Private Equity for Pension Plans? Evaluating PE Performance from an Investor's Perspective

Korteweg, Panageas, Systla

Discussion by Xinxin Wang
UCLA Anderson

Citrus 2023

Motivation

- Difficult to evaluate performance of illiquid assets like PE
- Performance measures like IRR or MOIC have limitations

Motivation

- Difficult to evaluate performance of illiquid assets like PE
- Performance measures like IRR or MOIC have limitations
- SDF approach to performance evaluation (Kaplan and Schoar (2005), Korteweg and Nagel (2016), Gredil, Sorensen, Waller (2019))

Motivation

Table 10: Benchmark for LPs
The most important benchmark for the limited partners (LPs) investing in the private equity investors. Net indicates net of all fees.

		AUM		IRR		Age			Offices	
	Mean	Low	High	Low	High	Old	Young		Local	Global
Net IRR	25.4	29.0	21.9	27.3	21.7	26.7	24.2		22.2	29.6
Net IRR vs. S&P	7.9	6.5	9.4	9.1	4.3	10.0	6.1		8.3	7.4
Net IRR with respect to fund vintage year	27.0	19.4	34.4	27.3	43.5	40.0	15.2	**	33.3	18.5
Net Multiple / Cash-on-Cash	38.1	45.2	31.3	31.8	30.4	20.0	54.5	***	33.3	44.4
IRR of other GPs	1.6	0.0	3.1	4.5	0.0	3.3	0.0		2.8	0.0
Number of responses	63	31	32	22	23	30	33		36	27

Gompers, Kaplan, Mukharlyamov (2016)

- Fewer than 8% of LPs view performance relative to public markets as the most important benchmark

This paper - IPE

- Key idea: use an investor's own portfolio return to form the SDF
  - Investor Portfolio Equivalent (IPE)
  - Depend on different risk tolerance - reflected in an investor's optimal mix of stocks and bonds
  - If IPE > 0, an investor can raise the growth rate of her investment portfolio by allocating toward PE

This paper - IPE

- Key idea: use an investor's own portfolio return to form the SDF
  - Investor Portfolio Equivalent (IPE)
  - Depend on different risk tolerance - reflected in an investor's optimal mix of stocks and bonds
  - If IPE > 0, an investor can raise the growth rate of her investment portfolio by allocating toward PE
- Problem: IPE can be positive even if fund returns can be replicated by publicly traded investments

This paper - GIPE

- GIPE allows for different investor risk aversions
  - Results in different leverage choices across the investors
- If GIPE > 0, allocate toward PE, even after accounting for differences in leverage

This paper - Pensions

- Focus on pension plans
- Compute the IPE and GIPE from the perspective of pension plans
- Sample period 1995-2018

Findings

- Average IPE is positive, GIPE is 0 for PE funds
  - Difference in results suggest higher exposure of PE to market fluctuations
  - GIPE - GIPE(mkt-repli) is statistically insignificant
    - Pension plans are not better off investing more in private equity vs. public equity
    - Buyout being the only exception
- Similar results at the pension plan level
  - GIPE is close to 0, but better than the benchmark of investing in all PE funds in a vintage year

Findings

- Explore what pension plan characteristics explain the differences in PE performance
  - Plans experience better performance in PE funds that they actually invest in
  - Driven by access and not selection skill
  - Decompose IRR into alpha and risk compensation
    - Underfunded pension plans, plans with political influence take more risk and earn lower risk-adjusted returns in PE
    - Suggests agency problems

Comments

- What do LPs say?
- Methodology - Are allocations (up to PE) optimal?
- GIPE vs. GPME
- Access or skill?

What do LPs say?

Table 10: Benchmark for LPs
The most important benchmark for the limited partners (LPs) investing in the private equity investors. Net indicates net of all fees.

		AUM		IRR		Age			Offices	
	Mean	Low	High	Low	High	Old	Young		Local	Global
Net IRR	25.4	29.0	21.9	27.3	21.7	26.7	24.2		22.2	29.6
Net IRR vs. S&P	7.9	6.5	9.4	9.1	4.3	10.0	6.1		8.3	7.4
Net IRR with respect to fund vintage year	27.0	19.4	34.4	27.3	43.5	40.0	15.2	**	33.3	18.5
Net Multiple / Cash-on-Cash	38.1	45.2	31.3	31.8	30.4	20.0	54.5	***	33.3	44.4
IRR of other GPs	1.6	0.0	3.1	4.5	0.0	3.3	0.0		2.8	0.0
Number of responses	63	31	32	22	23	30	33		36	27

Gompers, Kaplan, Mukharlyamov (2016)

- 2/3 of PE investors report absolute measure of performance is most important (net IRR and net MOIC)

Methodology

- G(IPE) uses the cumulative return on the investor's portfolio to discount PE cash flows

Methodology

- G(IPE) uses the cumulative return on the investor's portfolio to discount PE cash flows
- Depends on the investor's remaining portfolio (stocks, bonds, other alternatives)
- How much depends on the optimality of this allocation?
- If it's an open question whether the allocation to PE is optimal, why do we believe the remaining portfolio is optimal?

GIPE vs. GPME

Panel B: GIPE-type metrics.								
GIPE	-0.036	0.032	0.106	0.037***	-0.14	0.063**	-0.113	0.075
GPME	-0.111	0.135	0.185	0.213	-0.283	0.110***	-0.365	0.148**
GIPE(mkt-repl.)	-0.049	0.021**	-0.046	0.024**	-0.055	0.022**	-0.045	0.021**
GIPE(value-repl.)	0.068	0.058	0.068	0.054	0.112	0.083	-0.022	0.024
GIPE(growth-repl.)	-0.242	0.041***	-0.219	0.041***	-0.265	0.040***	-0.241	0.051***
α(GIPE)	-0.017	0.010*	0.017	0.010	-0.049	0.015***	-0.025	0.016
GIPE - GPME	0.075	0.128	-0.079	0.187	0.143	0.104	0.252	0.085***
GIPE - GIPE (mkt-repl.)	0.014	0.027	0.152	0.034***	-0.085	0.067	-0.067	0.071
GIPE - GIPE(value-repl.)	-0.103	0.064	0.037	0.047	-0.251	0.129*	-0.09	0.070
GIPE - GIPE(growth-repl.)	0.206	0.024***	0.325	0.047***	0.125	0.057**	0.128	0.030***
IRR - α(GIPE)	0.128	0.012***	0.124	0.013***	0.122	0.016***	0.150	0.012***
N	157,025		63,182		62,758		31,085	

Table 2

- No difference between the GIPE and GPME
- Pension portfolio of risky assets is not very different from CRSP-value weighted
- Help to highlight the improvements

Pension Performance

	All funds		Buyout		VC		Real estate	
	Mean	s.e.	Mean	s.e.	Mean	s.e.	Mean	s.e.
Panel A: IPE-type metrics.								
IPE	0.144	0.035***	0.230	0.028***	0.108	0.082	0.065	0.052
IPE(inv. EW)	0.193	0.034***	0.261	0.028***	0.151	0.101	0.081	0.045*
IPE(inv. VW)	0.199	0.029***	0.228	0.027***	0.118	0.078	0.070	0.030**
IPE(inv. EW) - IPE	0.049	0.018***	0.030	0.016*	0.043	0.042	0.016	0.023
IPE(inv. VW) - IPE	0.055	0.022**	-0.002	0.013	0.010	0.046	0.005	0.032
IPE(inv. VW) - IPE(inv. EW)	0.006	0.009	-0.032	0.007***	-0.033	0.032	-0.011	0.016
Panel B: GIPE-type metrics.								
GIPE	-0.013	0.027	0.123	0.037***	-0.084	0.057	-0.113	0.069
GIPE(inv. EW)	0.031	0.024	0.155	0.041***	-0.081	0.062	-0.080	0.055
GIPE(inv. VW)	0.047	0.026*	0.135	0.037***	-0.037	0.043	-0.034	0.032
GIPE(inv. EW) - GIPE	0.044	0.018**	0.032	0.015**	0.003	0.030	0.033	0.032
GIPE(inv. VW) - GIPE	0.060	0.024**	0.012	0.015	0.047	0.039	0.078	0.051
GIPE(inv. VW) - GIPE(inv. EW)	0.016	0.008**	-0.020	0.007***	0.044	0.027	0.046	0.029

- Plan-level performance is compared to a "benchmark" GIPE, defined as the equal-weighted average of all private equity funds in a given vintage, irrespective of whether the pension plan invested or not

Pension Performance

Table IV—*Continued*

Panel B: Consequences of Reinvestment Decisions by Class of LP

		Mean Current Fund IRR (%)	Mean Current Fund Excess IRR (%)	Mean Next Fund IRR (%)	Mean Next Fund Excess IRR (%)	Mean Current Fund size (MM$)	Mean Change in Size, Current to Next Fund (%)
Public pension funds	Reinvested	+31.1%	+15.9%	+11.0%	+12.9%	772.2	+115.3%
	Did not reinvest	+20.3%	+8.5%	0.4%	+6.4%	821.4	+80.6%
	t-test	0.014**	0.069**	0.006***	0.043**	0.476	0.000**
Corporate pension funds	Reinvested	22.0	9.8	2.1	6.3	685.5	102.0
	Did not reinvest	13.5	1.5	4.5	7.8	806.7	90.2
	t-test	0.119	0.076*	0.661	0.727	0.294	0.259
Endowments	Reinvested	50.5	30.9	43.7	38.9	310.1	92.7
	Did not reinvest	54.7	40.9	17.1	22.4	519.7	97.2
	t-test	0.601	0.179	0.002***	0.033**	0.000***	0.527
Advisors	Reinvested	41.1	27.6	1.0	11.8	526.5	111.6
	Did not reinvest	24.7	17.7	2.0	11.3	855.4	101.1
	t-test	0.038**	0.171	0.877	0.926	0.000***	0.462
Insurance companies	Reinvested	35.7	18.2	10.3	14.3	329.4	103.9
	Did not reinvest	16.8	6.7	−5.2	3.5	450.4	94.9
	t-test	0.078*	0.237	0.093*	0.140	0.135	0.424
Banks and finance companies	Reinvested	8.1	1.6	−4.3	0.6	555.8	113.9
	Did not reinvest	5.2	−1.0	−10.2	−1.4	654.1	108.0
	t-test	0.563	0.567	0.126	0.537	0.465	0.698
Other investors	Reinvested	39.3	24.7	14.0	20.5	195.3	96.8
	Did not reinvest	6.1	−3.9	−11.7	1.6	467.1	192.3
	t-test	0.005***	0.033**	0.046**	0.068*	0.078*	0.183
Overall	Reinvested	35.7	20.3	14.8	17.3	561.8	107.1
	Did not reinvest	26.8	15.9	3.7	10.2	702.2	96.5
	t-test	0.003***	0.104	0.000***	0.004***	0.000***	0.023**

Lerner (2007)

- The right comparison portfolio is one that pension had access to but chose not to invest in (Lerner (2007))
- Show GIPE(inv. EW) - GIPE metrics for reinvested and not reinvested rather than naive benchmark

Pension Performance

- Paper tackles this in a regression framework using plan-fund observations
  - But the results are flipped?
  - Performance is worse for reinvestment
  - Suggesting that higher performance from committed funds is driven by access not skill
- Is the difference just sample difference?
- Or changes in fund persistence? Another way to contribute to the literature

Conclusion

- Great paper with intuitive methodology
- LPs measure performance using absolute returns
- LP portfolio allocations may not be optimal
- Make explicit (G)IPE improvements over existing PME measures
- Reconciling with the existing literature