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MEMORANDUM

TO: Members of the Investment Committee, CalPERS
FROM: Meketa Investment Group
DATE: March 13, 2023
RE: Semi-Annual Private Equity Performance Review as of December 31, 2022

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 December 31, 2022[1] 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, along with other asset classes, showed diminished returns in 2022 with both the CalPERS' Portfolio and the Policy Benchmark generating negative returns for the trailing one-year period. Performance of the Portfolio and the Policy Benchmark across longer time periods has also decreased compared to prior period reports. However, we note that the Portfolio's performance outpaces the Policy Benchmark for each of the time horizons below.

Private Equity Performance as of December 31, 2022[1]

	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
CalPERS PE Portfolio[2]	**-2.3**	**15.3**	**12.1**	**12.4**
Policy Benchmark[3]	*-19.6*	*5.7*	*6.5*	*10.8*
FTSE Global All Cap + 150 bp[4]	*-19.6*	*5.7*	*6.3*	*9.5*
Excess vs. Policy Benchmark	↑ 17.3	↑ 9.6	↑ 5.6	↑ 1.6
Excess vs. FTSE Global All Cap + 150 bps	↑ 17.3	↑ 9.6	↑ 5.8	↑ 2.9

[1] State Street's CalPERS Private Equity performance analysis for the period ended December 31, 2022, reported with a 1-quarter lag.
[2] Source: State Street. CalPERS returns are reported as time-weighted.
[3] The current Policy Benchmark is a Custom FTSE Global All Cap ex-Tobacco Net of Tax Index + 150 basis points, lagged by one quarter. Previous benchmark was blend FTSE US + FTSE AW ex US + 3% lagged 1 quarter from September 2011 to June 2018, Wilshire 2500 ex-tobacco +3% between July 2009 and September 2011, and the Custom Young Fund Index prior to July 2009.
[4] Figures are one quarter lagged, time weighted. FTSE Global All Cap returns are based on the FTSE Global All Cap Index + 150 basis points through October 2011, the FTSE Global All Cap Net of Tax (US RIC) Index + 150 basis points through March 2015, and thereafter on the FTSE Global All Cap ex-Tobacco Net of Tax Index + 150 basis points.

As we have noted in prior reports, private equity performance is reported with a significant delay compared to publicly traded assets. As such, the Portfolio and the Policy Benchmark performance as of December 31, 2022 are each reported with a one-quarter lag (i.e., values through September 30, 2022). Additionally, private equity asset values tend to be less volatile, both in up as well as down markets, compared to publicly traded asset values. In other words, private equity assets tend to fall less in declining public equity markets and increase more slowly in rapidly rising public equity markets.

The Portfolio's NAV as of December 31, 2022 was $50.3 billion, a decrease of $3.1 billion (net of cash flows) compared to the June 30, 2022 NAV of $52.8 billion. The current NAV represents 11.4% of the Total Fund, compared to the 13% target.[1] As we noted above, the Portfolio's NAV is calculated based upon September 30, 2022 values, while the overall CalPERS portfolio includes publicly traded assets valued as of December 31, 2022.

Strategy[2]

	NAV ($M)	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Buyouts	37,369	0.4	16.0	13.1	13.4
Credit	1,465	-3.1	7.2	4.5	5.9
Growth/Expansion	8,870	-10.8	16.3	11.8	13.6
Opportunistic	1,735	-8.0	12.5	11.6	12.2
Venture	754	3.0	18.3	13.8	9.1
Other[3]	89	NA	NA	NA	NA
CalPERS PE Portfolio	**50,283**	**-2.3**	**15.3**	**12.1**	**12.4**

While the total Portfolio one-year performance was significantly lower than at the same time last year (-2.3% vs. 39.3% previously), the Portfolio has continued to perform well relative to the public benchmarks. Across longer time periods, the Portfolio's performance has continued to outpace the public benchmarks, as well. Buyout is the key driver for the portfolio, providing attractive returns overall, especially over longer time periods. Growth/Expansion, Opportunistic, and Credit strategies each generated negative returns over the trailing one-year period. Venture experienced the largest drop in one-year performance since our June 2022 report, decreasing from 37.2% to 3.0%.

1 In November 2021, the Board approved a 13% target allocation (effective July 2022) for the Portfolio.
2 Source: State Street. All trailing returns included in this report are time-weighted.
3 Includes currency and stock holdings.

Structure[1]

	NAV ($M)	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Customized Investment Accounts	10,119	2.0	15.9	13.2	11.2
Co-Investments / Direct	5,680	0.2	13.0	9.1	13.3
Fund of Funds / Secondaries	1,564	0.0	12.4	8.8	9.7
Funds	32,830	-3.9	15.5	12.6	12.7
Other[2]	89	NA	NA	NA	NA
CalPERS PE Portfolio	**50,283**	**-2.3**	**15.3**	**12.1**	**12.4**

As mentioned previously, the Portfolio's drop in performance has occurred broadly across investment structures, with the trailing one-year performance for each structure decreasing since the June 2022 report. Most notably, the Fund's portfolio as the largest exposure has posted a negative return over the last year. The Fund of Funds portfolio has underperformed across all longer-term time periods, in part due to their higher fee loads.

Performance by Geography[3]

	NAV ($M)	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
United States	36,657	-1.3	15.9	12.4	12.2
Developed International	11,835	-2.0	17.7	15.5	15.9
Emerging Markets	1,702	-18.2	1.6	2.1	7.1
Other[4]	89	NA	NA	NA	NA
CalPERS PE Portfolio	**50,283**	**-2.3**	**15.3**	**12.1**	**12.4**

While the Portfolio has been primarily driven by the US investments, Developed International investments (primarily in Europe) have been a strong contributor to returns, with certain managers in the region generating strong performance over the years. While all regions experienced negative returns over the trailing one-year, Emerging Markets had a more drastic downturn recently. The longer-term underperformance in Emerging Markets is partially impacted by the prior use of fund of funds (with comparatively high fees) initially used to gain exposure to the region.

[1] Source: State Street. All trailing returns included in this report are time-weighted.
[2] Includes currency and stock holdings.
[3] Source: State Street.
[4] Includes currency and stock holdings.

Implementation

For the second half of 2022, Staff completed 31 commitments totaling $7.5 billion,[1] and 66 commitments totaling $17.0 billion from January 2022 through December 2022. Staff completed an aggregate $4.8 billion, or approximately 64% of commitments, of no/low fee Co-Investments (6) and Customized Investment Accounts[2] (12) in the second half of 2022 by leveraging CalPERS' size and scale. Additionally, Staff has looked to add exposure to Growth/Expansion and Venture in order to complement the existing exposure in Large and Mega Buyouts.

Key Policy Parameters

The Portfolio is compliant with key parameters related to strategy diversification as demonstrated in the table below. As stated previously, in November 2021 the Portfolio's asset target was increased to 13% from 8% and became effective July 2022. Additionally, the strategy allocation targets and ranges were modified with the updated Total Fund Policy effective November 2022.

Strategy	NAV[3] ($M)	Percent of Total NAV (%)	CalPERS Target (%)	Target Range (%)
Buyout	37,369	74.3	65	55-80
Credit	1,465	2.9	0	0-10
Growth/Expansion	8,870	17.6	25	5-30
Opportunistic	1,735	3.5	4	0-10
Venture	754	1.5	6	0-12
Other[4]	89	0.2	NA	NA
Total Portfolio	**50,283**	**11.4**[5]	**13**[6]	**+/- 4**

Conclusion

The Portfolio has shown muted recent performance with a negative trailing one-year return. However, the Portfolio returns exceed the Policy Benchmark by significant margins over all time periods. Additionally, the Portfolio, as a percent of CalPERS' total portfolio, has remained relatively steady and is near CalPERS' target of 13%. Despite the recent declines in values corresponding to a broader market downturn, the Portfolio's long-term asset growth has been driven by both strong underlying performance and Staff's activities to enhance the Portfolio by sourcing attractive investments with high-conviction managers.

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

[2] Note that CIAs are typically drawn over multi-year periods. Also, CIAs may not end up being fully invested as CalPERS maintains opt-out rights or otherwise not fully deployed.

[3] Source: State Street.

[4] Includes currency and stock holdings.

[5] PE portfolio NAV as a percent of total CalPERS portfolio as of 9/30/22.

[6] In November 2021, the Board approved a 13% target allocation (effective July 2022) for the Portfolio.

In December, 2022 the Private Equity MID, Greg Ruiz, resigned from CalPERS. Subsequently, Anton Orlich was appointed Private Equity MID. Since coming on board, we have had several conversations with Mr. Orlich and the rest of the private equity team about CalPERS' private equity strategy and implementation. We look forward to working with him as well as the balance of CalPERS private equity staff in the coming months and years.

Going into 2023, we note that the Staff has been executing on their strategic plan, specifically:

→ Increase capital deployment – Staff has been committing $10 - $15 billion per year ($16 billion in calendar year 2022) over the last two years.

→ Increase cost efficiency – No/low fee co-investments and Customized Investment Accounts are an important and growing portion of the Portfolio.

→ Add diversification to the Portfolio – Staff has been adding more Venture, Growth Equity and Mid-Market Buyout strategies to complement the Portfolio's Large and Mega Buyout exposure.

→ Maintain and enhance relationships with high quality managers – Staff has been able to invest meaningful capital with highly sought managers.

While CalPERS faces challenges in building the Portfolio, it 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.

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.

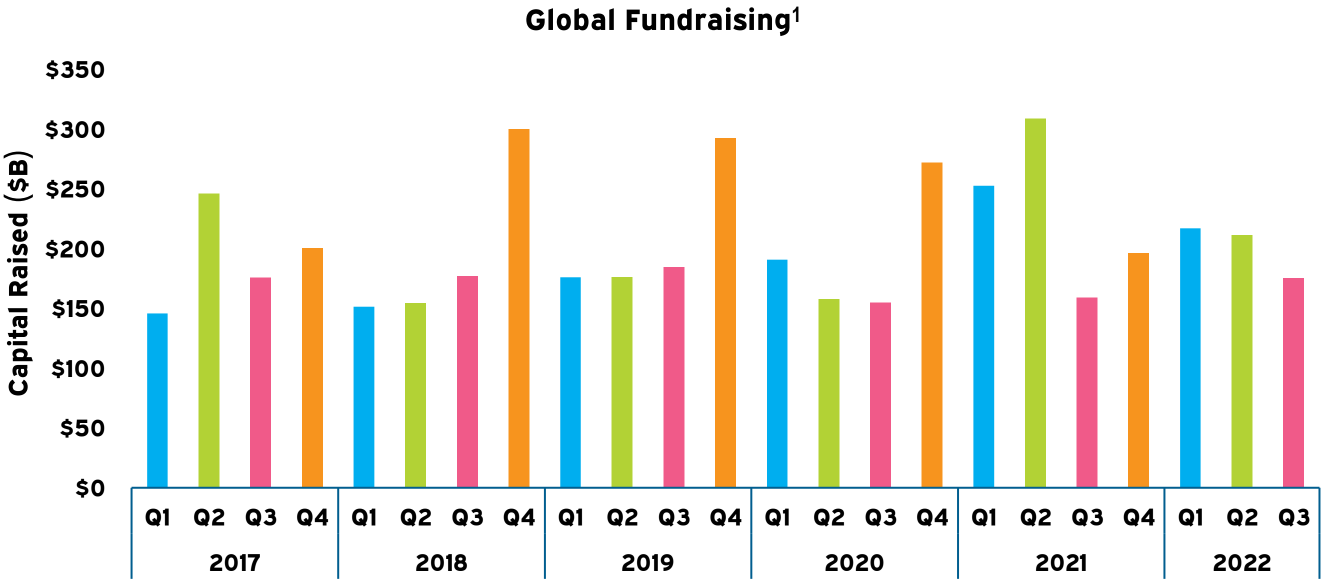
SH/LR/JM/SPM/JC/jls

Attachments

CalPERS Private Equity Completed Investments – H2 2022

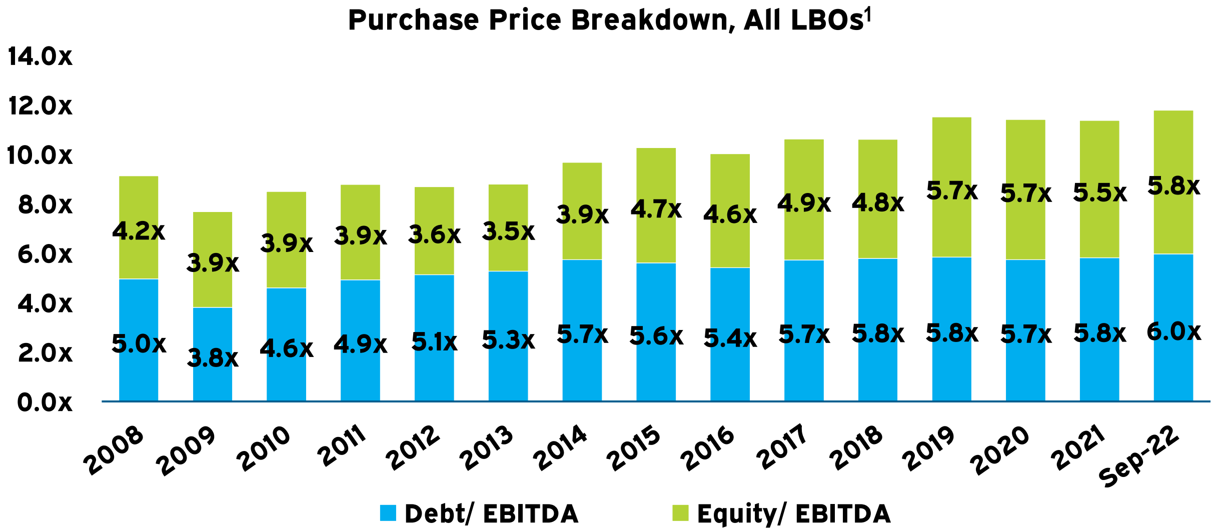
Investment	Date Signed	Geography	Strategy	Commitment ($M)
Oak HC/FT Partners V, L.P.	July 2022	US	Growth Equity	200
Sequoia Capital China Seed III	July 2022	Emerging Asia	Venture	12
Sequoia Capital China Venture IX	July 2022	Emerging Asia	Venture	32
Sequoia Capital China Growth VII	July 2022	Emerging Asia	Venture	104
Sequoia Capital China Expansion I	July 2022	Emerging Asia	Venture	134
EQT X	July 2022	Europe	Buyout	500
Nordic Bear (CIA)	July 2022	Europe	Buyout	350
Advent GPE X (CIA)	July 2022	Global	Buyout	650
Redwood Lane Capital (CIA)	July 2022	US	Buyout	325
Butterfly II (CIA)	July 2022	US	Buyout	250
Project Endor (Co-Investment)	August 2022	US	Buyout	175
Project Quail Opportunities (CIA)	August 2022	US	Buyout	600
Patience DF Holdings (Co-Investment)	August 2022	US	Growth Equity	90
Private Investment Partners (CIA)	September 2022	Global	Venture	100
CD&R XII	September 2022	Global	Buyout	500
Project Purse (Co-Investment)	September 2022	Global	Venture	20
Project Ace (Co-Investment)	October 2022	US	Growth Equity	200
Goodwater Fund V	October 2022	Global	Venture	60
Goodwater Infinity III	October 2022	Global	Venture	40
Healthcare and Fintech (CIA)	October 2022	Global	Growth Equity	200
Project Vision (Co-Investment)	November 2022	US	Buyout	100
WCAS Spartan (Co-Investment)	November 2022	US	Buyout	5
Timber Coast Private Opportunities (CIA)	November 2022	US	Buyout	300
Vitruvian Investment Partnership V	December 2022	Europe	Growth Equity	301
DS Opportunities (CIA)	December 2022	Europe	Growth Equity	301
TPG Golden Bear (CIA)	December 2022	US	Buyout	100
Hellman & Friedman XI	December 2022	Global	Buyout	600
Accel-KKR VII	December 2022	Global	Buyout	180
BOND III	December 2022	Global	Venture	75
GCM Elevate (CIA)	December 2022	Global	Opportunistic	500
TPG NEXT (CIA)	December 2022	Global	Opportunistic	500

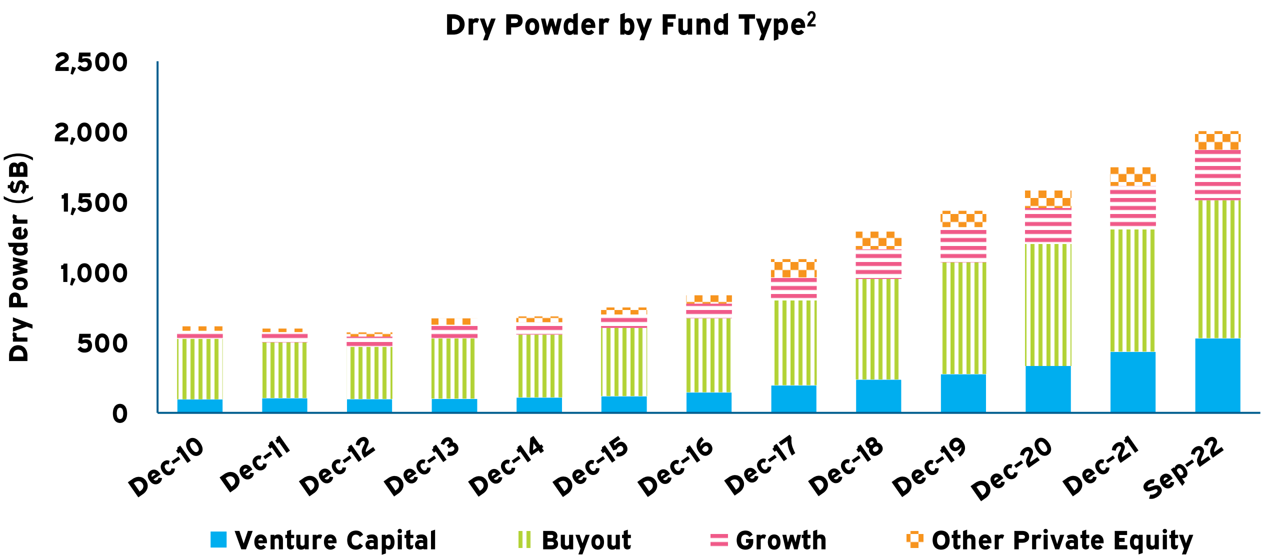
Private Equity Market Commentary – Q3 2022



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] Preqin.

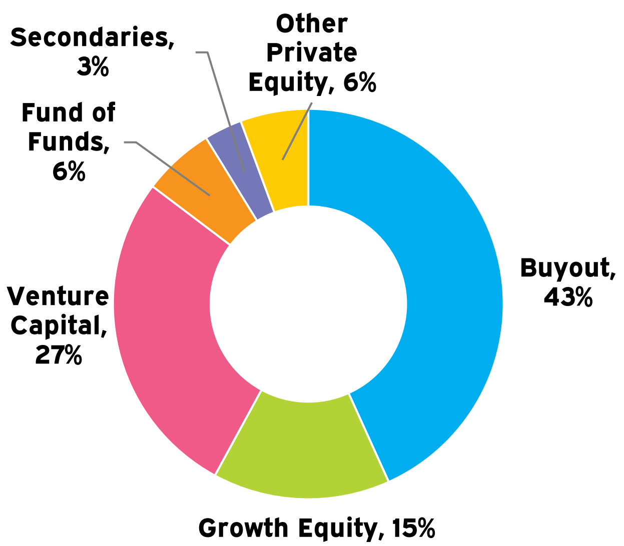




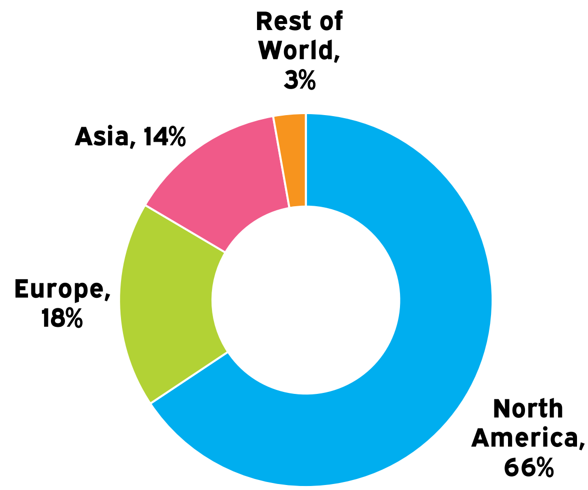
Relative to 2021, the average private equity purchase price multiple has increased from 11.4x EBITDA to 11.8x EBITDA in the first three quarters of 2022. Equity contribution (relative to total purchase price) in the first three quarters of 2022 has remained consistent with 2021 at approximately 49%, 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.

Capital Raised by Strategy[1]



Capital Raised by Geography[1]



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.

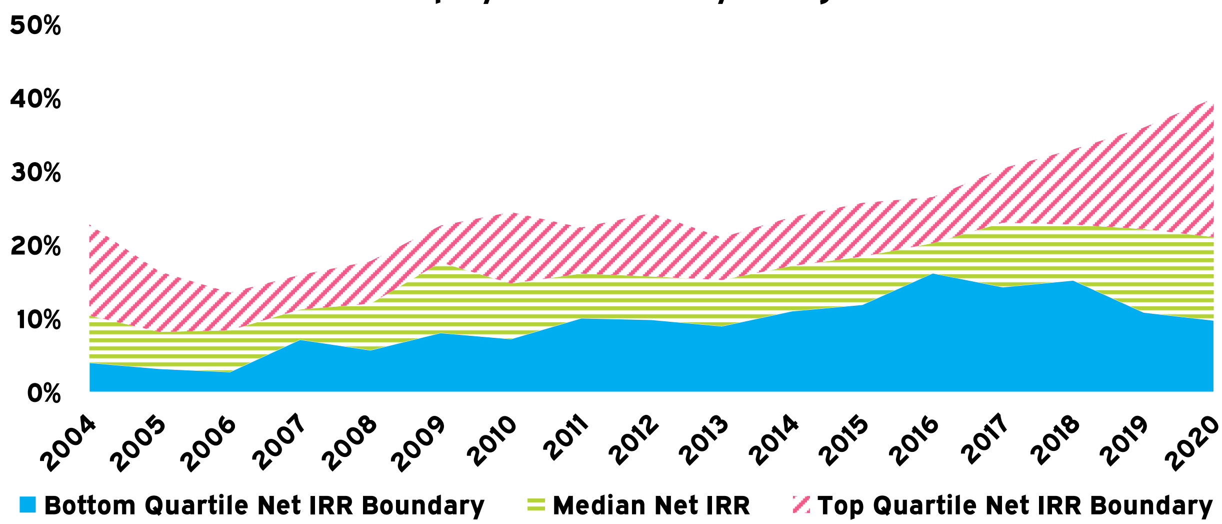
[1] Source: Preqin.

March 13, 2023

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