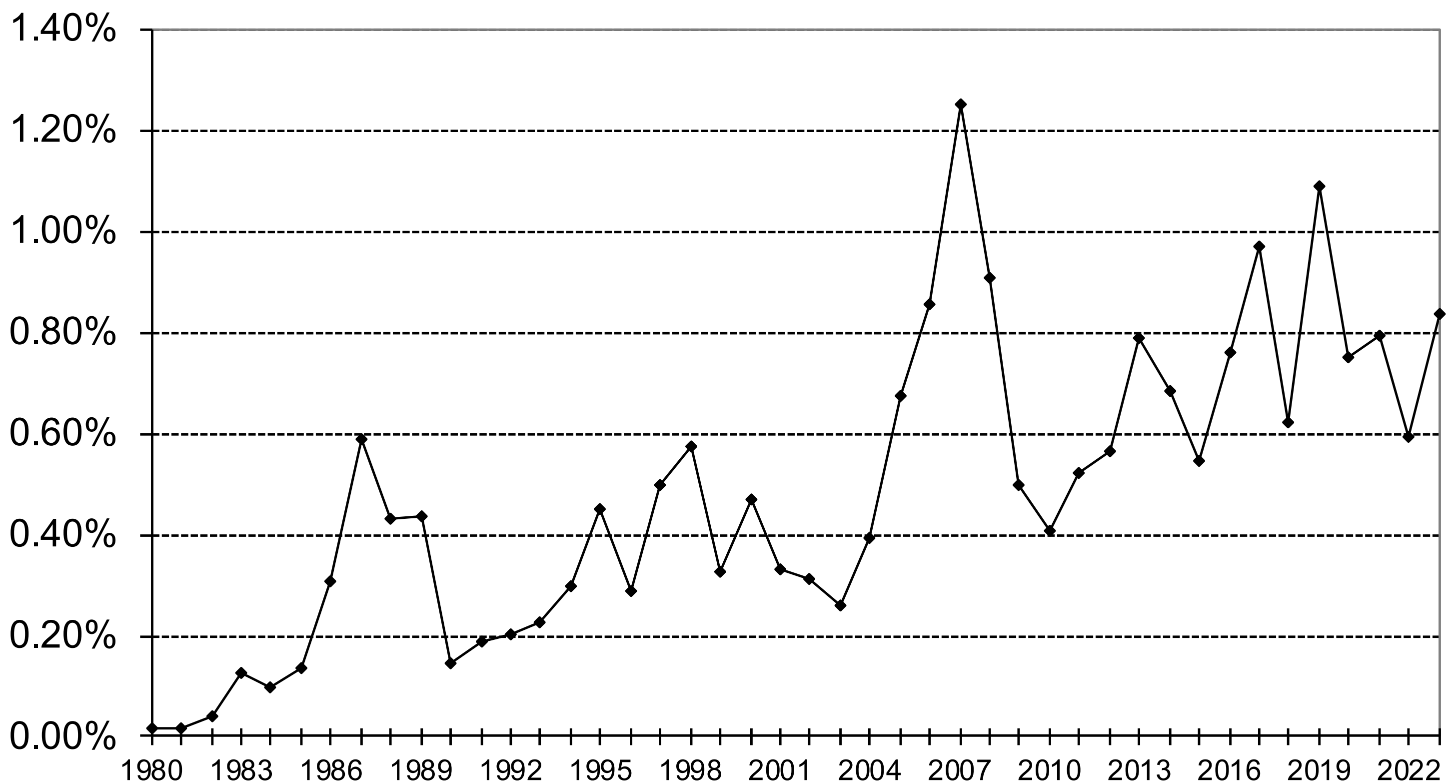
How Has PE (Buyout) Grown?

Commitments to Private Equity / LBO Partnerships in U.S.
as Fraction of Stock Market Capitalization 1980 - 2023



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

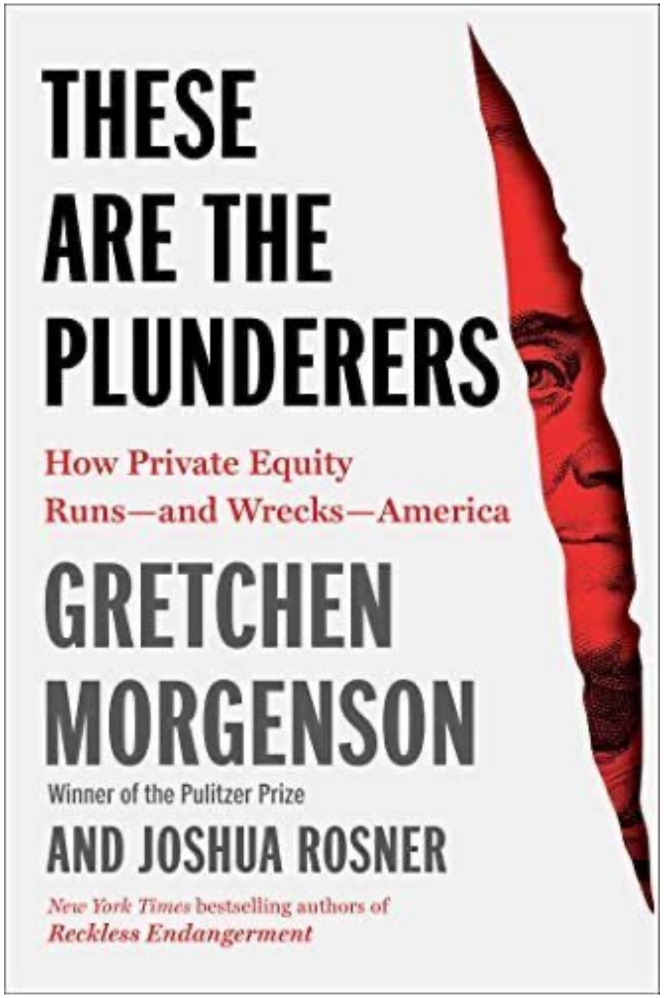
PE (Buyout) Firms

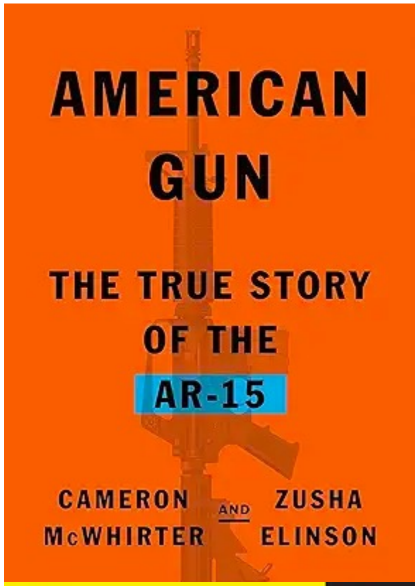
- Back of the envelope calculation:
  - Over last 5 years, buyout firms have raised capital commitments equal to roughly 4% of stock market.
  - Typical investment lasts 5 years = an estimate of investment stock.
  - The typical deal has 50% equity, so the value of portfolio companies would equal 8% of the stock market.
  - Co-investment has increased markedly so that another 25% of equity may come from other investors.
    - » **This pushes portfolio co. value to 10% of the stock market.**
  - This is just for PE / buyout.
    - » The percentage would be higher if we included venture capital, growth equity and infrastructure investment.

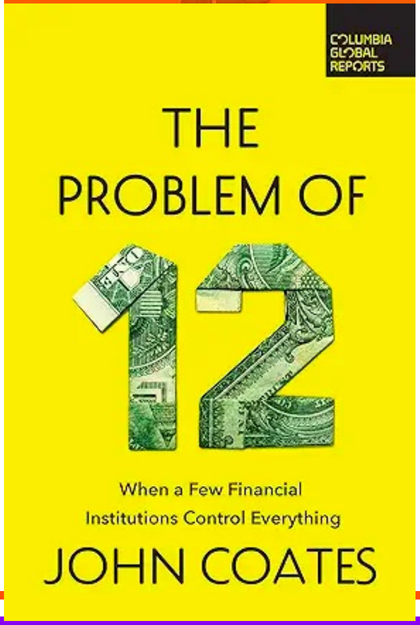
What Do PE (Buyouts) Do At Company Level?

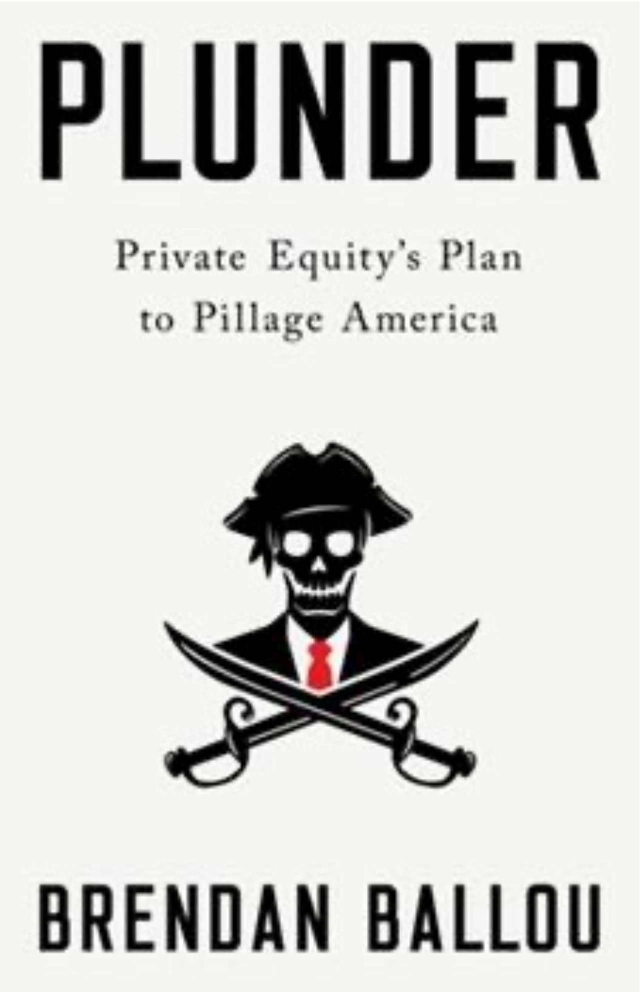
- Business press has a view.

What Do PE (Buyouts) Do At Company Level?









What Do PE (Buyouts) Do At Company Level?

- Truth?

What Do PE (Buyouts) Do At Company Level?

- **Private equity / buyout funded companies 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: 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.
- Howell et al. (2022).
  - PE investments in airports bring marked improvements in airport performance.
- Cohn, Nestoriak and Wardlaw (2018).
  - Workplace injuries decline for public company buyouts vs. similar firms.
- 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 (Buyout) 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, but:
    - **deals lost money ➔ mistakes.**
    - Gandhi et al. (2020). Fewer COVID deaths at PE-backed nursing homes.
- Maug et al. (2020). In Netherlands buyouts:
  - Companies became more efficient and profitable;
  - Less healthy (less productive) workers lose wages and employment.
- Borsa et al. (2023). Summarize healthcare PE papers, lots of variance, but:
    - PE raises costs to patients and payers. Providers more profitable?
    - Mixed results on outcomes. As many positives as negatives.

What Do PE (Buyouts) Do At Company Level?
Non-financial Results, Not All Positive
But have to be wary of bias.

- .

JAMA | Original Investigation

Changes in Hospital Adverse Events and Patient Outcomes Associated With Private Equity Acquisition

Sneha Kannan, MD; Joseph Dov Bruch, PhD; Zirui Song, MD, PhD

Results:

– After PE acquisition, Medicare beneficiaries admitted to private equity hospitals experienced a 25.4%increase in hospital-acquired conditions.
  - » 27% increase in falls. 38% increase in blood infections.
– **But,**
  - » **In-house mortality declined.**
  - » **Post-stay mortality unchanged.**

JAMA Paper on PE and Healthcare

- What did the press say? **Nothing about mortality.**

Private equity ownership of hospitals made care riskier for patients, a new study finds

By Brenda Goodman, CNN

5 minute read · Updated 11:12 AM EST, Wed December 27, 2023

Study: Private Equity Hospital Takeovers Tied to Increases in Patient Falls, Infections

Researchers say new findings 'heighten concerns about the implications of private equity on health care delivery.'

By Steven Ross Johnson | Dec. 26, 2023, at 11:09 a.m.

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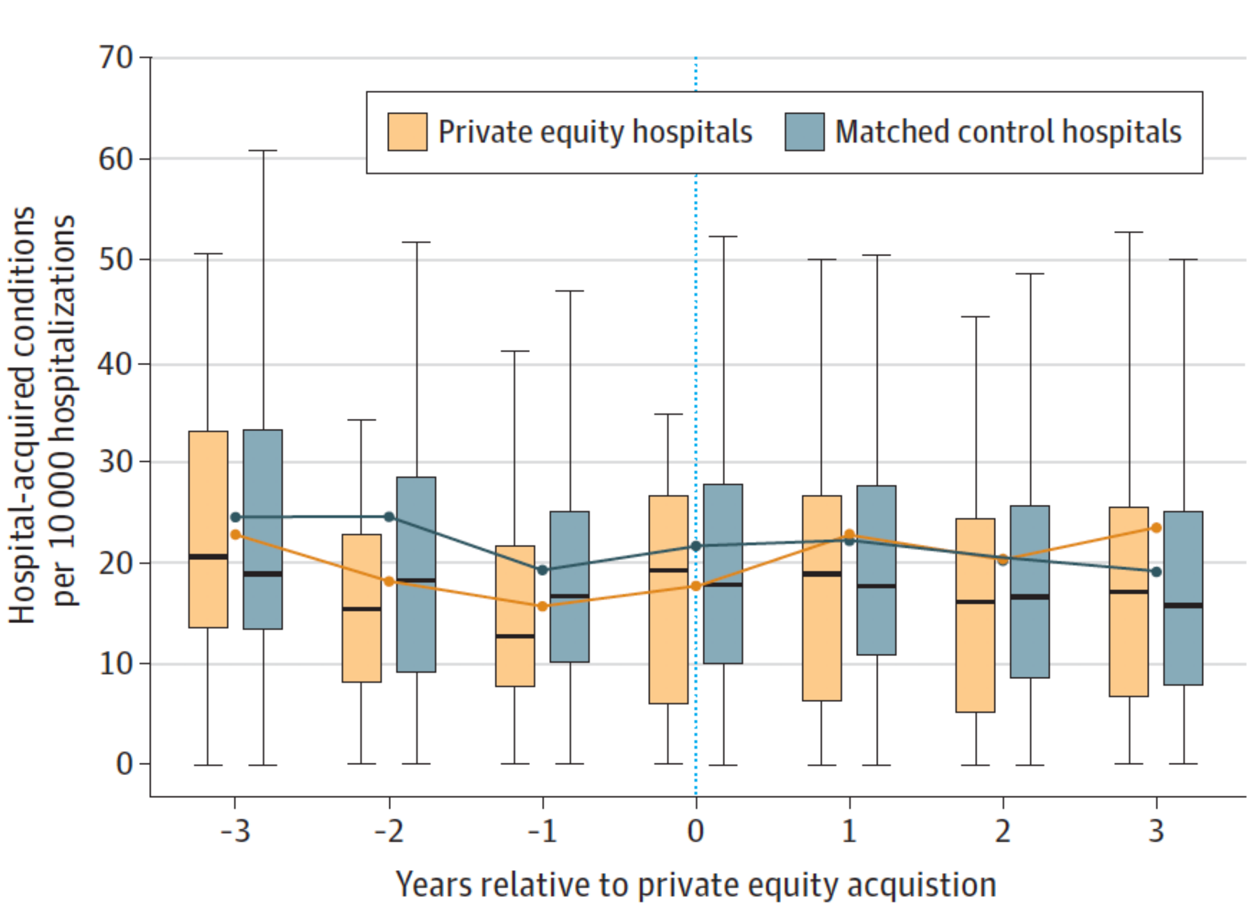
January 04, 2024 05:00 AM

How private equity could be affecting patient safety in hospitals

MARI DEVEREAUX

- Are results on conditions compelling?
  - Hospitals more or less identical except in T-1 and T-2, including T+0.
  - Conditions pop-up in year T+0, with little or no time to implement.

Figure 2. Hospital-Acquired Conditions Before and After Private Equity Acquisition



What Do PE (Buyout) Firms Do?

- **➔ Evidence consistently indicates PE investors make companies more efficient / productive.**
  - No large sample negative results on productivity.
  - Usually with positive externalities, but not always.
    - » Hard to sell business if you hurt customers / employees.

  ➔ Gross of fees, PE investors create value.

- **Success attracts critics.**

What Do PE (Buyout) Firms Do?

- ➔ **Evidence consistently 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 (Buyout) transactions 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 upg6rades implemented, if necessary.
  - Identified cost cutting opportunities / productivity improvements.
- **The days of pure financial engineering are over.**

What Do PE (Buyout) Firms Say They Do?

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

Factors for PE Investment Decision – 2020 Survey

Investment factor	Mean	Median	AUM		Age	
			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

Projected Source of Value on PE Investments 2020 Survey

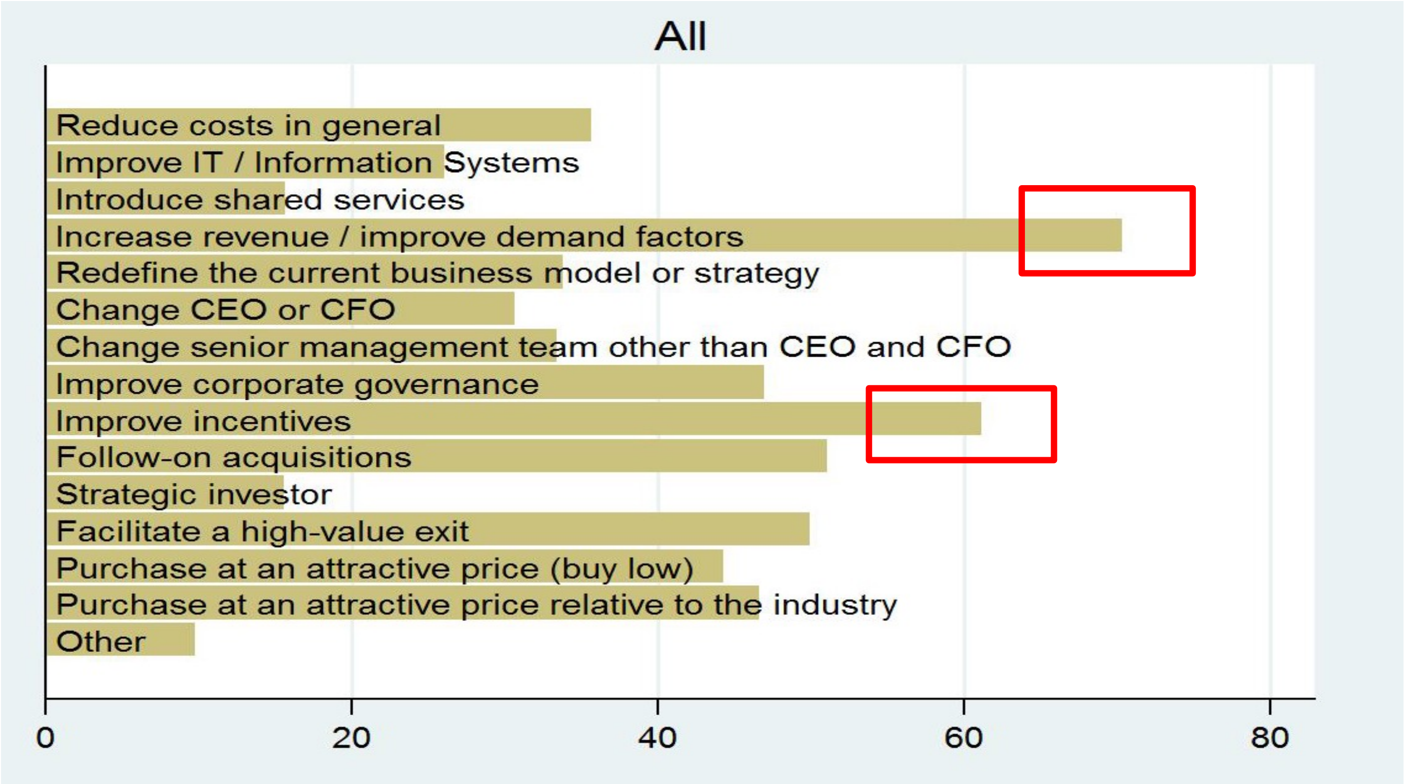
Source of value	Mean	Median	AUM		Age	
			Low	High	Young	Old
Growth in revenue of the underlying business	8.1	8.0	7.9	8.3	8.0	8.1
Reducing costs	5.4	5.0	5.5	5.4	5.5	5.3
Industry-level multiple arbitrage	4.6	4.5	4.4	4.8	4.6	4.7
Leverage	3.9	4.0	3.9	4.0	4.0	3.8
Refinancing	3.2	3.0	3.2	3.1	3.2	3.2
Other	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:

- The Plunder books use many of the same examples of failed deals.
  - Toys “R” Us.
  - HCR ManorCare.
  - Nursing homes.
  - Etc.

- Never mention any positive deals.

Some examples:

- Aldevron / EQT and TA
  - 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.

- Maravai Life Sciences / GTCR
  - Built global provider of life science reagents and services to researchers and biotech innovators, particularly MRNA.

Some examples:

- Sun Country Airlines / Apollo
  - Apollo brought in new management.
  - Transformed into tech-forward low-cost carrier.
    - » Had been focused on business traveler.
    - » New routes. Expanded into cargo.
    - » Invested $200 M in aircraft / interiors / IT.
  - Grew passengers 43%, revenue 25% and reduced unit costs / fares.
  - Bought in 2018. IPO in 2021. Apollo made 3X – 4X. During pandemic.
- Columbus Meats / Arbor
  - Columbus Meats. High quality deli meat.
  - First PE firm bought from family / professionalized
  - Arbor bought from first PE firm in secondary buyout at 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:
  - Pete 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.
  - Recent NYT article about KKR’s investment in Simon and Schuster.
    - » The milestone comes after a particularly turbulent period, when the publisher was put up for sale and bought by a private equity firm. **Since then, investments have boosted morale and helped it grow.**

Summary at the Company Level

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

- **PE (Buyout) investors are focused on growing their businesses.**
  - **Harder to sell businesses if they not growing.**

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.
  - Similar results in very different Addepar database.
- 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, (2023).

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.

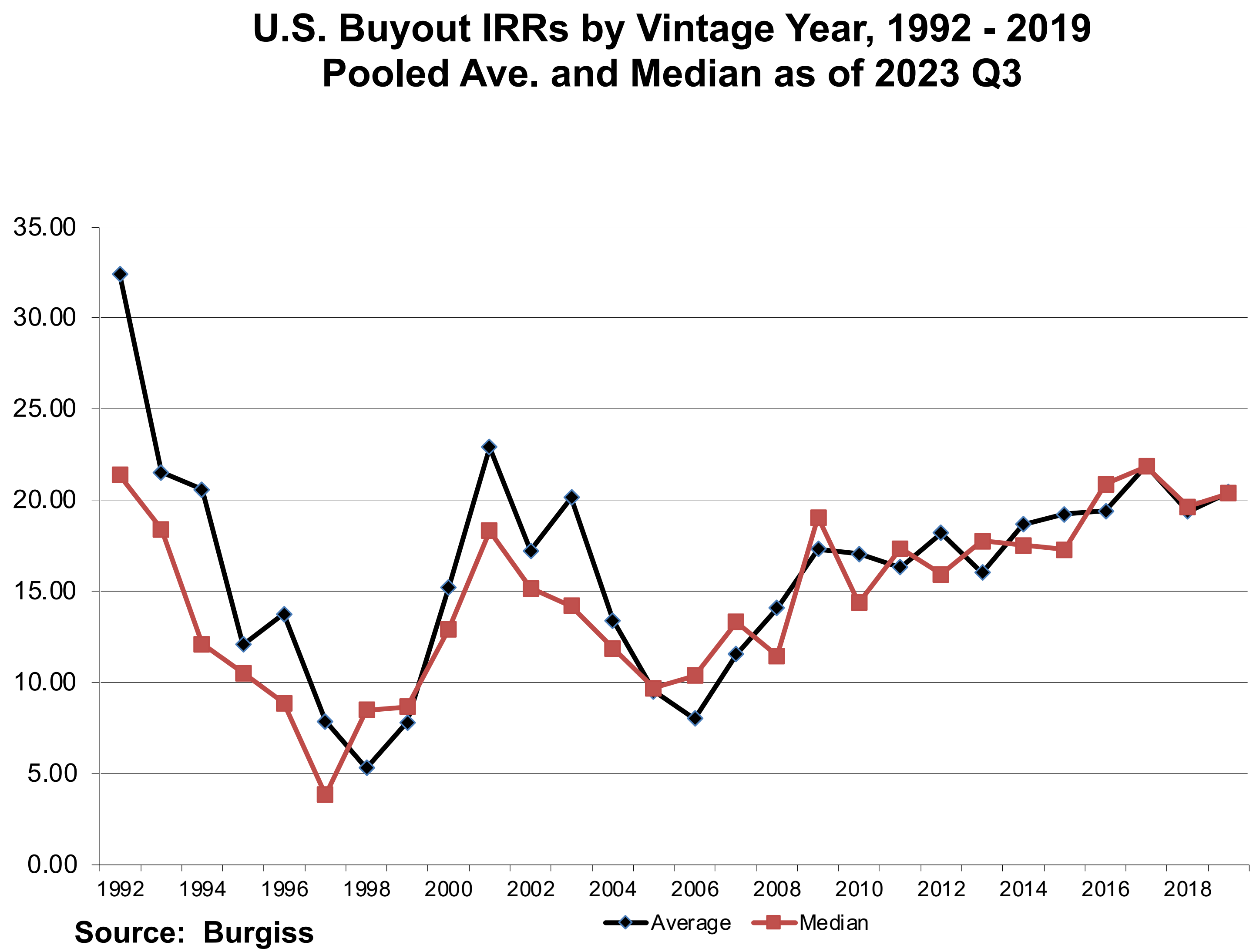
Who measures performance?

- 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.

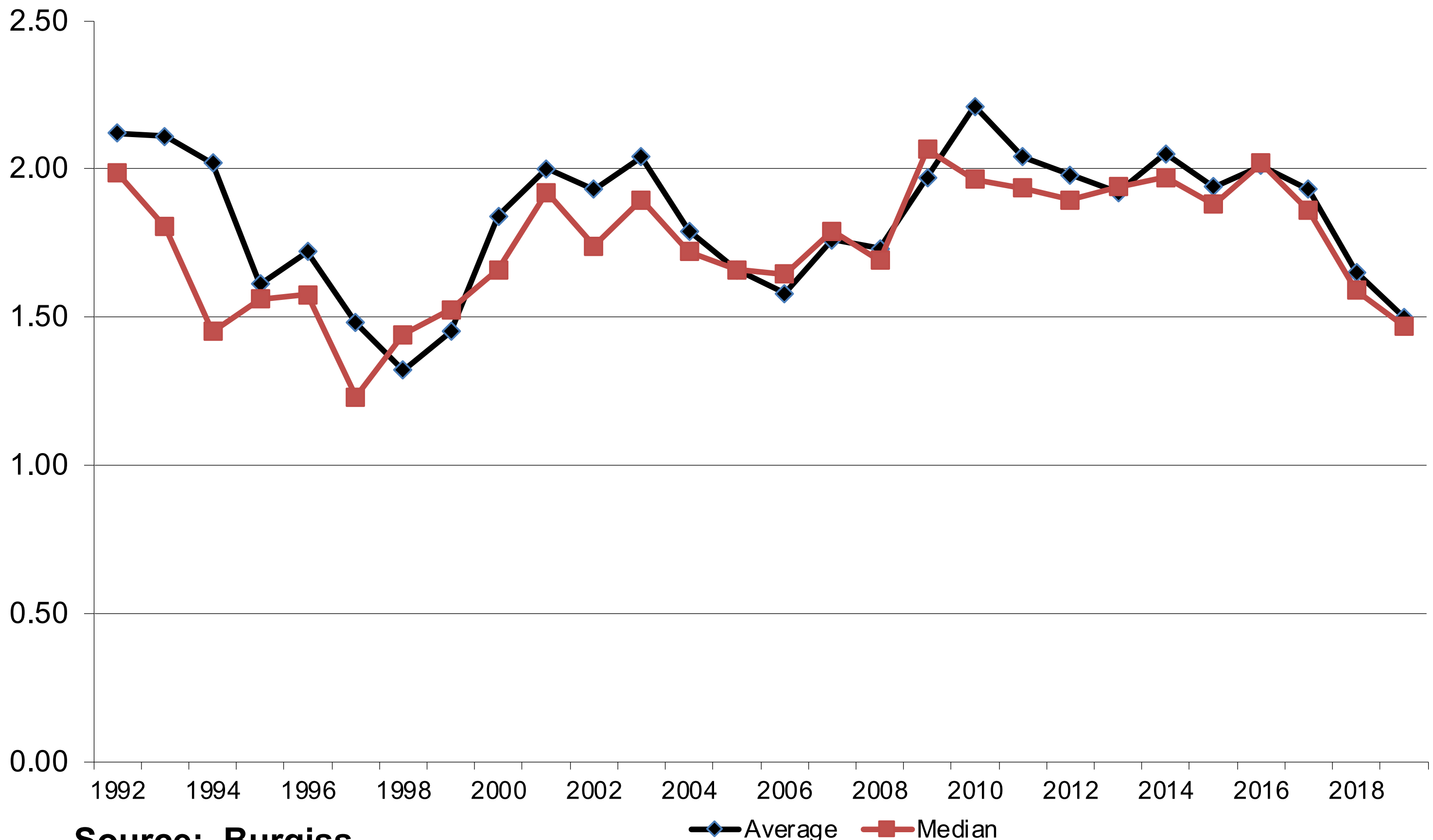
- **New Addepar results are similar to those for Burgiss.**
  – **Both buyout and VC.**

What have returns looked like?



Source: Burgiss

U.S. Buyout MOICs by Vintage Year, 1992 - 2019
Pooled Ave. and Median as of 2023 Q3



Source: Burgiss

What has performance been on average?

- Vintage year IRRs vary a lot.
- Vintage year Multiples of Invested Capital vary less.
  - Typically, between 1.5 and 2.0 since mid-1990s.
- Is that performance good or bad?
  - Compared to what?

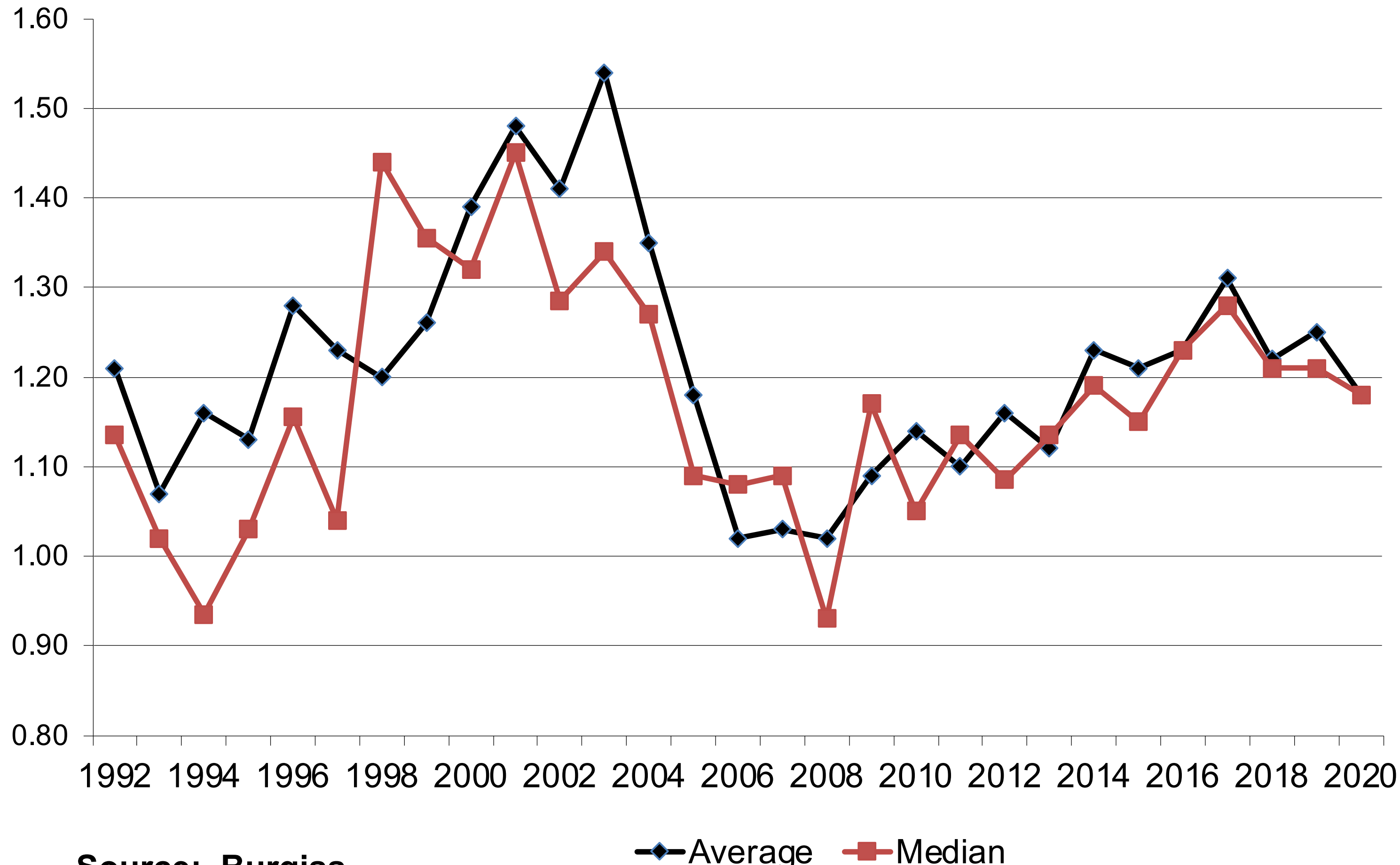
How is Performance Measured?

- 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.

Question?

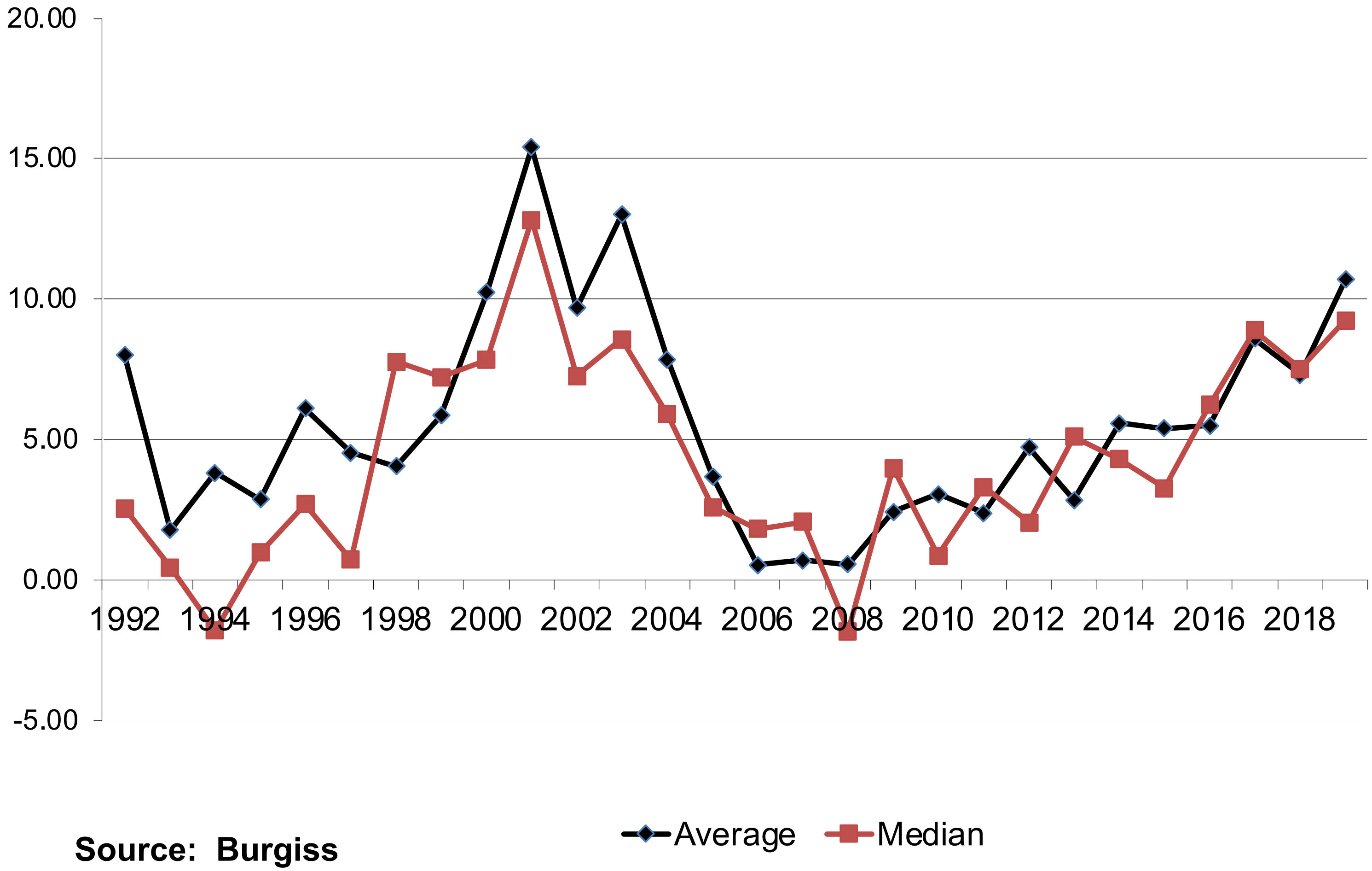
- How have Buyout funds of vintages 2009 to 2020 done vs. S&P 500 as of 2023Q3?
  - Better?
  - Equal?
  - Worse?

U.S. Buyout PMEs by Vintage Year, 1992 - 2020
Pooled Ave. and Median as of 2023 Q3



Source: Burgiss

U.S. Buyout Direct Alphas by Vintage Year, 1992 - 2019
Pooled Ave. and Median as of 2023 Q3



Source: Burgiss

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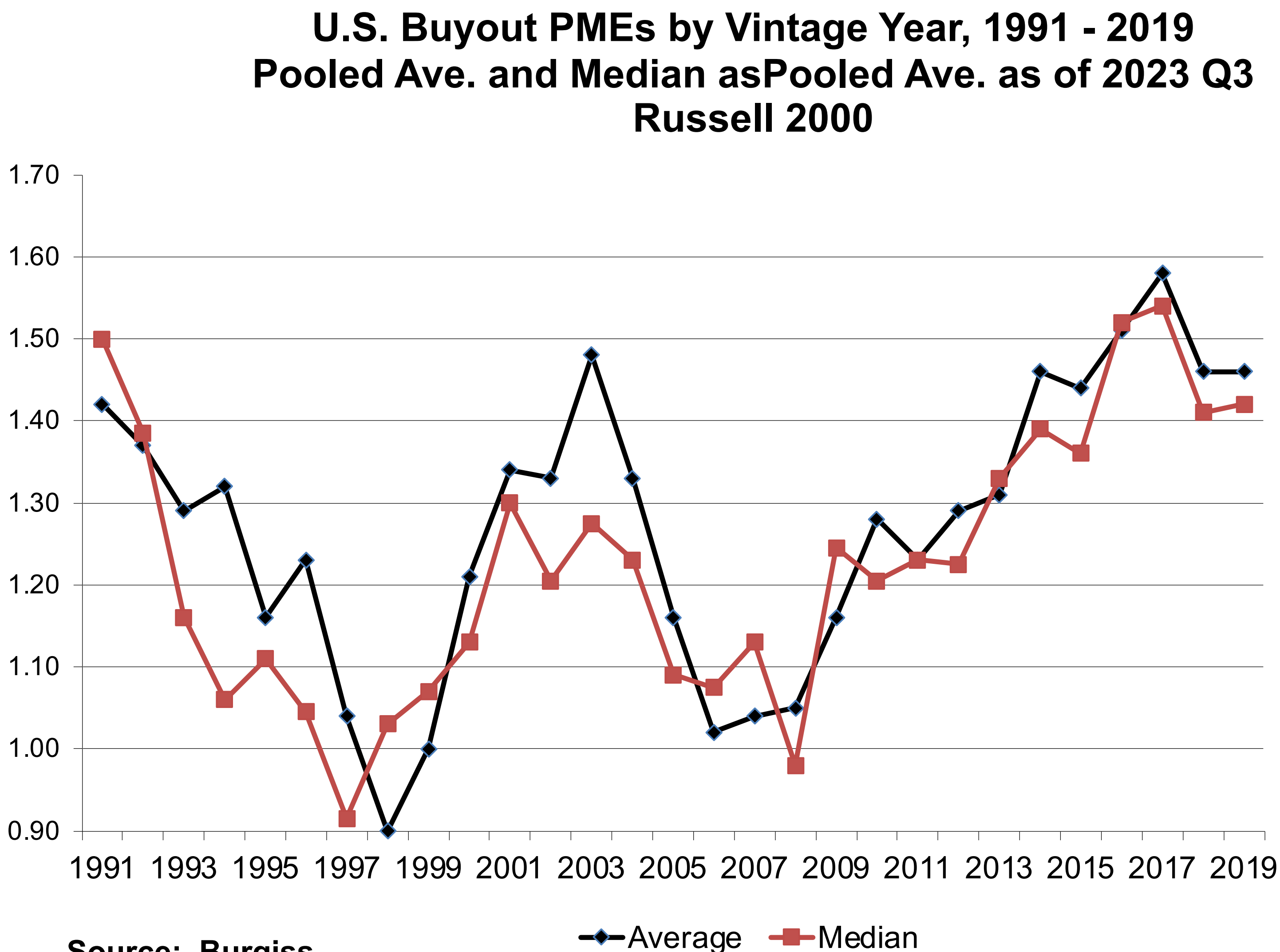
Even better relative to the Russell 2000.



Source: Burgiss

Is it appropriate to use PME for buyout funds?

- The performance does not appear to be explained by leverage / risk.
  - Betas measure how funds vary with overall stock market.
  - Korteweg and Nagel (2022) estimate buyout fund betas using cash flows and find them to be less than or equal to 1.0.
  - Brown et al. (2022), "The market beta of an average buyout fund is around 1.0."

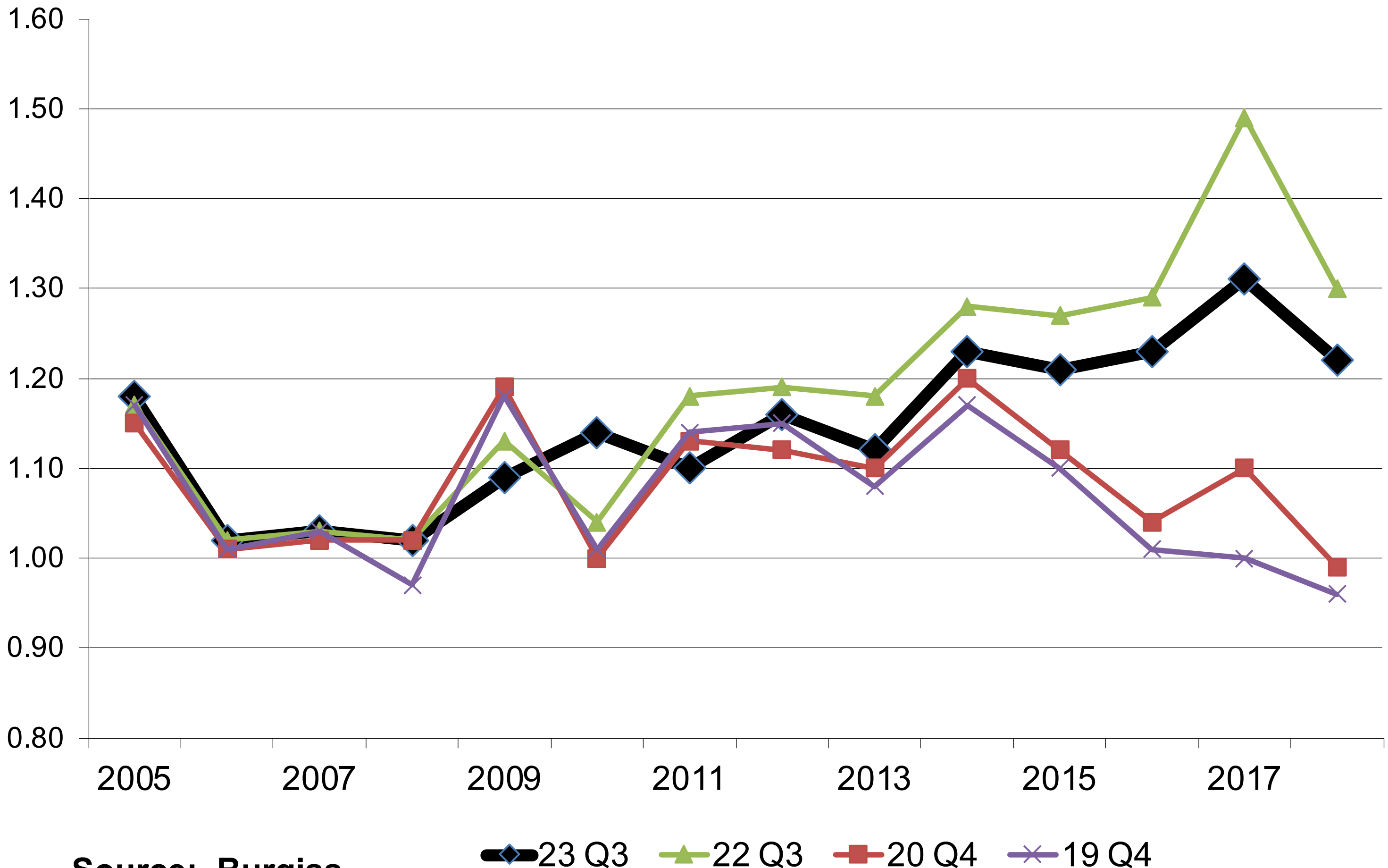
- PME is appropriate for:
  - » beta = 1.
  - » LP with log-utility preferences and return on the LP's total wealth equals the market return.
  - » LP with Epstein-Zin utility function with period utility function within the Epstein-Zin utility function being logarithmic.

Are the valuations accurate?

- Some concern that buyout fund valuations (NAVs) are overstated.

Are the valuations accurate?

U.S. Buyout PMEs (relative to S&P 500) by Vintage Year, 2005 - 2018
Pooled Average as of 2023 Q3 vs 2022Q3 vs 2020 Q4 vs 2019 Q4



Source: Burgiss

Are the valuations accurate?

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- Question: Are buyout fund NAVs still overstated?
  - Yes
  - No

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  - Yes
  - No

- PE Survey:
  - Own funds – 14%.
  - Other funds – 59%.
  - VC funds – 96%.

How Do I Reconcile All This With Phalippou (2020)?

FTfm Private equity + Add to myFT

Private equity barons grow rich on $230bn of performance fees

New analysis estimates performance of PE funds, net of fees, matches public equity markets

PE Fund Performance

FT Alphaville Private equity + Add to myFT

Is private equity actually worth it?

Alphaville examines the investment case for the Norwegian sovereign wealth fund adding the finance industry's hottest asset class to its mandate

Robin Wigglesworth MARCH 4 2024

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PE Fund Performance

- Reports based on Phalippou (2020) using data through 2019.
  – Claims PE GPs make a lot of money without outperforming public markets net of fees.

- Phalippou still maintains that is true.
  – Institutional Investor, January 2024.

- Let's see the problems / issues with his analysis.

Why does Phalippou (2020) differ?

- Problem 1:
  - Phalippou compares apples to oranges.
  - He looks at performance of all non-debt PE funds raised in North America from 2006 to 2015 as of the end of December 2019.. Includes:
    - » Natural Resources
    - » Real Estate
    - » Real Assets
    - » Infrastructure
  - **Pooled PME vs. S&P with true private equity (buyout, VC, growth):**
    - » **As of December 2019 = 1.07. (1.06 buyout).**
      - **Beats the S&P 500 as of December 2019.**
    - » **As of September 2023 = 1.10 or 2% per year. (1.07 buyout).**

Why does Phalippou (2020) differ?

- Problem 1:
  - Phalippou compares apples to oranges.
  - He looks at all non-debt PE funds in North America. Includes:
    - Real Assets, Natural Resources, Infrastructure, Real Estate.
    - S&P 500 is wrong benchmark.
  - Pooled PME of Real Assets et al. = 0.82.
    - Multiple for Vanguard Energy ETF is 50% of multiple for S&P 500.
      - Using appropriate PME would raise PME above 1 here too?
  - **Phalippou (2012): PE should be evaluated with right benchmark.**
    - **Phalippou (2012) contradicts Phalippou (2020)!**

or

Why does Phalippou (2020) differ?

- Problem 1:
  - Phalippou compares apples to oranges.
  - Gourier, Phalippou and Westerfiled (JF forthcoming).
    - » Investors are **under-allocated** to private market funds and are willing to pay a larger premium to adjust the quantity committed than to eliminate other frictions
    - » **Estimate PE alpha of 3.5% per year for vintages 1991 to 2015.**
      - Venture capital, growth equity, leveraged buyouts.
  - **Gourier et al. (forthcoming) contradicts Phalippou (2020)!**

or

Why does Phalippou (2020) differ?

- Problem 2: Cherry picking time-period.
  - » Phalippou uses the least attractive time-period for PE of all possible time-periods! 2006 – 2015.
    - PE performance in 2006 to 2008 vintages is the worst.
    - Start earlier or start later and performance improves!
    - 2006 to 2015 is not a natural choice.
      - – 2000 to 2015 or 2009 to 2015 are more natural.
  - » Using the S&P 500 for private equity, **not** including real assets et al., the pooled average PME as of Dec 2019 is:
    - **1.05 for 2006 to 2015 vintages. (1.10 - 2023Q3.)**
    - **1.10 for 2000 to 2015 vintages. Post-2000. (1.14).**
    - **1.11 for 2009 to 2015 vintages. Post-GFC. (1.22).**
    - **1.11 for 2000 to 2019 vintages. Post-2000. (1.16).**

Why does Phalippou (2020) differ?

- Problem 2: Cherry picking time period.
  - » Phalippou uses least attractive time period for PE.
  - » Using the S&P 500 for private equity, including real assets et al., the pooled average PME is:
    - 0.99 for 2006 to 2015 vintages.
      - – **1.02** as of 2023Q3.
    - **1.05 for 2000 to 2015 vintages.**
      - – **1.07** as of 2023Q3.
    - **1.04 for 2009 to 2015 vintages.**
      - – **1.09** as of 2023Q3

Why does Phalippou (2020) differ?

- Problem 2: Cherry picking time period.
  - » Phalippou uses least attractive time period for PE.
  - » Using the S&P 500 for buyout only, the pooled average PME as of 2023Q3 is:
    - 1.11 for 2006 to 2019 vintages.
    - **1.18 for 2000 to 2019 vintages.**
    - **1.20 for 2009 to 2019 vintages.**

Why does Phalippou (2020) differ?

- Problem 3:
  - He uses the S&P 500 for PE, when Russell 2000 is more appropriate?
    - » If we use a more appropriate index for Buyout, VC and Growth like the Russell 2000:
      - Pooled average PME = 1.11 (not 1.05) as of Dec 2019.
        - 1.20 as of 2023Q3.
        - Buyout only: 1.14
    - » If we include real assets, natural resources, etc., [which we should not] and use the Russell 2000:
      - The pooled average PME = 1.03 (not 0.99) as of Dec 2019.
        - 1.10 as of 2023Q3.

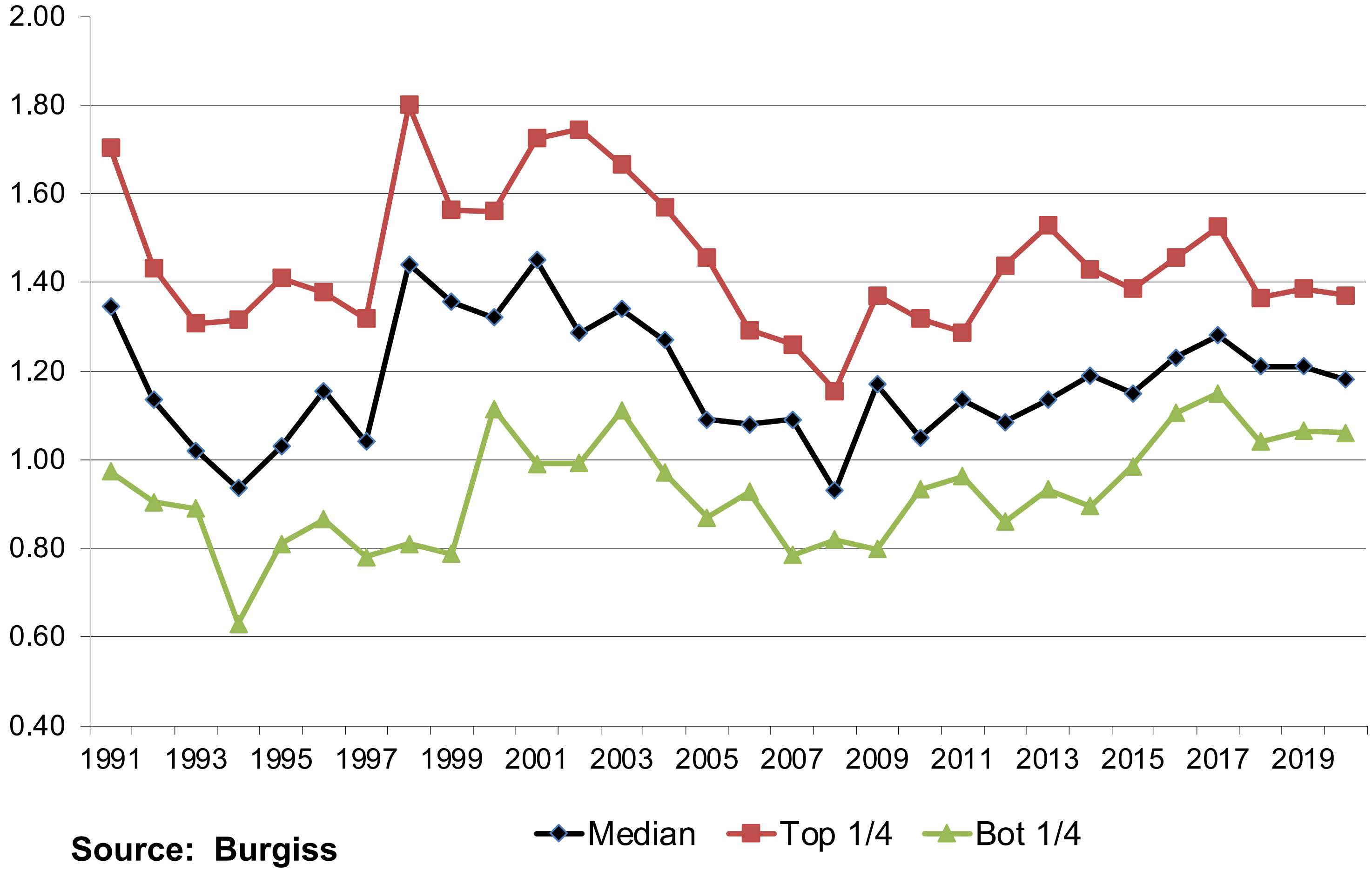
Conclusion / Bottom Line

- **Phalippou (2020) is confused and / or misleading.**
  - Inappropriate comparisons -- does not compare apples-to-apples.
  - Uses unfavorable / inappropriate benchmark indices.
  - Uses least favorable and unnatural time-period.
  - Contradicts other work by Phalippou.

Persistence in Performance:

- Are there good GPs?
- Do the good GPs repeat?
- Evidence from Harris, Jenkinson, Kaplan and Stucke (2022).
  - Burgiss data as of December 2020.

U.S. LBO PMEs by Vintage Year, 1991 - 2020
Top 1/4, Median and Bottom 1/4 as of 2023 Q3



Source: Burgiss

Persistence in Performance:

- Top quartile performance is strong.

	Average IRR	Average MOIC	Average PME	N
	Whole sample			
Quartile 1	30.2%	2.77	1.78	220
Quartile 2	17.6%	1.98	1.28	240
Quartile 3	10.3%	1.52	1.01	243
Quartile 4	-1.0%	1.01	0.66	226
	Pre-2001 Funds			
Quartile 1	31.7%	3.04	2.04	63
Quartile 2	17.3%	2.20	1.40	76
Quartile 3	8.0%	1.47	1.01	78
Quartile 4	-5.2%	0.88	0.61	67
	Post-2000 Funds			
Quartile 1	29.6%	2.66	1.70	157
Quartile 2	17.7%	1.88	1.24	164
Quartile 3	11.4%	1.55	1.04	165
Quartile 4	0.8%	1.07	0.71	159

Persistence

- But, can you predict who will be in the top quartile?

Persistence in Performance:

- Are there good GPs?
  - Large differences between top and bottom quartile funds.
- Do the good GPs repeat?
  - Can analyze data from Burgiss.

Persistence in Performance: Are there good GPs at time of fundraising? Post-2000 U.S. Buyout Funds

		Current Fund Quartile 1	2	3	4	N	Average Current Fund IRR	Average Current Fund MOIC	Average Current Fund PME
Previous Fund Quartile at Fundraise	1	24.0%	26.4%	25.6%	24.0%		15.8	1.82	1.17
		30	33	32	30	125			
	2	26.2%	20.6%	34.1%	19.0%		15.7	1.83	1.16
		33	26	43	24	126			
	3	22.6%	25.8%	30.1%	21.5%		15.3	1.77	1.13
		21	24	28	20	93			
	4	23.1%	41.0%	15.4%	20.5%		15.1	1.91	1.18
		9	16	6	8	39			
NA, but not first fund		19.3%	28.6%	19.3%	32.9%		12.5	1.68	1.08
		27	40	27	46	140			
First funds		30.3%	20.5%	23.8%	25.4%		15.1	1.79	1.20
		37	25	29	31	122			

Persistence in Performance: 2nd Previous Fund at time of Fundraising? Post-2000 U.S. Buyout Funds

Second Previous Fund Quartile at Fundrasing	Current Fund Quartile 1	2	3	4	N	Average Current Fund IRR	Average Current Fund MOIC	Average Current Fund PME
1	21.6% 19	28.4% 25	25.0% 22	25.0% 22	88	14.8	1.84	1.14
2	23.3% 17	24.7% 18	30.1% 22	21.9% 16	73	15.5	1.79	1.15
3	28.0% 14	34.0% 17	26.0% 13	12.0% 6	50	17.9	1.91	1.20
4	12.0% 3	32.0% 8	36.0% 9	20.0% 5	25	15.5	1.73	1.12

Persistence in Performance: Are there good GPs at end of fund? Post-2000 U.S. Buyout Funds

		Current Fund Quartile 1	2	3	4	N	Average Current Fund IRR	Average Current Fund MOIC	Average Current Fund PME
Previous Fund Quartile at Fund End	1	33.6%	25.0%	25.9%	15.5%		17.9	2.04	1.27
		39	29	30	18	116			
	2	22.1%	21.2%	36.3%	20.4%		15.8	1.82	1.16
		25	24	41	23	113			
	3	22.1%	34.7%	25.3%	17.9%		16.0	1.75	1.13
		21	33	24	17	95			
	4	13.6%	22.0%	23.7%	40.7%		9.8	1.50	0.96
		8	13	14	24	59			
NA, but not first fund		24.8%	24.8%	21.8%	28.6%		12.5	1.68	1.08
		33	33	29	38	133			
First funds		31.0%	19.5%	22.1%	27.4%		15.1	1.79	1.20
		35	22	25	31	113			

Persistence in Performance:

- Are there good GPs? Do the good GPs repeat?
  - Persistence in sample overall.
    - » But much harder to know at time of fundraising.
  - First time funds perform at top quartile.
  - No persistence with second previous fund.

Summary at the Fund Level

- Buyout fund performance has been remarkably good.
  - Every vintage year since 1992 has performed at least as well as 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.
  - Fund betas do not appear to be different from 1.

- Not a lot of usable persistence.

Summary at the Fund Level

- **Caveat: Does not include VC, Real Estate or Infrastructure funds.**

Why Has PE Grown So Much?

- First, as shown in the previous slides, performance has been strong.
  - The average fund in every vintage year since 1992 has performed at least as well as the S&P 500.

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

Why Has PE Grown So Much?

- Third, regulation.
  - SOX compliance, SEC comment letters, shareholder proposals, compensation disclosures, now climate, etc.
    - » See Bennett, Stulz, Wang (2023), Ewens and Farre-Mensa (2021).
  - Can spend more time on value creation, less on compliance.

- Fourth, 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).

Why Has Private Debt Grown So Much?

- Regulation.
  - Post-GFC, regulators discourage banks from lending to LBOs and riskier companies.
    - » Erel and Inozemtsev (2024)

- Timing.
  - CLOs have to warehouse loans before launching.
    - » Pipeline risk. Bruche et al. (2020)
  - Creates risks for banks – Citrix and Twitter.

- Less leverage.
  - Private credit funds leveraged at 50% debt.
  - Compare to banks and CLOs at 85% to 90% debt.

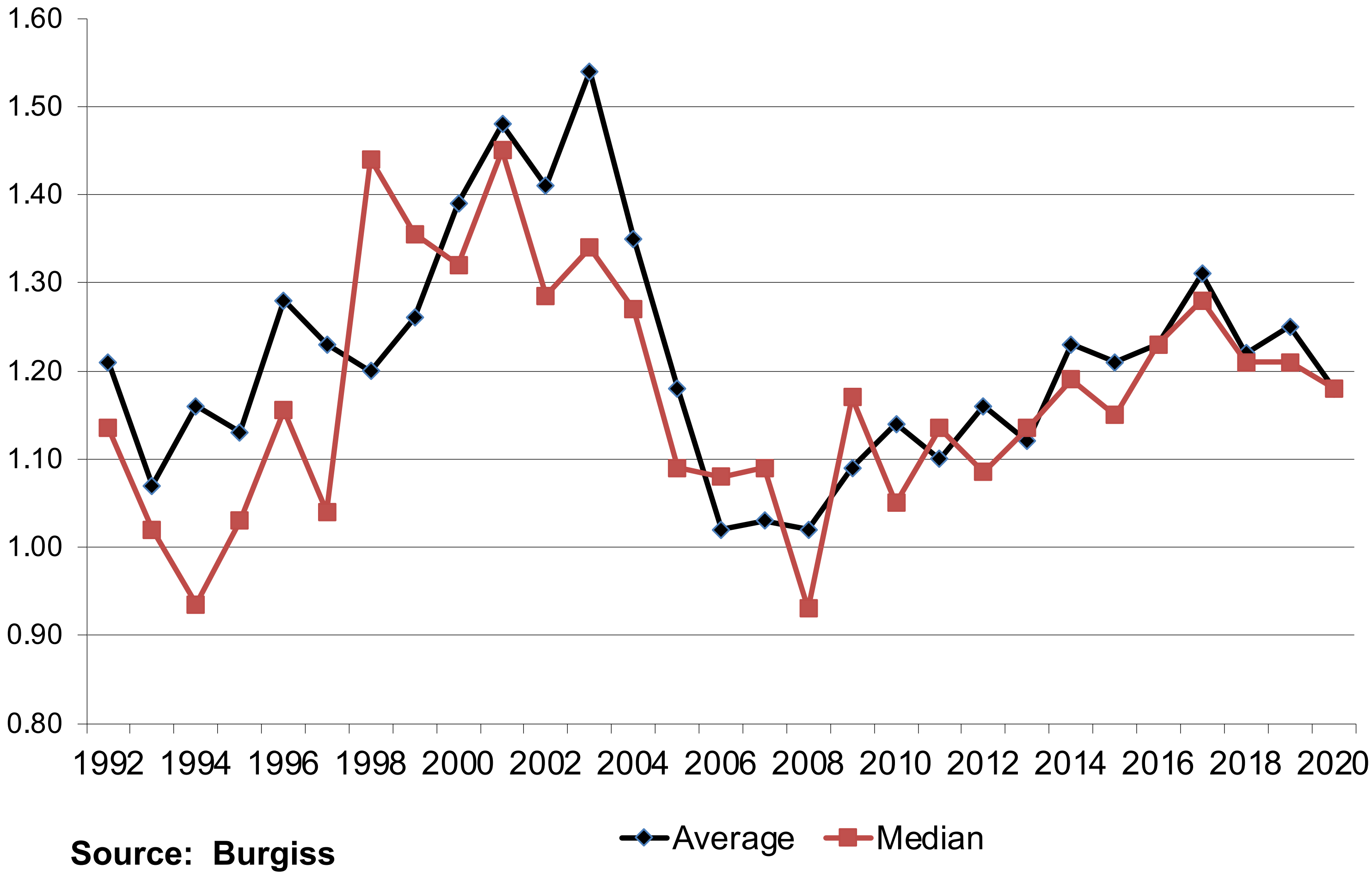
The Future?

- What will happen to PE (Buyout) returns?
  - Will PE Outperform?
- What will happen to PE assets?
- Who will win?

What will happen to PE (buyout) returns?

- Existing deals / vintages.
  - Will give up some of the performance advantage vs. S&P 500.
    - » Interest expenses up.
    - » S&P 500 a tough benchmark post-2023Q3.
    - » Better vs. Russell 2000.
  - Will 2020 and 2021 vintages outperform S&P 500?
    - » Vintage year performance tends to be mediocre pre-shock (2006 to 2008).

U.S. Buyout PMEs by Vintage Year, 1992 - 2020
Pooled Ave. and Median as of 2023 Q3



Source: Burgiss

What will happen to PE returns?

- New deals / vintages.
  - At some point, competition should drive away excess returns?
  - Vintage year performance tends to be mediocre pre-shock (2006 to 2008) not post-shock.
  - PE firms still looking for 2.5 X / 20%+ IRR.
    - » Risk / return is still attractive?

What will happen to PE assets?

- 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. (For now).
    - » 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.

- Private debt has tailwinds.
  - Regulators do not want leveraged loans in banks.
  - CLOs have timing problem at outset.

What will happen to PE assets?

- Several reasons to be concerned.
  - Buyout / Private Capital fundraising has been substantial.
  - Buyout multiples still high.
  - Interest rates high.
    - And restrictions on tax deductibility of interest expense.
  - Relentless negativity from press / authors.

What will happen to PE assets?

- Several reasons to be concerned.
  - Buyout fundraising has been substantial.
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  - Interest rates high.
    - » And restrictions on tax deductibility of interest expense.
  - Relentless negativity from press / authors.
  - Regulatory risk.
    - » What else will SEC do?
    - » FCA hostile.
    - » FTC / DOJ hostile to all acquisitions?
    - » Particularly if 2024 election goes one way.

Who Will Win?

- Still have to do at least as well as public markets.

- Regulations are painful for all, but benefit incumbents / large players.
  - Better able to bear higher fixed costs.
  - More consolidation?
  - Fewer new firms?

- Good for family offices.

Summary

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

- At the fund level:
  - PE (buyout) 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.
- Going forward, same factors still in play.
- Higher fixed costs benefit larger, existing players.
- Regulatory risk is large looming risk.

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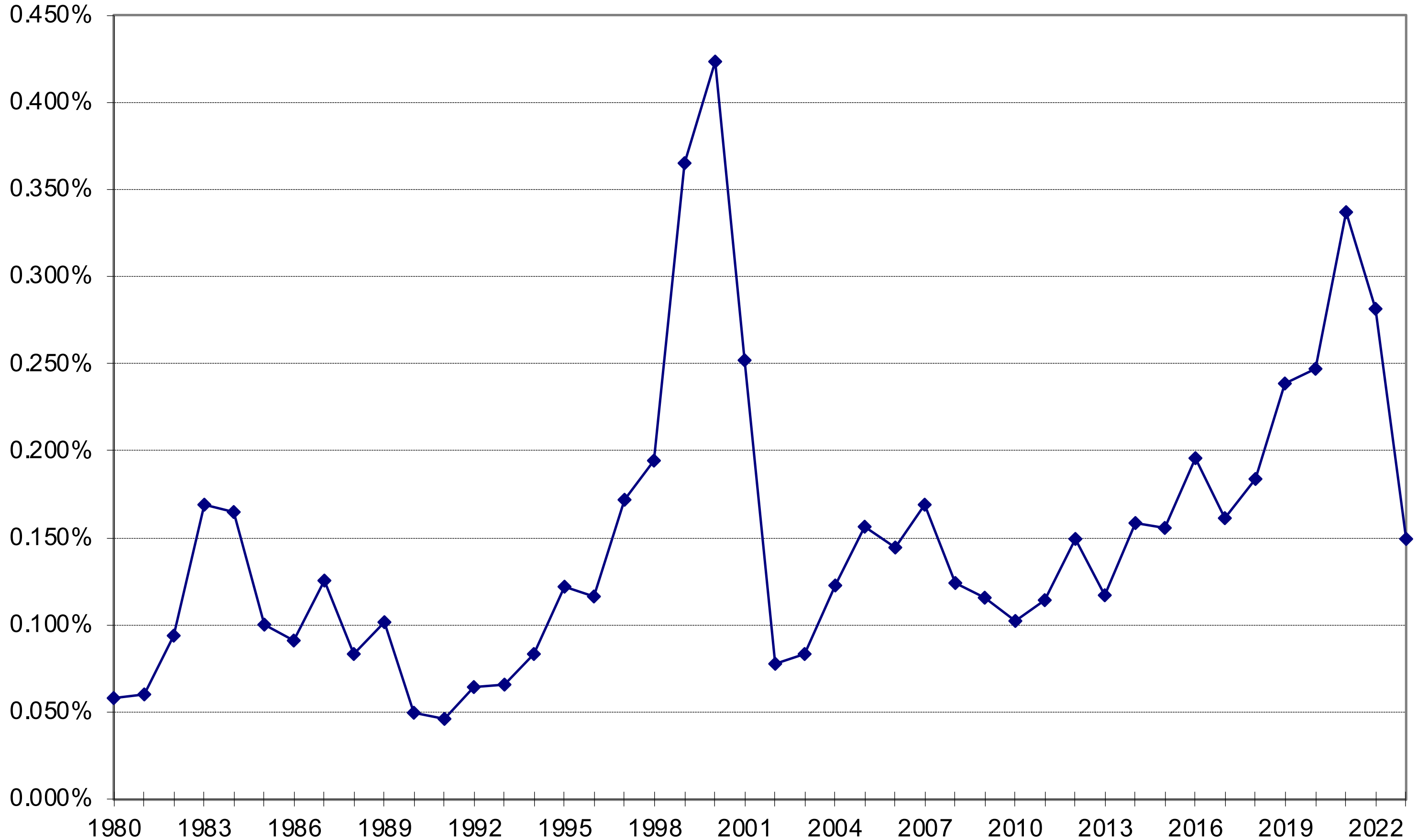
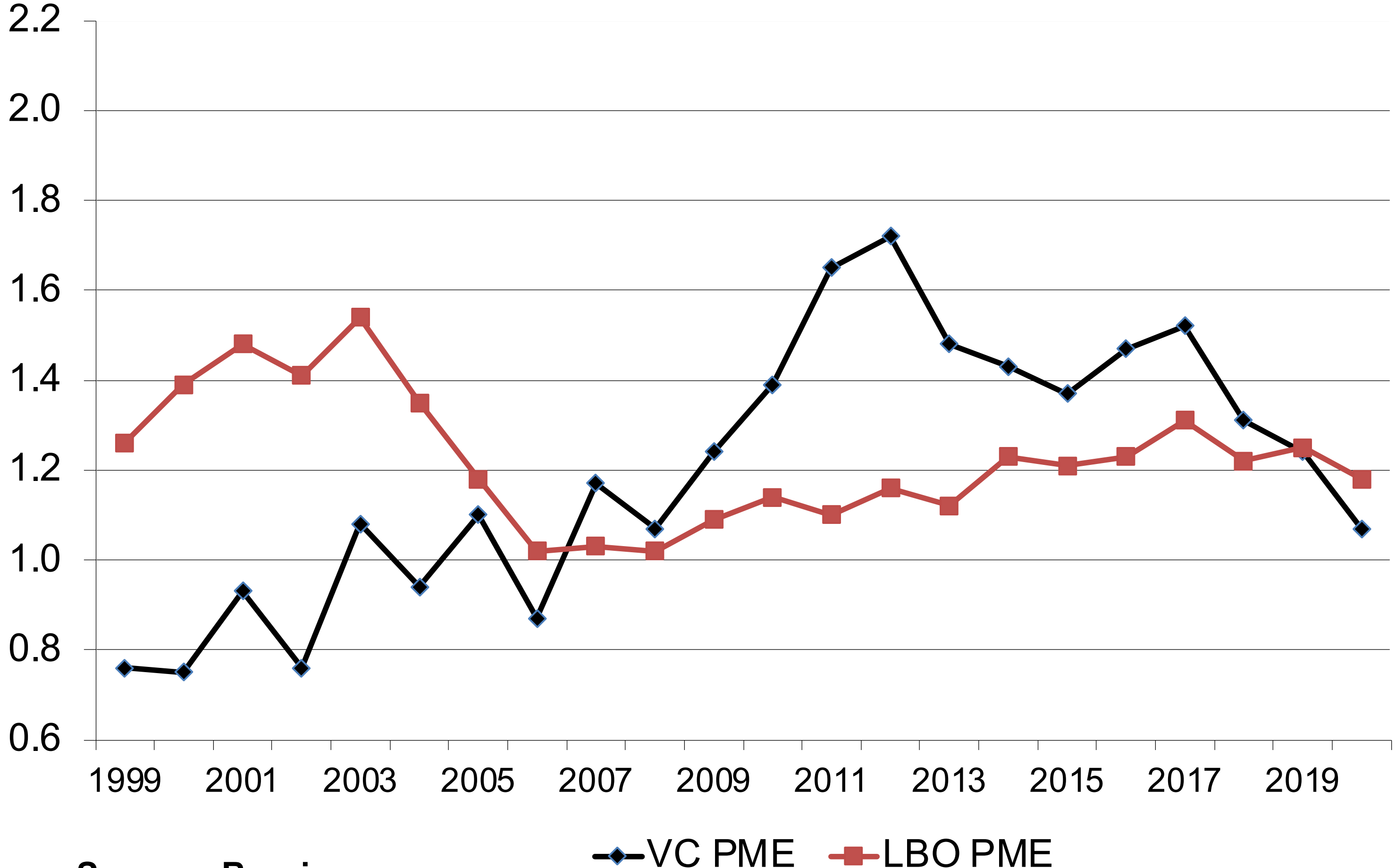
Commitments to U.S. VC Partnerships as Fraction of Total Stock Market Capitalization 1980 - 2023



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

U.S. VC and LBO PMEs by Vintage Year, 1999 - 2020
Pooled Ave. as of 2023 Q3



Source: Burgiss