MEKETA
INVESTMENT GROUP

5796 Armada Drive
Suite 110
Carlsbad, CA 92008

760.795.3450
Meketa.com

MEMORANDUM

TO: Members of the Investment Committee, CalSTRS
FROM: Meketa Investment Group
DATE: March 2, 2023
RE: Semi-Annual Private Equity Performance Review as of September 30, 2022 – OPEN SESSION

In our role as the Board Private Equity Consultant, Meketa Investment Group ("Meketa") conducted a semi-annual performance review of the Private Equity Portfolio ("the Portfolio") for the period ended September 30, 2022, based on data provided by State Street and selected reports from staff. This memorandum provides the Portfolio performance data and information on key policy parameters, along with observations on staff activities during the time period.

Performance

Private Equity started to depreciate over the trailing six months ended September 30, 2022, with both the CalSTRS' Portfolio and the Benchmarks generating negative returns for the trailing 1-year period. Performance of the Portfolio and the Benchmarks across longer time periods has also decreased on an absolute basis in the recent period. The Program's performance exceeds the Custom State Street Index Benchmark for the 3-, 5-, and 10-year time periods and the Custom Benchmark for each time horizon below.

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
CalSTRS PE Program	**-1.7**	**19.2**	**16.2**	**14.3**	**13.5**
Custom State Street Index[1]	*-0.2*	*18.2*	*15.4*	*13.7*	*13.6*
Custom Benchmark[2]	*-20.3*	*4.7*	*5.5*	*9.6*	*NA*
Excess vs. Custom State Street Index[3]	↓ 1.5	↑ 1.1	↑ 0.9	↑ 0.6	↓ 0.1
Excess vs. Custom Benchmark[3]	↑ 18.7	↑ 14.6	↑ 10.8	↑ 4.7	NA

[1] Reflects the customized PE Index methodology discussed in the updated Private Equity Investment Policy. Utilized to assess Program performance for periods less than 10 years. Calculated by State Street.
[2] Custom Benchmark as of July 2019 is MSCI ACWI IMI plus 1.5%. Calculated by State Street. Utilized to assess Program performance for periods of 10 years or more. The Custom Benchmark is customized for certain investment restrictions such as tobacco.
[3] Arrows indicate program outperformance or underperformance against the respective benchmark.

Given the long-term nature of the Private Equity Program, we believe the 1-year performance figures are not meaningful but note slight underperformance relative to the Custom State Street Index Benchmark. As previously highlighted, private equity performance is reported with a significant delay compared to publicly traded assets.

In recent years, the Private Equity Program performance steadily improved against both Benchmarks, with the "positive spread" generally increasing over time. The spread relative to the Custom State Street Index has slightly narrowed since the last semi-annual report while the spread relative to the longer-term Custom Benchmark continued to increase. There remains relatively little capital remaining in vintages prior to 2014, while performance of the more recent vintages (with the exception of 2022) have been strong and are driving current performance.

The Portfolio's NAV as of September 30, 2022, was $45.6 billion, a decrease of $2.8 billion (net of cash flows), compared to the March 31, 2022, NAV of $47.0 billion. Overall, the Portfolio had lost $0.8 billion of value in the year since September 30, 2021. The current NAV represents 15.8% of the Total Fund, compared to the long-term target of 13%.

Strategy[1,2]

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Buyouts	-1.4	20.2	17.0	15.0	13.0
SSGX – Custom Buyouts[3]	*1.6*	*18.3*	*15.4*	*13.8*	*12.4*
Venture	-13.4	19.4	17.9	17.0	24.0
SSGX – Custom Venture Capital[3]	*-12.4*	*26.9*	*23.2*	*18.1*	*35.3*
Debt Related	1.9	8.7	7.6	9.2	10.0
SSGX – Custom Debt Related[3]	*2.9*	*10.1*	*8.4*	*10.0*	*10.3*
Special Mandates	4.2	20.3	14.7	9.5	6.8
SSGX –Special Mandates[4]	*-0.6*	*15.9*	*13.5*	*12.3*	*11.2*
CalSTRS PE Program	**-1.7**	**19.2**	**16.2**	**14.3**	**13.5**

[1] Strategy classifications reflect the newly adopted categorizations and the Customized PE Index methodology discussed in the updated Private Equity Investment Policy. Multi-Strategy and Longer-Term Strategy performance is not included as performance is not yet meaningful.
[2] Arrows indicate program outperformance or underperformance against benchmarks.
[3] SSGX custom benchmark returns were calculated by State Street for each listed strategy.
[4] SSGX – Buyouts Index (not customized) minus 200 basis points.

Following a strong rebound from COVID-19 lows, the overall portfolio declined through the first three quarters of 2022 coinciding with a downturn in most risk assets over the same period. Over the trailing 1-year period, Buyouts and Debt Related investments saw modest pull-backs while Venture was the largest with a 1-year decline in the double-digits. The Special Mandates portfolio performance was positive over the last year due to solid gains among several of the portfolio's largest holdings.

On a relative basis, Buyouts (approximately three-fourths of the Program's assets) outperformed their custom benchmark over all time periods except the trailing 1-year. Special Mandates investments outperformed their custom benchmark over the latest 1-, 3-, and 5-year periods, but have underperformed over the longer term. Venture and Debt Related strategies generally underperformed across trailing periods.

Structure

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
Fund Investments	-2.0	19.0	15.8	14.0	13.7
Co-Investments	-0.3	20.5	18.6	16.7	11.5
CalSTRS PE Program	**-1.7**	**19.2**	**16.2**	**14.3**	**13.5**

The Fund portfolio is the largest portfolio by structure, and the key driver of overall performance. The Co-Investment program has been a strong contributor to performance and has been steadily increasing as a percent of the total Program, increasing from 18.2% one year ago to 20.9% currently.

Performance by Geography

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)	Since Inception (%)
North America	↑ 1.6	20.4	↓ 16.8	↓ 14.4	↓ 13.3
SSGX – US Funds[1]	0.7	20.4	17.5	15.3	13.6
Non-North America	↓ -11.8	↓ 15.1	↑ 14.1	↑ 13.9	↑ 14.2
SSGX – Non-US[1]	-5.7	15.6	13.6	13.2	12.1
CalSTRS PE Program	**-1.7**	**19.2**	**16.2**	**14.3**	**13.5**

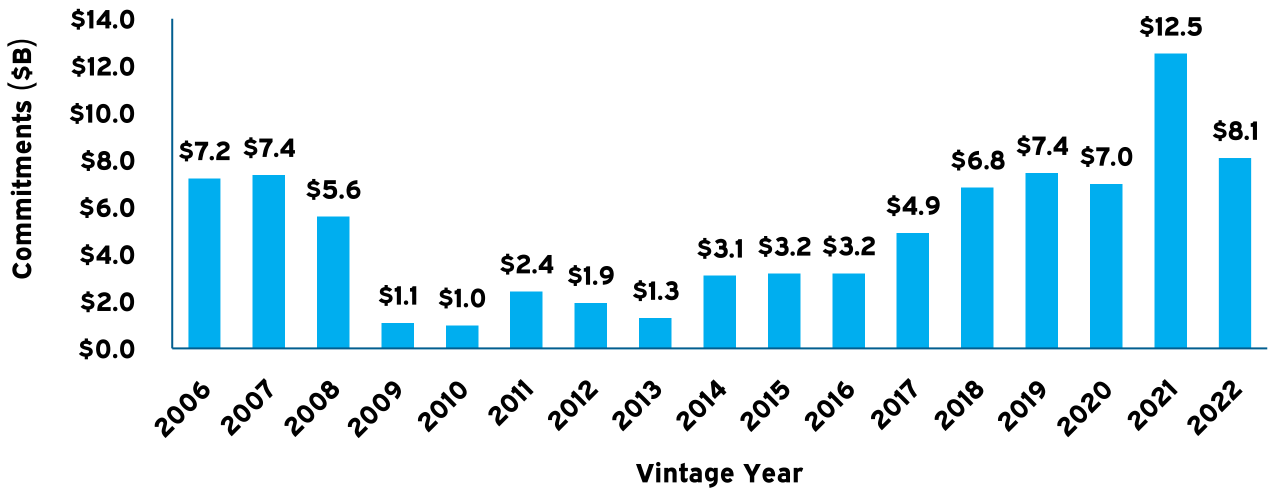
The Program has been primarily driven by the North America investments, representing the largest proportion of capital, which outperformed over the trailing 1-year period but has slightly trailed the US fund benchmark over longer time periods despite strong absolute returns. Non-North America investments have been a strong contributor to absolute and relative returns over longer time periods but have slightly underperformed over more recent time periods.

[1] SSGX benchmark returns were calculated by State Street for each listed region. Matching SSGX benchmarks for Developed (Non-US) and Non-Developed market investments are not available.

Implementation

For the second half of 2022, Staff completed 17 commitments totaling $1.7 billion[1], and 55 commitments totaling $6.7 billion from January 2022 through December 2022. Staff continues to increase its emphasis on no/low fee co-investments by leveraging CalSTRS' size, scale and reputation.

The chart below shows CalSTRS' commitments by vintage year, with 2022 reflecting commitments completed through September 30, 2022.



Overall, CalSTRS has increased its commitments to the asset class significantly in recent years. Staff has sought to maintain diversification across a number of dimensions while maintaining a focus on high quality managers. Note that the year of commitment may not be consistent with vintage year depending one when fund capital was first called or invested.

[1] See Appendix for list of investments completed in the second half of 2022.

Key Policy Parameters

The Portfolio is compliant with key parameters related to strategy diversification as demonstrated in the table below.

Strategy[1,2]	NAV ($M)	Percent of Total NAV (%)	CalSTRS Interim Target (%)	Target Range (%)
Buyouts	34,038	74.6	75	60-85
Venture Capital	4,197	9.2	10	0-15
Debt Related	2,722	6.0	6	5-20
Longer-Term Strategy	1,368	3.0	2	0-10
Special Mandates	2,091	4.6	4	0-8
Multi-Strategy	1,233	2.7	3	0-5
Total Program	**45,648**	**15.8**[3]	**13**[4]	**NA**

Conclusion

The Private Equity portfolio's performance was negative over the prior six months, as short-term performance cooled off from the very strong returns seen during the 2020-2021 recovery from the COVID-19 pandemic lows. Net of cash flows, the portfolio exhibited approximately $2.8 billion of losses since our prior report, and $0.8 billion of losses since September 30, 2021. Private equity industry transaction volume has slowed and fundraising is showing signs of moderation after a very strong year in 2021. The Program's commitment pace remained consistent and Staff has focused on remaining highly disciplined with manager selection, while increasing their emphasis on no/low cost co-investments as part of the Collaborative Model. Commitment pace is expected to moderate slightly in 2023 as staff maintains highly selective with manager selection and potentially targets the lower end of the annual commitment pacing budget.

CalSTRS faces challenges in building the Program, but also has opportunities given its scale, experience, and large investment team. Staff's continued focus on deploying capital through lower cost investment structures will help mitigate overall fees. Changes to the private equity policy adopted in February 2022 expanded the range of investment opportunities and empowers CalSTRS staff to more fully pursue the Collaborative Model. While investment activity has remained consistent since the policy update, the adopted changes will allow CalSTRS staff to participate in a broader opportunity set going forward.

[1] Strategy classifications reflect recently adopted categorizations. Updated interim targets and ranges were adopted in February 2022 and will be reflected in future reports.
[2] Commitments to secondary, private liquidation, co-investments, and other sub-strategies are allocated based on their strategy.
[3] Estimated PE exposure as of September 30, 2022.
[4] CalSTRS has a long-term target of 13% for Private Equity.

The Appendix includes a list of investments completed during the second half of 2022, as well as some data and commentary on the private equity asset class for the third quarter of 2022.

Please do not hesitate to contact us if you have questions or require additional information.

JH/TF/LR/JM/jls

Attachment

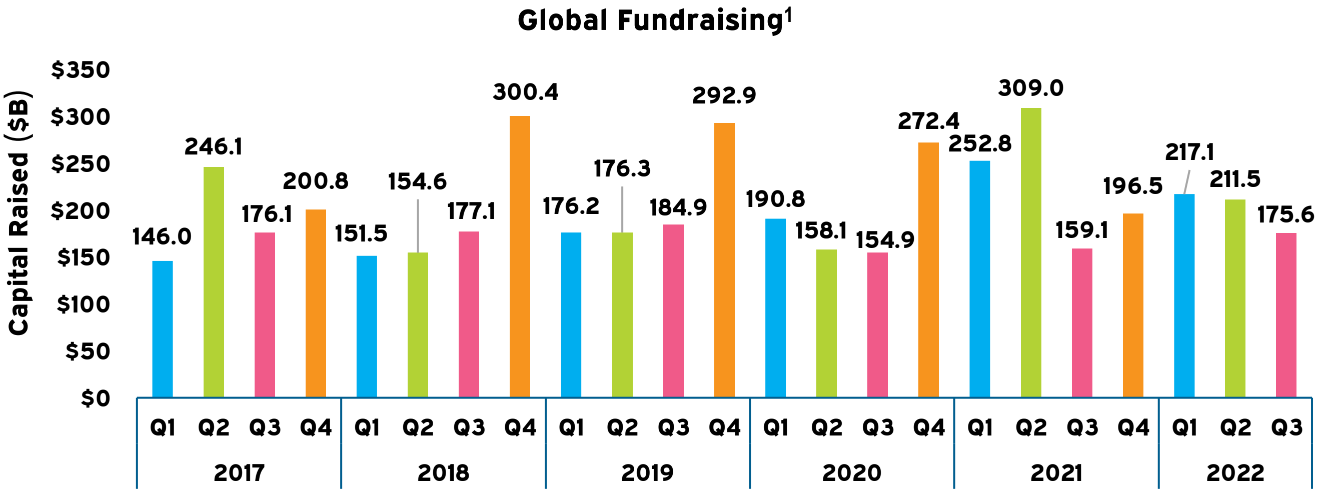
CalSTRS Private Equity Completed Investments – H2 2022

Investment	Date Signed	Geography	Strategy	Commitment[1] ($M)	Commit. / NAV (bps)[2]
Bessemer Venture Partners XII	July 2022	North America	Venture Capital	30	7
Bessemer Venture Partners Forge I	July 2022	North America	Buyout	20	4
Spectrum Equity X	July 2022	North America	Buyout	125	27
Co-Investment	July 2022	North America	Buyout	75	16
Apax XI	August 2022	North America	Buyout	150	33
ASF IX (Ardian)	August 2022	North America	Buyout	250	55
Co-Investment	August 2022	North America	Long-Term Strategies	75	16
Co-Investment	August 2022	North America	Buyout	3	1
Ares Special Opportunities Fund II	September 2022	North America	Debt Related	100	22
Blackstone Tactical Opportunities IV + SMA	September 2022	Global	Multi-Strategy	250	55
CalSTRS Low. Mid. Market VII (Harbourvest)	September 2022	North America	Special Mandate	250	55
Co-Investment	September 2022	North America	Debt Related	75	16
Co-Investment	September 2022	North America	Buyout	75	16
Co-Investment	October 2022	North America	Venture Capital	15	3
Co-Investment	October 2022	North America	Buyout	15	3
Co-Investment	December 2022	North America	Buyout	150	33
Co-Investment	December 2022	Europe	Buyout	0.2	<1

[1] Co-Investments represent committed rather than approved amounts.

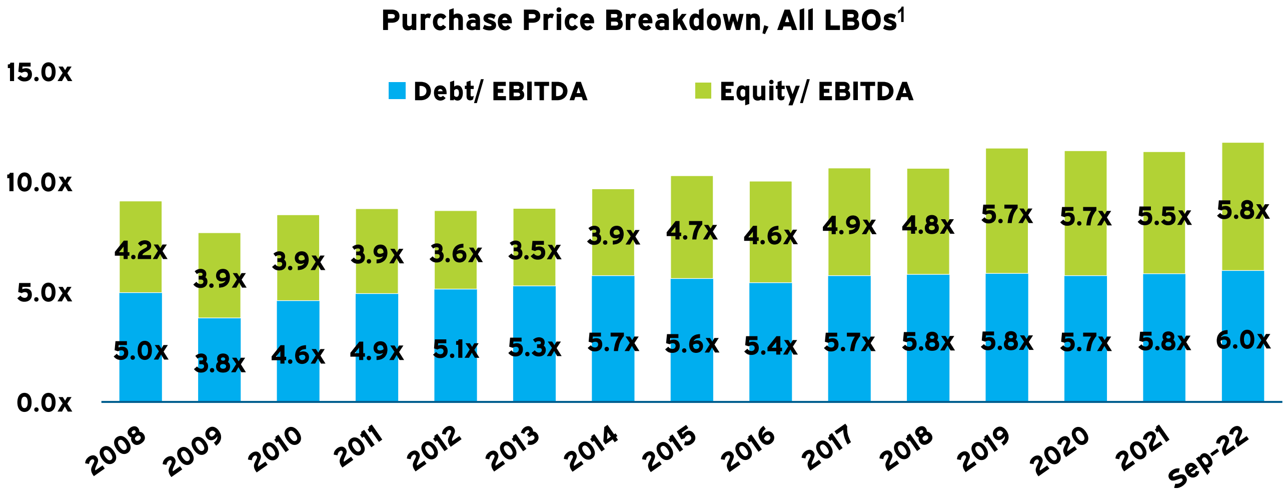
[2] Delegated authority limits are now stated as a percentage of PE NAV at the time of investment with a 2% limit for undiversified vehicles and 4% limit for diversified vehicles.

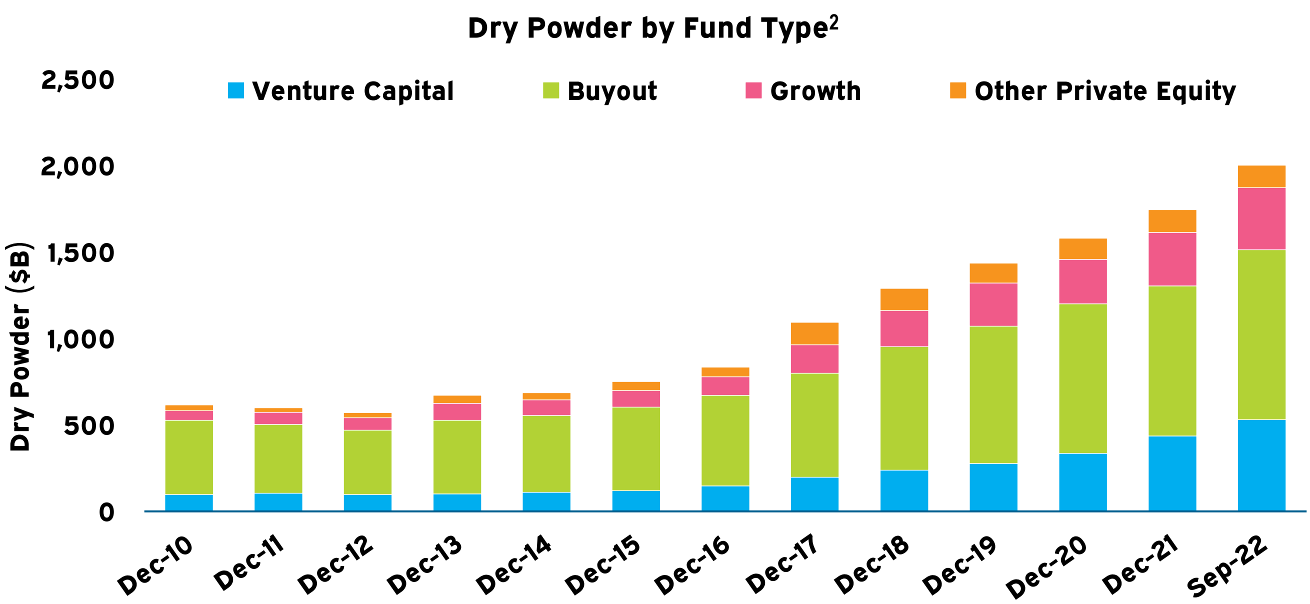
Private Equity Market Commentary – Q3 2022



Fundraising activity for private equity funds in the third quarter of 2022 decreased by 17% compared to the previous quarter, with $175.6 billion raised. While 2021 was an exceptional year for private equity markets, there have been signs of moderation of activity in 2022. The post-COVID boost in fundraising activity has diminished, and evidence may now be growing of a sustained slowdown on the back of macroeconomic and geopolitical concerns resulting from the outbreak of war in Ukraine, inflationary pressures, and rising interest rates. Additionally, the denominator effect on investors' portfolios is among the factors expected to drive softer fundraising in coming quarters. As public equity and fixed income markets have declined in 2022, private equity allocations are proportionately higher as a percentage of investors' overall portfolios, given the delay in private equity valuations reflecting those of public markets. Therefore, some investors have found themselves relatively closer to long-term target allocations, which could curb their appetite for fresh allocations. Per Preqin, despite these concerns, most investors still plan to continue committing capital to private equity in the next 12 months even as the aggregate amount of fundraising is expected to remain weak in 2023. Overall, Preqin forecasts global private equity fundraising to fall by 2.7% in 2023, following an expected 21.5% decline in 2022. According to Preqin data, there were more than 8,233 funds raising in the market as of September 2022, with an aggregate capital target of around $1.6 trillion. Both metrics are pushing record highs and therefore paint a picture of highly competitive fundraising. As a result, funds have been spending more time on the road than ever, averaging 20.8 months to final close in 2022, up from 17.1 months in 2021. That said, spending more time in the market does not seem to improve the chances of hitting target but rather seems to suggest a lower success rate. Overall, the trend clearly appears to be that investors still plan to deploy capital into private equity on the whole but average ticket sizes are likely to be down. A growing share of total fundraising is likely to be assigned via re-ups to existing manager relationships, as well.

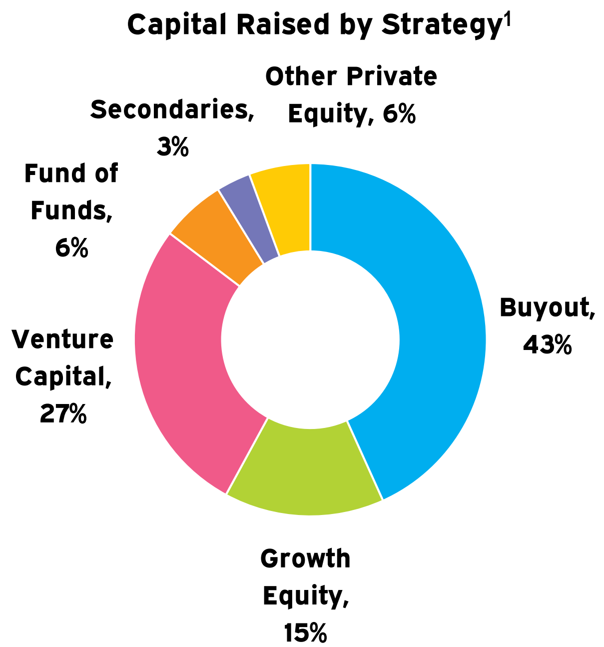
[1] Source: Preqin.

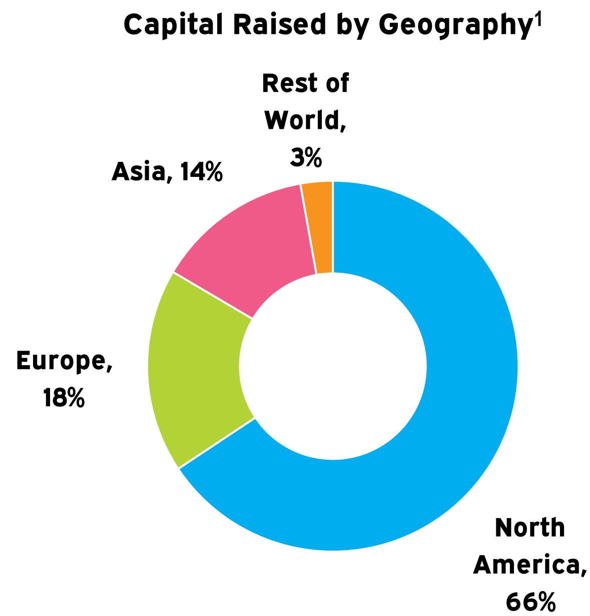




Relative to 2021, the average private equity purchase price multiple has increased from 11.4x EBITDA to 11.8x EBITDA in the first three quarters of 2022. Equity contribution (relative to total purchase price) in the first three quarters of 2022 has remained consistent with 2021 at approximately 49%, indicating that total purchase prices comprise slightly more debt than equity. That said, in the third quarter alone, equity contribution relative to a total purchase price of 11.7x EBITDA was 42%. Dry powder levels have increased by approximately 15% from Q4 2021 (and 11% from Q2 2022) and remain at all-time highs. Dry powder will remain high as long as more capital is being raised than is being deployed, and in the near-term, investors may expect to continue to see high purchase prices as a result of the high levels of capital competing for deals. That said, private equity deal valuation multiples have also experienced downward pressure and started to lower with depressed valuations in the public markets as well as higher interest rates, which have increased borrowing costs.

[1] Source: S&P.
[2] Source: Preqin.





Buyout (43% of all private equity capital raised) and Venture Capital (27%) funds represented the most popular private equity sub-strategies during the third quarter of 2022. Buyout funds increased from 41% of capital raised in Q2 2022 to 43% in the third quarter of 2022, and Growth Equity increased from 14% to 15% of capital raised. Venture Capital strategies, as a percentage of total capital raised, slightly decreased by 1% from Q2 2022. Fund of Funds, Secondaries, and Other Private Equity, which includes co-investment and hybrid vehicles, decreased from 17% to 15%, collectively, through the third quarter compared to the previous quarter.

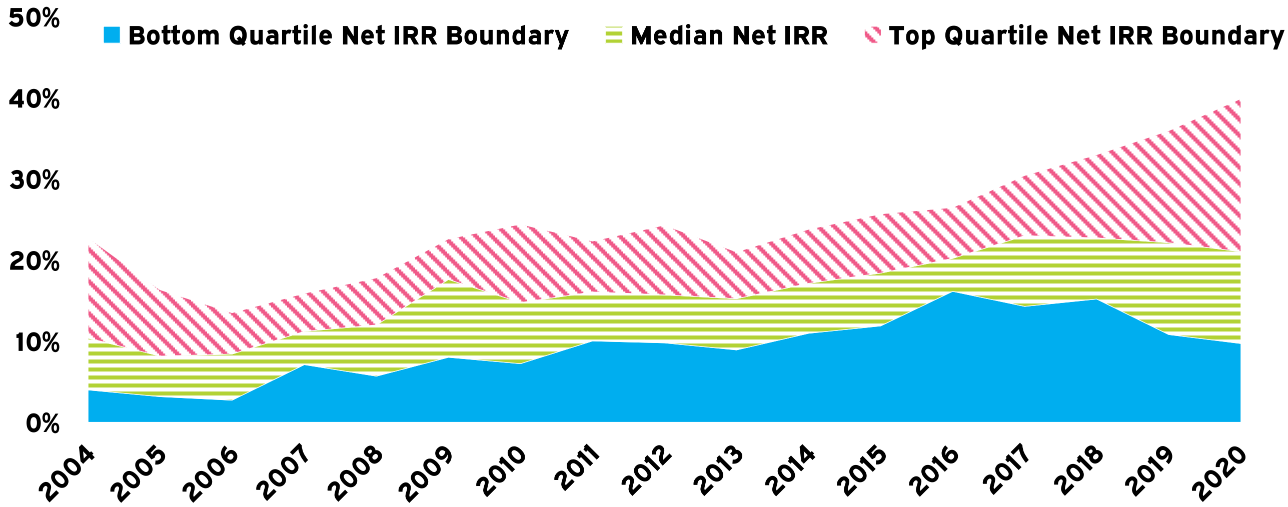
North America-focused vehicles continued to represent the majority of funds raised during the third quarter, representing 66% of total capital. However, this is a decrease from the 75% in the prior quarter. Alternatively, as a percentage of total capital raised, commitments to Europe and Asia increased by 12% and 3%, respectively, during the third quarter. Of note, recent commitments to Asia have primarily comprised Asia-focused regional funds whereas commitments to China-focused funds have dropped, driven by notable risk aversion resulting from China's residential property market and ongoing lockdown measures. Overall, private equity investors continued to favor commitments to North America-focused funds, and investor appetite for Rest of World decreased over the quarter while commitments to Europe- and Asia-focused vehicles increased.

[1] Source: Preqin.

Private Equity Performance by Horizon[1]

Horizon	Private Equity (%)	Buyout (%)	Venture Capital (%)	Growth Equity (%)
1 Year to 6/2022	14.4	14.0	3.9	4.9
3 Years to 6/2022	23.3	23.8	21.2	17.1
5 Years to 6/2022	20.8	21.4	19.4	18.2
10 Years to 6/2022	17.6	18.6	15.3	17.0

Private Equity Performance by Vintage Year[2]



As of June 30, 2022, private equity returns weakened significantly, generating a 14.4% IRR over the trailing 12 months through Q2 2022. This represents an ~15% drop from the trailing one-year returns as of Q1 2022, which shows that private equity returns are starting to reflect the decline of valuations observed in the public markets throughout 2022 and the dampening effects of inflationary pressures, rising interest rates, and geopolitical concerns on performance. Returns have decreased significantly across each private equity strategy with Growth funds experiencing the largest drop of 24.4% from 29.3% one-year returns as of Q1 2022 to 4.9% as of Q2 2022. In general, performance has been strong in each vintage year since the Global Financial Crisis. Buyout, Venture Capital, and Growth Equity funds have all generally performed well over the various horizons on an absolute basis, with Buyout funds outperforming Venture and Growth funds across each time period as of Q2 2022. The spread between first and third quartile performance in private equity has grown consistently since the Global Financial Crisis; 2007 vintage funds reported an 8.8% spread while 2020 vintage funds reported a 30.2% spread.

[1] Source: Preqin Horizon IRRs as of 6/30/2022. Data as of 9/30/2022 is not yet available.
[2] Source: Preqin, Private Equity – All, Quartile Returns as of 9/30/2022. Data pulled on January 4, 2023.