



# *XTAL PE Benchmarks Performance Report*

## *September 2021*

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### **NORTH AMERICAN AND EUROPEAN BUYOUT FUND INDICES POST HEALTHY RETURNS ACROSS VINTAGES YEAR-TO-DATE AT THE END OF JULY.**

**THREE-YEAR ANNUALIZED PERFORMANCE OF THE 2015 VINTAGE INDEX SERIES SHOWS EXCESS RETURNS AGAINST PE-WEIGHTED BALANCED BENCHMARKS TO THE TUNE OF 171 BASIS POINTS AND 149 BASIS POINTS FOR THE NORTH AMERICAN AND THE EUROPEAN UNIVERSES, RESPECTIVELY.**

- ▶ XTAL North America and Europe Buyout Indices for the vintages 2013 through 2015 show positive risk premia over corresponding PE-weighted balanced benchmarks for the three-year annualized performance measurement period at the end of July 2021.
- ▶ Maximum drawdown readings across vintage index series since March 23, 2020 show solid rebounds from COVID-19 market related lows. At the end of July 2021, the XTAL North America Buyout Overall Index for the vintage 2016 posted a positive 71.60% return since the 2020 low, while the corresponding XTAL Europe Buyout Overall Index returned a lower 65.89% positive performance for the same period.
- ▶ Small is beautiful. XTAL North America Small & Medium Buyout Indices of vintages 2014 through 2016 post three-year annualised returns at the end of July greater than performance readings of larger index peers.

*“A good decision is based on knowledge and not on numbers.”, Plato (428/427 or 424/423 BC-348/347 BC).*

## **Insight into the Pattern of Private Equity Buyout Funds Performance**

An analysis of index returns across vintages applying the fully-diluted time-weighted DARC<sup>1</sup> methodology (Duration Adjusted Return on Capital) to a proprietary dataset of North American and European buyout funds for the vintages 2013 through 2016 has shown positive performance throughout different measurement periods, with longer term returns exceeding performance readings of private equity-weighted balanced benchmarks. XTAL private equity-weighted balanced benchmarks provide exposure to both equity and money markets by investing primarily in a combination of private equity non-invested capital commitment and stock market benchmarks, namely the S&P 600 and the STOXX Europe 600 for the American and European universes, respectively. PE-weighted balanced benchmarks reflect

<sup>1</sup> The DARC (Duration Adjusted Return on Capital) is a groundbreaking and patented time-weighted paradigm (USPTO n. US 8,386,356 B2 and related PCT applications) to analyse private market funds as if they were bonds. For more information on the DARC methodology please refer to Saccone M., "A Multi-Asset Standard Measure for Private Equity Returns", May 2019.

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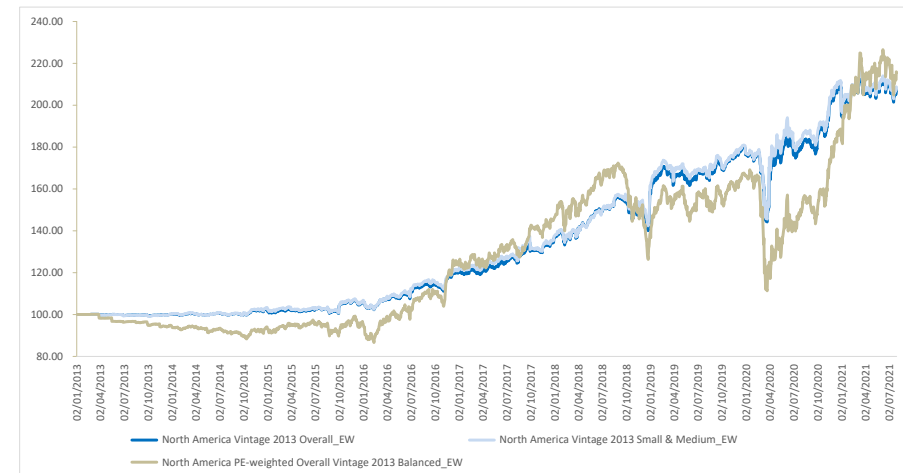
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investors' true benchmarking experience as they take into account the non-invested capital commitment to the underlying buyout funds, reconciling, on a daily basis, the NAV of the constituent fund with the notional capital committed to the investment vehicle.

July saw declines in performance across vintages of the XTAL North America buyout index series. North American Indices factored in negative returns in the U.S. small cap sector for the month as fears over Covid-19 cases and the inflationary outlook put a dent in share prices. Conversely, XTAL Europe buyout indices posted positive returns month on month at the end of July, buoyed by rosy Eurozone business activity readings and an acceleration in the vaccine roll-out amid hopes that rising cases of the Covid-19 Delta variant would not necessarily lead to further restrictions on economic activity.

As highlighted in Table 1, the XTAL North America Vintage 2013 Small & Medium equally-weighted and asset-weighted Indices posted a healthy +5.79% and +6.20% performance year-to-date at the end of July, respectively. Year-to-date returns of the XTAL North America Vintage 2013 Overall equally-weighted and asset-weighted Indices stood, respectively, at +6.13% and +7.61%. Those readings set against solid performance readings to the tune of +17.54% and +17.16% of the North America PE-weighted Overall Vintage 2013 Balanced equally-weighted and asset-weighted Indices, respectively.

**Figure 1 Vintage 2013 - North America Buyout Equally-weighted Indices vs. North America PE-weighted Overall Balanced Equally-weighted Index – Jan. 2, 2013-Jul. 30, 2021**



Source: XTAL Strategies

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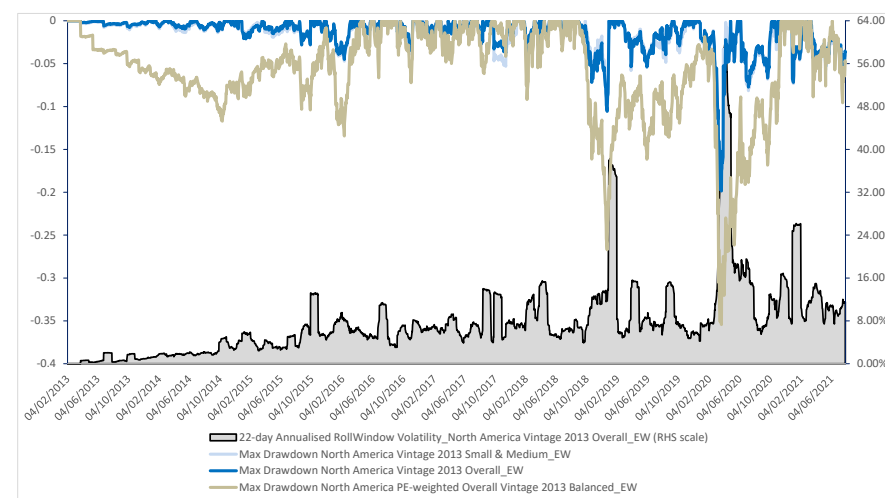
**Table 1 Vintage 2013 - North America Buyout Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	North America Vintage 2013 Small & Medium_EW	North America Vintage 2013 Small & Medium_AW	North America Vintage 2013 Overall_EW	North America Vintage 2013 Overall_AW	North America PE-weighted Overall Vintage 2013 Balanced_EW	North America PE-weighted Overall Vintage 2013 Balanced_AW
1 mth	-1.22%	-1.13%	-1.21%	-1.20%	-2.33%	-2.30%
3mths	-0.04%	-0.04%	-0.04%	-0.04%	-0.04%	-0.04%
YTD	5.79%	6.20%	6.13%	7.61%	17.54%	17.16%
1 yr	13.94%	14.30%	15.33%	21.15%	44.90%	45.43%
since March 23, 2020	43.22%	39.60%	43.47%	50.57%	93.61%	95.00%
3 yrs annualized	11.26%	11.65%	11.04%	13.38%	8.77%	7.30%
since inception annualized	8.94%	9.48%	8.84%	9.94%	9.36%	9.14%

Source: XTAL Strategies calculations on data updated as of July 30, 2021

Figure 2 shows that a rebound from the March 23, 2020 maximum drawdown of -19.86% of the XTAL North America Vintage 2013 Overall equally-weighted Index continued at a sustained pace as volatility readings tapered off across indices of the 2013 vintage series. At the end of July 2021, the XTAL North America Vintage 2013 Overall equally-weighted and asset-weighted Indices recorded positive returns to the tune of +43.47% and +50.57%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL North America Vintage 2013 Overall equally-weighted and asset-weighted indices over corresponding PE-weighted balanced benchmarks stood at +227 and +608 basis points at the end of July 2021, respectively.

**Figure 2 Vintage 2013, Max Drawdown vs. 22-day Rolling Window Volatility - North America Buyout Equally-weighted Indices and North America PE-weighted Overall Balanced Equally-weighted Index – Feb. 4, 2013-Jul. 30, 2021**



Source: XTAL Strategies

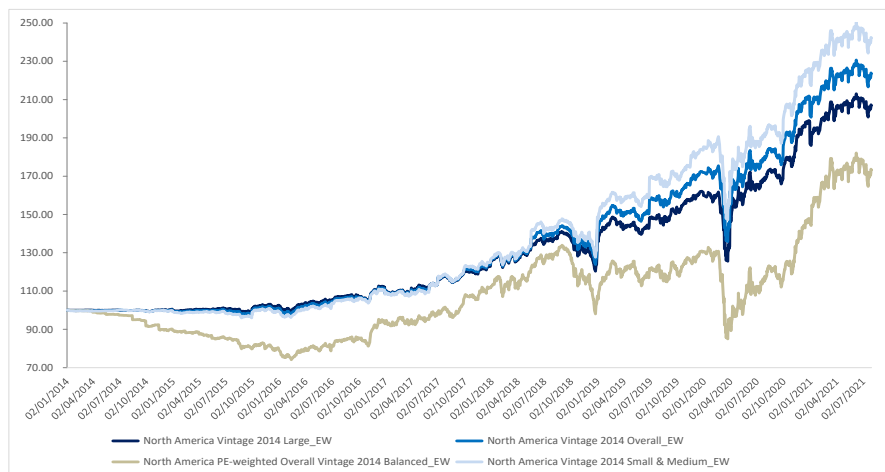
Table 2 shows that the XTAL North America Vintage 2014 Small & Medium equally-weighted and asset-weighted Indices posted solid +10.91% and +10.21% performance readings year-to-date at the end of July, respectively. Similarly, the XTAL North America Vintage 2014 Large equally-weighted and asset-weighted Indices recorded positive returns to the tune of +10.74% and +10.95% year-to-date at the end of

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July, respectively. Year-to-date returns of the XTAL North America Vintage 2014 Overall equally-weighted and asset-weighted Indices stood, respectively, at +10.83% and +10.87%. Those readings set against strong performance readings of +18.99% and +19.43% of the North America PE-weighted Overall Vintage 2014 Balanced equally-weighted and asset-weighted Indices, respectively.

**Figure 3 Vintage 2014 - North America Buyout Equally-weighted Indices vs. North America PE-weighted Overall Balanced Equally-weighted Index – Jan. 2, 2014-Jul. 30, 2021**



Source: XTAL Strategies

**Table 2 Vintage 2014 - North America Buyout Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	North America Vintage 2014 Small & Medium_EW	North America Vintage 2014 Small & Medium_AW	North America Vintage 2014 Large_EW	North America Vintage 2014 Large_AW	North America Vintage 2014 Overall_EW	North America Vintage 2014 Overall_AW	North America PE-weighted Overall Vintage 2014 Balanced_EW	North America PE-weighted Overall Vintage 2014 Balanced_AW
1 mth	-1.52%	-1.47%	-1.36%	-1.36%	-1.44%	-1.37%	-2.33%	-2.38%
3mths	-0.11%	-0.10%	-0.05%	-0.05%	-0.08%	-0.06%	-0.04%	-0.04%
YTD	10.91%	10.21%	10.74%	10.95%	10.83%	10.87%	18.99%	19.43%
1 yr	26.50%	23.53%	22.79%	22.88%	24.66%	22.94%	48.79%	49.79%
since March 23, 2020	64.47%	63.12%	64.82%	63.48%	64.64%	63.45%	103.65%	107.86%
3 yrs annualized	19.32%	17.95%	14.83%	13.59%	17.04%	14.00%	10.60%	9.60%
since inception annualized	12.38%	11.26%	10.07%	9.60%	11.20%	9.76%	7.52%	7.26%

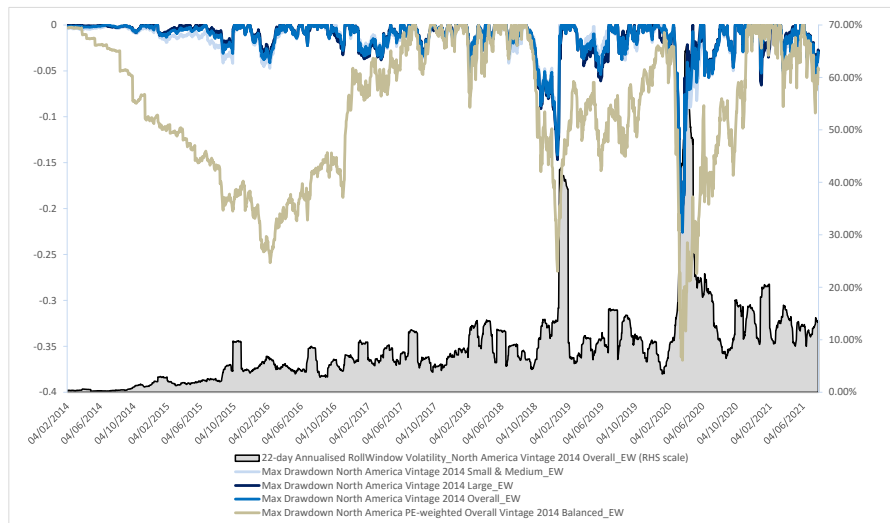
Source: XTAL Strategies calculations on data updated as of July 30, 2021

As highlighted in Figure 4, a rebound from the March 23, 2020 maximum drawdown of -22.57% of the XTAL North America Vintage 2014 Overall equally-weighted Index continued at a sustained pace as volatility readings tapered off across indices of the 2014 vintage series, nearing historical median values. Volatility patterns showed early signs of resurgence across 2014 vintage indices around mid-May 2021. At the end of July, the XTAL North America Vintage 2014 Overall equally-weighted and asset-weighted Indices recorded positive returns to the tune of +64.64% and +63.45%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL North America Vintage 2014 Overall equally-weighted and asset-weighted Indices over corresponding PE-weighted balanced benchmarks stood at +644 and +440 basis points at the end of July 2021, respectively.

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**Figure 4 Vintage 2014, Max Drawdown vs. 22-day Rolling Window Volatility - North America Buyout Equally-weighted Indices and North America PE-weighted Overall Balanced Equally-weighted Index – Feb. 2, 2014-Jul. 30, 2021**

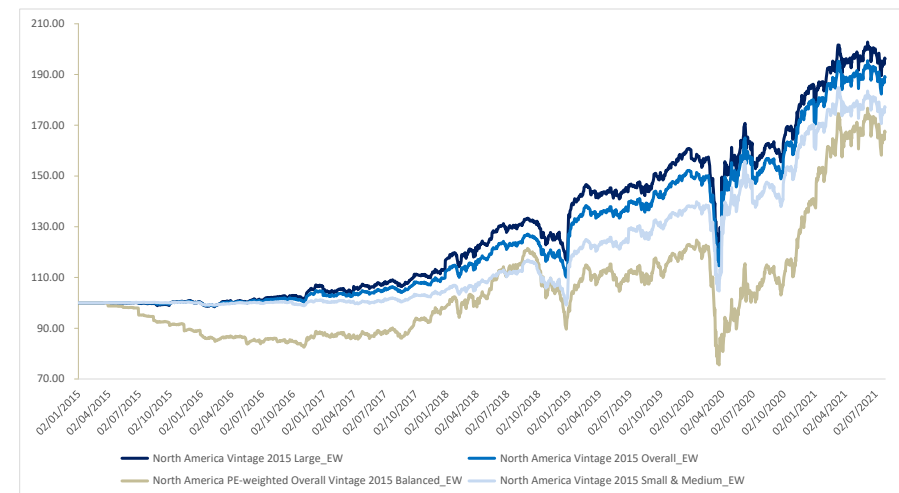


Source: XTAL Strategies

Table 3 below shows that the XTAL North America Vintage 2015 Small & Medium equally-weighted and asset-weighted Indices both posted a solid +9.66% performance year-to-date at the end of July. Similarly, the XTAL North America Vintage 2015 Large equally-weighted and asset-weighted Indices recorded positive returns to the

tune of +10.39% and +9.88% year-to-date at the end of July, respectively. Year-to-date returns of the XTAL North America Vintage 2015 Overall equally-weighted and asset-weighted Indices stood, respectively, at +10.13% and +9.86%. Those readings set against strong year-to-date returns of +20.45% and +20.03% of the North America PE-weighted Overall Vintage 2015 Balanced equally-weighted and asset-weighted Indices, respectively.

**Figure 5 Vintage 2015 - North America Buyout Equally-weighted Indices vs. North America PE-weighted Overall Balanced Equally-weighted Index – Jan. 2, 2015-Jul. 30, 2021**



Source: XTAL Strategies

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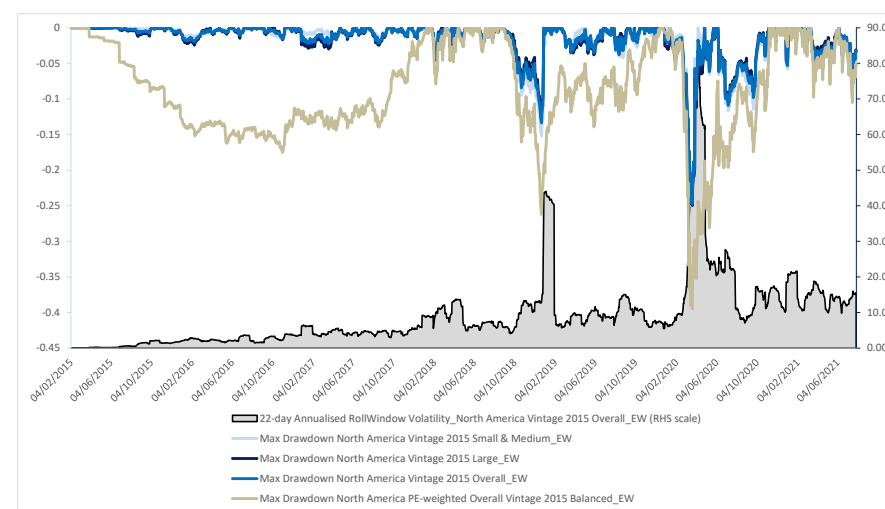
**Table 3 Vintage 2015 - North America Buyout Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	North America Vintage 2015 Small & Medium_EW	North America Vintage 2015 Small & Medium_AW	North America Vintage 2015 Large_EW	North America Vintage 2015 Large_AW	North America Vintage 2015 Overall_EW	North America Vintage 2015 Overall_AW	North America PE-weighted Overall Vintage 2015 Balanced_EW	North America PE-weighted Overall Vintage 2015 Balanced_AW
1 mth	-1.68%	-1.65%	-1.56%	-1.52%	-1.60%	-1.54%	-2.56%	-2.51%
3mths	-0.07%	-0.07%	-0.06%	-0.06%	-0.07%	-0.06%	-0.05%	-0.04%
YTD	9.66%	9.66%	10.39%	9.88%	10.13%	9.86%	20.45%	20.03%
1 yr	23.92%	25.67%	24.12%	25.10%	24.05%	25.16%	54.96%	52.81%
since March 23, 2020	69.18%	72.73%	62.55%	63.27%	64.87%	64.20%	121.48%	115.06%
3 yrs annualized	16.51%	17.09%	14.71%	14.88%	15.34%	15.10%	13.63%	12.23%
since inception annualized	9.07%	9.61%	10.79%	10.73%	10.15%	10.61%	8.14%	7.90%

Source: XTAL Strategies calculations on data updated as of July 30, 2021

Figure 6 shows a sustained rebound from the March 23, 2020 maximum drawdown of -24.75% of the XTAL North America Vintage 2015 Overall equally-weighted Index as volatility readings tapered off across indices of the 2015 vintage series. At the end of July, the XTAL North America Vintage 2015 Overall equally-weighted and asset-weighted Indices recorded positive returns to the tune of +64.87% and +64.20%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL North America Vintage 2015 Overall equally-weighted and asset-weighted Indices over corresponding PE-weighted balanced benchmarks stood at +171 and +287 basis points at the end of July 2021, respectively.

**Figure 6 Vintage 2015, Max Drawdown vs. 22-day Rolling Window Volatility - North America Buyout Equally-weighted Indices and North America PE-weighted Overall Balanced Equally-weighted Index – Feb. 4, 2015-Jul. 30, 2021**



Source: XTAL Strategies

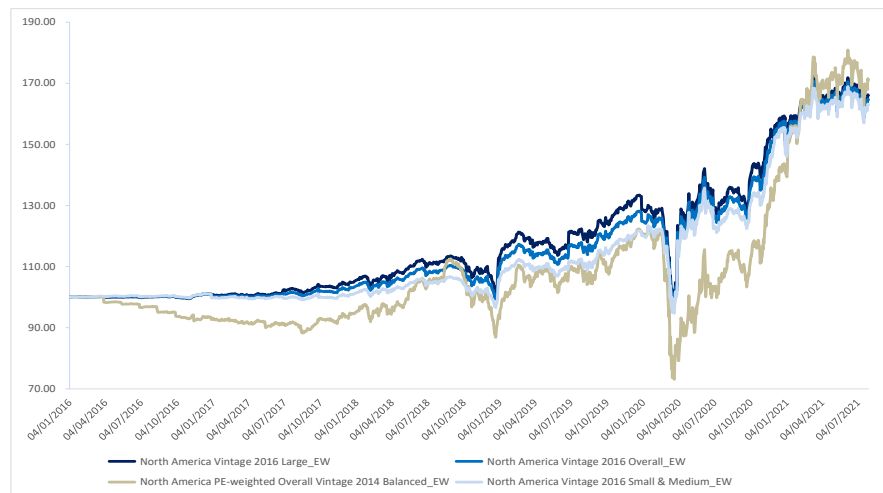
As highlighted in Table 4 below, the XTAL North America Vintage 2016 Small & Medium equally-weighted and asset-weighted Indices posted a solid +10.92% and +11.54% performance year-to-date at the end of July, respectively. The XTAL North America Vintage 2016 Large equally-weighted and asset-weighted Indices recorded positive

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returns to the tune of +9.89% and +9.85% year-to-date at the end of July, respectively. Year-to-date returns at the end of July of the XTAL North America Vintage 2016 Overall equally-weighted and asset-weighted Indices stood, respectively, at +10.35% and +9.99%. Those readings set against strong year-to-date returns to the tune of +21.35% and +21.86% of the North America PE-weighted Overall Vintage 2016 Balanced equally-weighted and asset-weighted Indices, respectively.

**Figure 7 Vintage 2016 - North America Buyout Equally-weighted Indices vs. North America PE-weighted Overall Balanced Equally-weighted Index – Jan. 4, 2016-Jul. 30, 2021**



Source: XTAL Strategies

**Table 4 Vintage 2016 - North America Buyout Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	North America Vintage 2016 Small & Medium_EW	North America Vintage 2016 Small & Medium_AW	North America Vintage 2016 Large_EW	North America Vintage 2016 Large_AW	North America Vintage 2016 Overall_EW	North America Vintage 2016 Overall_AW	North America PE-weighted Overall Vintage 2016 Balanced_EW	North America PE-weighted Overall Vintage 2016 Balanced_AW
1 mth	-1.68%	-1.73%	-1.62%	-1.77%	-1.65%	-1.76%	-2.62%	-2.63%
3mths	-0.08%	-0.08%	-0.07%	-0.08%	-0.07%	-0.08%	-0.05%	-0.05%
YTD	10.92%	11.54%	9.89%	9.85%	10.35%	9.99%	21.35%	21.86%
1 yr	30.02%	29.18%	25.92%	25.95%	27.73%	26.22%	58.59%	57.68%
since March 23, 2020	72.07%	75.18%	71.22%	79.04%	71.60%	78.70%	133.98%	141.32%
3 yrs annualized	15.83%	15.03%	14.31%	14.99%	14.98%	14.99%	17.52%	18.15%
since inception annualized	9.16%	8.68%	9.52%	9.93%	9.36%	9.82%	10.11%	11.07%

Source: XTAL Strategies calculations on data updated as of July 30, 2021

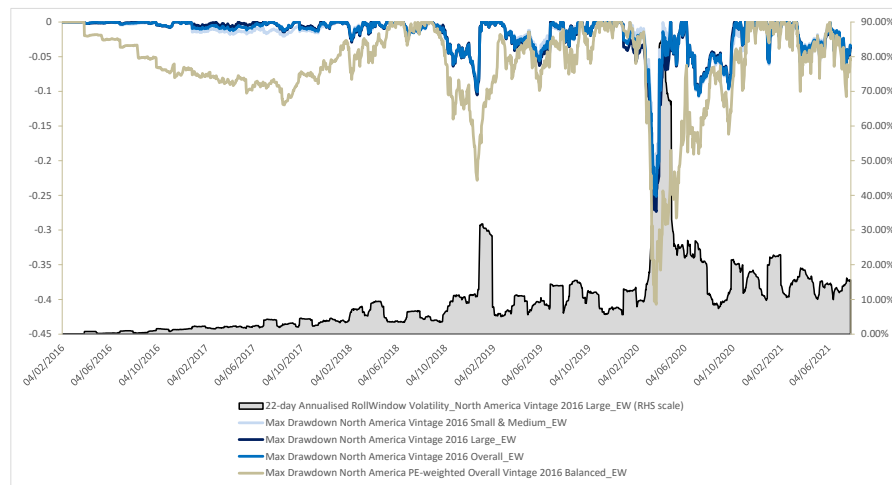
Figure 8 shows a strong rebound from the March 23, 2020 maximum drawdown of -25.15% of the XTAL North America Vintage 2016 Overall equally-weighted Index as volatility readings tapered off across indices of the 2016 vintage series. After nearing historical median values, volatility patterns showed early signs of resurgence across 2016 vintage indices in the second half of February 2021. At the end of July, the XTAL North America Vintage 2016 Overall equally-weighted and asset-weighted Indices recorded positive returns to the tune of +71.60% and +78.70%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL North America Vintage 2016 Overall equally-weighted and asset-weighted indices over corresponding PE-weighted balanced benchmarks stayed in negative territory at -254 and -315 basis points at the end of July 2021, respectively.



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**Figure 8 Vintage 2016, Max Drawdown vs. 22-day Rolling Window Volatility - North America Buyout Equally-weighted Indices and North America PE-weighted Overall Balanced Equally-weighted Index – Feb. 4, 2016-Jul. 30, 2021**

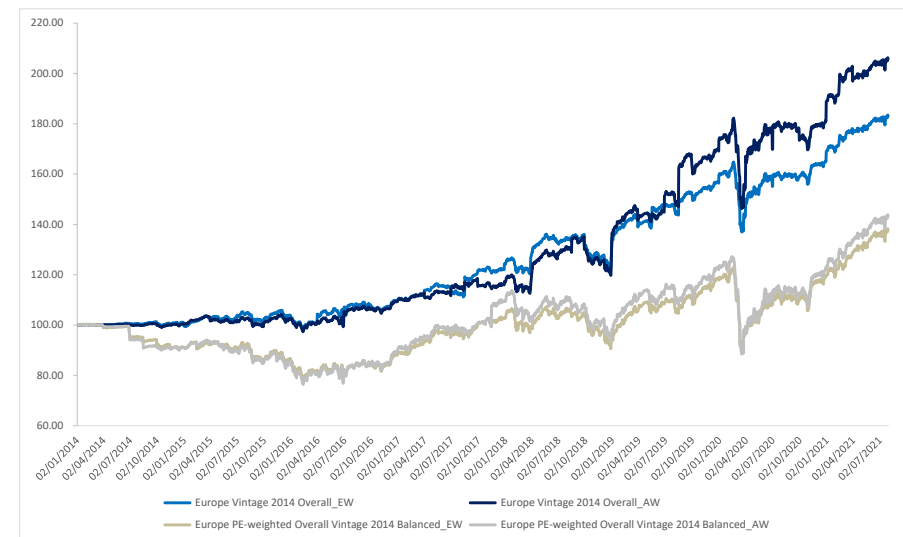


Source: XTAL Strategies

Table 5 below shows that the XTAL Europe Vintage 2014 Overall equally-weighted and asset-weighted Indices posted solid +8.24% and +8.95% performance readings year-to-date at the end of July, respectively. For the same period, the XTAL Europe Overall equally-weighted and asset-weighted Indices underperformed the Europe PE-

weighted Overall Vintage 2014 Balanced benchmarks by 695 and 748 basis points, respectively.

**Figure 9 Vintage 2014 - Europe Buyout Equally-weighted and Asset-weighted Indices vs. Europe PE-weighted Overall Balanced Equally-weighted and Asset-weighted Indices – Jan. 2, 2014-Jul. 30, 2021**



Source: XTAL Strategies

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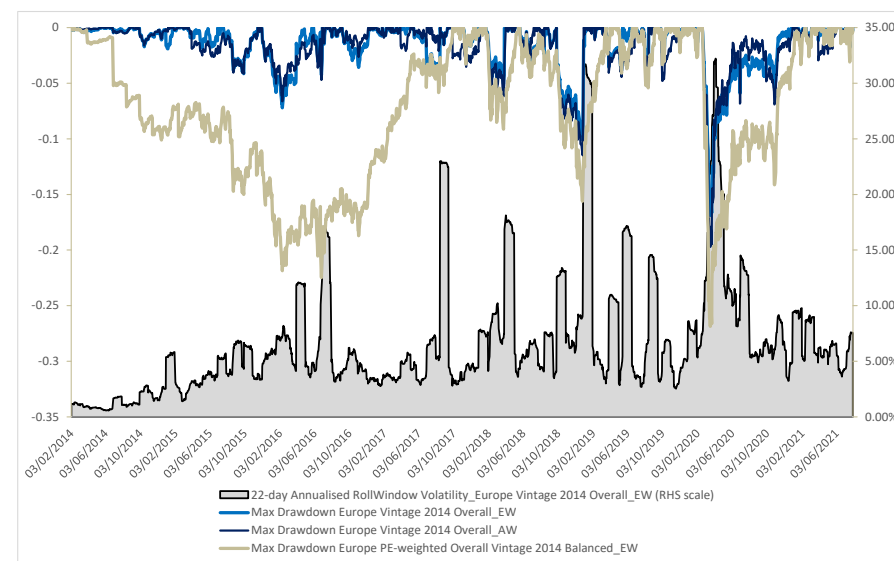
**Table 5 Vintage 2014 - Europe Buyout Overall Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	Europe Vintage 2014 Overall_EW	Europe Vintage 2014 Overall_AW	Europe PE-weighted Overall Vintage 2014 Balanced_EW	Europe PE-weighted Overall Vintage 2014 Balanced_AW
<b>1 mth</b>	1.07%	1.15%	1.79%	1.88%
<b>3mths</b>	3.10%	3.39%	5.45%	5.74%
<b>YTD</b>	8.24%	8.95%	15.19%	16.43%
<b>1 yr</b>	16.06%	16.29%	27.24%	29.37%
<b>since March 23, 2020</b>	33.23%	40.22%	52.57%	61.46%
<b>3 yrs annualized</b>	10.75%	16.22%	8.90%	8.84%
<b>since inception annualized</b>	8.30%	9.99%	4.32%	4.86%

Source: XTAL Strategies calculations on data updated as of July 30, 2021

Figure 10 shows that a rebound from the March 23, 2020 maximum drawdown of -16.89% of the XTAL Europe Vintage 2014 Overall equally-weighted Index continued at a sustained pace until the end of July as volatility readings tapered off, nearing the historical median value. At the end of July, the XTAL Europe Vintage 2014 Overall equally-weighted and asset-weighted Indices recorded positive returns to the tune of +33.23% and +40.22%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL Europe Vintage 2014 Overall equally-weighted and asset-weighted indices over corresponding PE-weighted Balanced benchmarks stood at +184 and +738 basis points at the end of July 2021, respectively.

**Figure 10 Vintage 2014, Max Drawdown vs. 22-day Rolling Window Volatility - Europe Overall Indices and Europe PE-weighted Overall Balanced Equally-weighted Index – Feb. 3, 2014-Jul. 30, 2021**



Source: XTAL Strategies

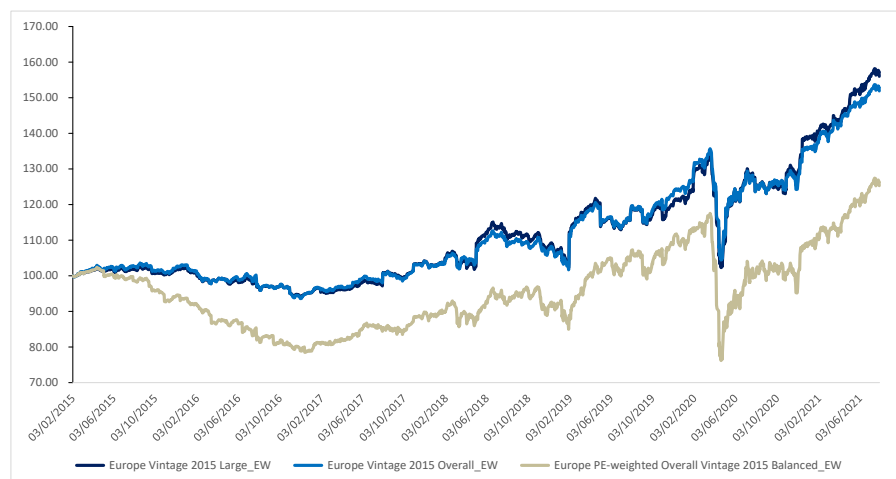
As highlighted in Table 6, the XTAL Europe Vintage 2015 Large equally-weighted and asset-weighted Indices posted solid +13.10% and +12.67% performance readings year-to-date at the end of July, respectively. Year-to-date returns of the XTAL Europe Vintage 2015

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Overall equally-weighted and asset-weighted Indices stood, respectively, at +11.47% and +12.39% at the end of July. Those readings set against strong performance figures to the tune of +16.17% and +18.86% of the Europe PE-weighted Overall Vintage 2015 Balanced equally-weighted and asset-weighted Indices, respectively.

**Figure 11 Vintage 2015 - Europe Buyout Equally-weighted Indices vs. Europe PE-weighted Overall Balanced Equally-weighted Index – Jan. 2, 2015-Jul. 30, 2021**



Source: XTAL Strategies

**Table 6 Vintage 2015 - Europe Buyout Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	Europe Vintage 2015 Large_EW	Europe Vintage 2015 Large_AW	Europe Vintage 2015 Overall_EW	Europe Vintage 2015 Overall_AW	Europe PE-weighted Overall Vintage 2015 Balanced_EW	Europe PE-weighted Overall Vintage 2015 Balanced_AW
<b>1 mth</b>	1.51%	1.47%	1.39%	1.45%	2.09%	2.21%
<b>3mths</b>	4.41%	4.57%	4.02%	4.47%	6.09%	6.52%
<b>YTD</b>	13.10%	12.67%	11.47%	12.39%	16.17%	18.86%
<b>1 yr</b>	28.62%	26.89%	25.15%	26.62%	29.67%	33.39%
<b>since March 23, 2020</b>	54.41%	52.98%	47.09%	52.14%	67.24%	73.98%
<b>3 yrs annualized</b>	12.10%	12.20%	11.77%	12.22%	10.28%	10.88%
<b>since inception annualized</b>	7.24%	7.78%	6.78%	7.71%	3.82%	4.46%

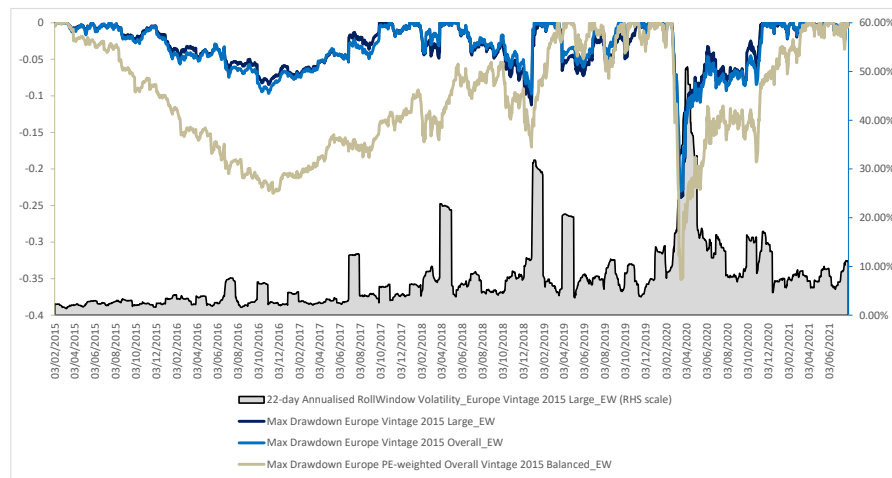
Source: XTAL Strategies calculations on data updated as of July 30, 2021

Figure 12 shows that the XTAL Europe Vintage 2015 Overall equally-weighted Index fully rebounded from the March 23, 2020 maximum drawdown of -23.04%, with 22-day rolling window annualized volatility readings tapering off and hovering around the historical median value, except for a tepid resurgence since early July. At the end of July, the XTAL Europe Vintage 2015 Overall equally-weighted and asset-weighted Indices recorded positive returns to the tune of +47.09% and +52.14%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL Europe Vintage 2015 Overall equally-weighted and asset-weighted indices over corresponding PE-weighted Balanced benchmarks stood at +149 and +134 basis points at the end of July 2021, respectively.

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**Figure 12 Vintage 2015, Max Drawdown vs. 22-day Rolling Window Volatility - Europe Buyout Equally-weighted Indices and Europe PE-weighted Overall Balanced Equally-weighted Index – Feb. 3, 2015-Jul. 30, 2021**

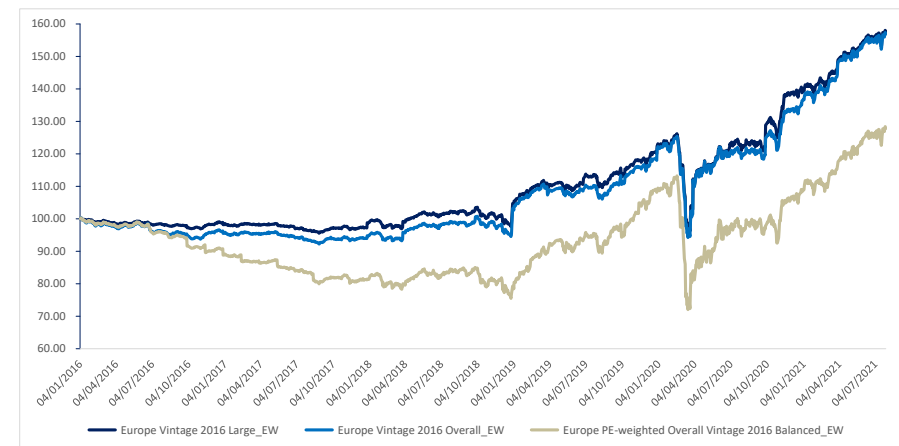


Source: XTAL Strategies

Table 7 below shows that the XTAL Europe Vintage 2016 Large equally-weighted and asset-weighted Indices posted solid +13.48% and +16.54% returns year-to-date at the end of July, respectively. Year-to-date returns of the XTAL Europe Vintage 2016 Overall equally-weighted and asset-weighted Indices stood, respectively, at +15.07% and +16.59% at the end of July. For the same period, the Europe PE-

weighted Overall Vintage 2016 Balanced equally-weighted and asset-weighted Indices recorded strong performance to the tune of +18.01% and +16.89%, respectively.

**Figure 13 Vintage 2016 - Europe Buyout Equally-weighted Indices vs. Europe PE-weighted Overall Balanced Equally-weighted Index – Jan. 4, 2016-Jul. 30, 2021**



Source: XTAL Strategies

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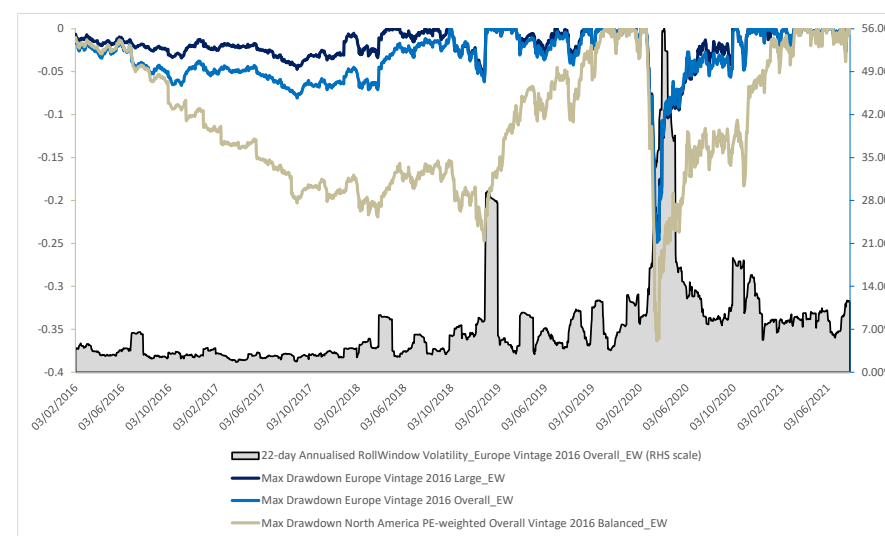
**Table 7 Vintage 2016 - Europe Buyout Indices, Period Returns vs. PE-weighted Overall Balanced Indices**

	Europe Vintage 2016 Large_EW	Europe Vintage 2016 Large_AW	Europe Vintage 2016 Overall_EW	Europe Vintage 2016 Overall_AW	Europe PE-weighted Overall Vintage 2016 Balanced_EW	Europe PE-weighted Overall Vintage 2016 Balanced_AW
<b>1 mth</b>	1.60%	1.72%	1.67%	1.73%	2.19%	2.23%
<b>3mths</b>	4.72%	5.21%	4.87%	5.21%	6.81%	6.86%
<b>YTD</b>	13.48%	16.54%	15.07%	16.59%	18.01%	16.89%
<b>1 yr</b>	30.11%	40.56%	32.32%	40.43%	35.05%	33.33%
<b>since March 23, 2020</b>	63.72%	85.59%	65.89%	85.08%	76.63%	76.15%
<b>3 yrs annualized</b>	15.49%	19.35%	16.54%	19.35%	14.81%	16.65%
<b>since inception annualized</b>	8.49%	10.38%	8.41%	10.31%	4.50%	5.55%

Source: XTAL Strategies calculations on data updated as of July 30, 2021

As highlighted in Figure 14, the XTAL Europe Vintage 2016 Overall equally-weighted Index fully rebounded from the March 23, 2020 maximum drawdown of -24.87%, with 22-day rolling window annualized volatility readings tapering off and nearing the historical median value, except for a tepid resurgence since early July. At the end of July, the XTAL Europe Vintage 2016 Overall equally-weighted and asset-weighted Indices posted strong positive performance to the tune of +65.89% and +85.08%, respectively, since March 23, 2020. Three-year annualized risk premia of the XTAL Europe Vintage 2016 Overall equally-weighted and asset-weighted indices over corresponding PE-weighted Balanced benchmarks stood at +173 and +270 basis points at the end of July 2021, respectively.

**Figure 14 Vintage 2016, Max Drawdown vs. 22-day Rolling Window Volatility - Europe Buyout Equally-weighted Indices and Europe PE-weighted Overall Balanced Equally-weighted Index – Feb. 3, 2016-Jul. 30, 2021**



Source: XTAL Strategies

# XTAL PE Benchmarks Performance Report

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## Methodology

The XTAL Buyout Vintage Index Series accurately represent the daily private market performance in time-weighted fully-diluted terms. They measure the daily change of the diluted total return of a selected group of unlisted buyout funds, clustered in homogenous vintage and investment geo-focus groups of constituents. Returns are calculated using the DARC (Duration Adjusted Return on Capital) time-weighted rate of return methodology. Input data used for the construction of the indices include both contributions and distributions and the Net Asset Value of the index constituents, which is nowcasted and marked to market daily according to a proprietary methodology. The XTAL Buyout Vintage Index Series are published in total return terms in the specified currency. North America returns are calculated in USD. Europe returns are calculated in EUR. A positive index percentage change represents the increase in the total value generated by the commitment in a diversified portfolio of buyout PE funds, given the NAVs of the underlying funds, available at the date of measurement.

The XTAL Strategies PE-weighted Buyout Vintage Balanced Index Series provide long-term exposure to both equity and money markets by investing primarily in a combination of private equity non-invested capital commitment and stock market benchmarks. The Indices reflect investors' true benchmarking experience as they take into account the non-invested capital commitment to the underlying buyout funds, reconciling, on a daily basis, the NAV of the constituent fund with the notional capital committed to the investment vehicle.

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