



Buyout & Growth Equity Index and  
Selected Benchmark Statistics  
June 30, 2018

CAMBRIDGE



**Disclaimer**

Our goal is to provide you with the most accurate and relevant performance information possible; as a result, Cambridge Associates' research organization continually monitors the constantly evolving private investments space and its fund managers. When we discern material changes in the structure of an asset class and/or a fund's investment strategy, it is in the interest of all users of our benchmark statistics that we implement the appropriate classification realignments.

In addition, Cambridge Associates is always working to grow our private investments performance database and ensure that our benchmarks are as representative as possible of investors' institutional-quality opportunity set. As a result we continually add funds to the database (both newly-raised funds and backfill funds) and occasionally we must remove funds that cease reporting. Our private investments performance database is dynamic and will reflect both classification adjustments and changes to the underlying pool of contributing funds. As a result, you may notice quarter to quarter changes in the results of some historical benchmark return analyses.

## Overview

Cambridge Associates' Private Investments Database is one of the most robust collections of institutional quality private fund performance. It contains the historical performance records of over 2,000 fund managers and their over 7,400 funds. In addition, we capture the performance information (gross) of over 80,000 investments underlying our venture capital, growth equity, buyout, subordinated capital and private equity energy funds. This is one of the largest collections of portfolio-level performance information in the world and represents the investments of approximately 76% of these funds on a count basis and 83% on a total commitment basis. This fund and investment-level performance information is drawn from the quarterly and audited annual financial statements of the fund managers and each manager's reported performance numbers are independently recreated from the financial statements and verified by Cambridge Associates.

## Institutional Quality Data

Cambridge Associates strives to include only institutional quality funds in our benchmarks. "Institutional quality" funds, in our definition, tend to meet the following criteria: closed-end funds, commingled funds that invest 3rd party capital (we exclude firms that invest off of their balance sheet, such as a bank's principal investing group or a corporate's venture capital arm), and fund vehicles. This institutional quality screen seeks to provide investors with performance data consistent with their investible opportunity set.

## Sources of Benchmark Data

Our benchmark database utilizes the quarterly unaudited and annual audited fund financial statements produced by the fund managers (GPs) for their Limited Partners (LPs). These documents are provided to Cambridge Associates by the fund managers themselves. Unlike other data providers, Cambridge Associates does not use Freedom of Information Act (FOIA) requests, regulatory filings, manager surveys, or press "scrapings" to obtain information. Our goal is to have a complete historical record of the quarterly cash flows and net asset values for all funds in the benchmarks. We use a number of paths to encourage fund managers to submit their performance data to our database: our clients for whom we provide private investment performance reporting, our research organization's regular meetings with thousands of managers, our special projects designed to enhance existing benchmarks or launch new ones, our exclusive relationships with over ten globally-diverse fund manager associations, and finally, our exclusive relationships with Thomson Reuters and the Institutional Limited Partners Association (ILPA). By leveraging these varied sources and proprietary relationships, Cambridge Associates has constructed a rich and diversified benchmark data set.

## Vintage Year Definition

Vintage year is defined as the legal inception date as noted in a fund's financial statement. This date can usually be found in the first note to the audited financial statements and is prior to the first close or capital call.

## Timing of Final Benchmarks and Data Evolution

The Cambridge Associates' benchmarks are reported on a one-quarter lag from the end of the performance quarter due to the reporting time frame of private investments fund managers.

**Published Data:** When the vast majority of a benchmark group's (organized by asset class, e.g. Venture Capital or Real Estate) performance information is updated for a performance quarter, that benchmark is considered final and the data is "published" via the quarterly benchmark reports.

**Changes to Data:** After a benchmark group is published, any updates to historical data for these funds, which can include adding a fund and its performance history to the database ("backfills") and/or updating past information for an existing fund due to late-arriving, updated, or refined information, would be reflected when that group is published for the next performance quarter.

In addition, Cambridge Associates may change the classification of certain funds; this often driven by the evolution of private investments and the resulting need to introduce new benchmarks or refine our classification scheme. For example, as growth equity emerged as an asset class we reclassified certain venture capital and buyout funds accordingly.

**Survivorship Bias:** In order to track the performance of a fund in our benchmarks, we require the complete set of financial statements from the fund's inception to the most current reporting date. When an active fund stops providing financial statements, we reach out to the manager and make several attempts to encourage them to continue to submit their data. We may, during this communication period, roll forward the fund's last reported quarter's net asset value (NAV) for several quarters. When we are convinced that the manager will not resume reporting to us, the fund's entire performance history is removed from the database.

When fund managers stop reporting before their fund's return history is complete, an element of "survivorship bias" may be introduced to a performance database, which could skew the reported returns upwards if the funds dropping out had poorer returns than those funds that remained. Survivorship bias can affect all investment manager databases, including those for public stock managers and hedge funds. Compared to public stocks and hedge funds, however, the illiquid nature of private investments can actually help limit this survivorship effect. Whereas an underperforming stock manager may simply close up shop or drop out of databases as clients liquidate their positions and fire the manager, private investment partnerships owning illiquid assets continue to exist and require reporting to the limited partners, even if the original manager ceases to exist.

Over the last ten years the number of fund managers that stopped reporting to Cambridge Associates before liquidation represented an average of 0.6% (per year) of the total number of funds in the database during the respective year, and an average of 0.5% (per year) as a percentage of total NAV in the database during that respective year. During that same period the overall number of funds in our database increased by an average of 8% (per year). The performance of the small number of funds that have stopped reporting has been spread amongst all quartiles and has not been concentrated consistently in the poorer performing quartiles.

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## Buyout & Growth Equity: Fund Index Analysis

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## Buyout & Growth Equity: Fund Index Summary: Horizon Pooled Return Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Buyout &amp; Growth Equity Index<sup>1</sup></b>	<b>4.41</b>	<b>7.46</b>	<b>19.13</b>	<b>13.65</b>	<b>14.80</b>	<b>10.00</b>	<b>14.39</b>	<b>12.42</b>	<b>13.65</b>
Bloomberg Barclays Capital Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
MSCI Emerging Markets Index (gross)	-7.86	-6.51	8.59	5.98	5.39	2.60	11.07	8.86	7.13
MSCI Europe Index (US\$) (net)	-1.27	-3.23	5.28	4.22	6.21	2.36	7.07	3.96	7.52
MSCI Europe Index (€) (net)	4.00	-0.48	2.85	2.61	8.51	5.47	6.95	3.59	7.56
MSCI Pacific Index (net)	-1.35	-2.02	9.91	6.37	6.93	3.96	7.75	5.29	2.92
MSCI World Ex US Index (net)	-0.75	-2.77	7.04	4.87	6.23	2.63	7.31	4.46	5.59
MSCI World Index (net)	1.73	0.43	11.09	8.48	9.94	6.26	8.14	5.22	7.23
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60

The index is a horizon calculation based on data compiled from 2,123 buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

Buyout & Growth Equity: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Buyout &amp; Growth Equity Index<sup>1</sup></b>	<b>19.13</b>	<b>13.65</b>	<b>14.80</b>	<b>10.00</b>	<b>14.39</b>	<b>12.42</b>	<b>13.65</b>
<b>mPME Analysis<sup>2</sup></b>							
MSCI EAFE Index (net)	6.92	4.81	6.71	3.70	5.84	4.59	4.77
Value-Add (bps)	1,221	884	809	629	855	782	888
MSCI Europe Index (net)	5.35	4.15	6.63	3.34	5.73	4.41	5.21
Value-Add (bps)	1,378	949	817	666	866	800	845
S&P 500 Index	14.48	11.59	13.74	10.79	9.63	7.95	8.83
Value-Add (bps)	465	206	106	-79	476	447	482
Russell 2000® Index	17.54	10.31	12.58	11.12	10.56	9.17	9.57
Value-Add (bps)	159	334	222	-112	383	325	408
Russell 3000® Index	14.87	11.18	13.62	10.86	9.86	8.20	9.00
Value-Add (bps)	426	246	118	-86	453	421	465
Constructed Index: MSCI World/MSCI All Country World Index <sup>3</sup> (gross)	11.45	8.51	10.22	7.01	8.02	6.54	6.93
Value-Add (bps)	768	513	458	299	637	587	673

The index is a horizon calculation based on data compiled from 2,123 buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup>Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup>CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup>Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout & Growth Equity: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return								
1986 Q1	—	1992 Q3	1.91	1999 Q1	4.45	2005 Q3	6.85	2012 Q1	6.29
1986 Q2	4.54	1992 Q4	8.34	1999 Q2	9.64	2005 Q4	9.07	2012 Q2	-0.68
1986 Q3	-2.66	1993 Q1	2.58	1999 Q3	4.07	2006 Q1	6.30	2012 Q3	3.82
1986 Q4	1.16	1993 Q2	5.51	1999 Q4	17.00	2006 Q2	7.80	2012 Q4	4.13
1987 Q1	4.37	1993 Q3	6.25	2000 Q1	12.36	2006 Q3	3.76	2013 Q1	3.22
1987 Q2	1.24	1993 Q4	8.27	2000 Q2	-0.82	2006 Q4	15.87	2013 Q2	2.59
1987 Q3	1.86	1994 Q1	2.04	2000 Q3	-0.75	2007 Q1	5.17	2013 Q3	5.80
1987 Q4	-1.45	1994 Q2	2.83	2000 Q4	-5.03	2007 Q2	10.58	2013 Q4	7.51
1988 Q1	1.44	1994 Q3	1.98	2001 Q1	-6.06	2007 Q3	3.22	2014 Q1	3.13
1988 Q2	3.53	1994 Q4	6.24	2001 Q2	2.10	2007 Q4	4.37	2014 Q2	4.76
1988 Q3	3.02	1995 Q1	3.96	2001 Q3	-6.30	2008 Q1	-0.51	2014 Q3	-0.38
1988 Q4	3.04	1995 Q2	3.95	2001 Q4	-1.37	2008 Q2	-1.60	2014 Q4	2.13
1989 Q1	1.26	1995 Q3	4.16	2002 Q1	-0.66	2008 Q3	-10.36	2015 Q1	1.45
1989 Q2	3.02	1995 Q4	9.80	2002 Q2	-0.27	2008 Q4	-18.78	2015 Q2	5.37
1989 Q3	1.56	1996 Q1	5.38	2002 Q3	-4.51	2009 Q1	-5.01	2015 Q3	-1.04
1989 Q4	1.45	1996 Q2	6.66	2002 Q4	1.43	2009 Q2	6.75	2015 Q4	2.61
1990 Q1	-0.16	1996 Q3	6.40	2003 Q1	0.01	2009 Q3	7.57	2016 Q1	1.50
1990 Q2	5.90	1996 Q4	8.60	2003 Q2	7.18	2009 Q4	7.19	2016 Q2	2.55
1990 Q3	-0.25	1997 Q1	0.61	2003 Q3	4.71	2010 Q1	2.77	2016 Q3	3.98
1990 Q4	1.52	1997 Q2	10.23	2003 Q4	10.74	2010 Q2	0.23	2016 Q4	2.64
1991 Q1	2.02	1997 Q3	6.37	2004 Q1	2.54	2010 Q3	7.37	2017 Q1	4.28
1991 Q2	0.50	1997 Q4	8.71	2004 Q2	4.06	2010 Q4	9.35	2017 Q2	5.88
1991 Q3	3.15	1998 Q1	9.07	2004 Q3	3.18	2011 Q1	5.21	2017 Q3	4.83
1991 Q4	4.04	1998 Q2	5.60	2004 Q4	16.63	2011 Q2	5.17	2017 Q4	5.48
1992 Q1	0.93	1998 Q3	-5.11	2005 Q1	1.14	2011 Q3	-6.45	2018 Q1	2.86
1992 Q2	1.74	1998 Q4	6.72	2005 Q2	7.48	2011 Q4	3.17	2018 Q2	4.41

The index is a horizon calculation based on data compiled from 2,123 buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout & Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns		One Year Rolling Returns	
Years	Horizon Return (%)	One Year Ended	Horizon Return (%)
1 Year	19.13	6/30/2018	19.13
2 Years	18.53	6/30/2017	17.99
3 Years	13.65	6/30/2016	5.54
4 Years	12.15	6/30/2015	8.57
5 Years	14.80	6/30/2014	23.26
6 Years	14.80	6/30/2013	14.81
7 Years	12.27	6/30/2012	1.83
8 Years	14.89	6/30/2011	29.86
9 Years	15.36	6/30/2010	18.49
10 Years	10.00	6/30/2009	-25.44
11 Years	9.55	6/30/2008	4.80
12 Years	11.45	6/30/2007	39.91
13 Years	12.74	6/30/2006	33.70
14 Years	13.78	6/30/2005	30.65
15 Years	14.39	6/30/2004	23.74

The index is a horizon calculation based on data compiled from 2,123 buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.



## Buyout & Growth Equity: Fund Since Inception Analysis

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### Buyout & Growth Equity: Since Inception IRR & Multiples by Fund Vintage Year

Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	26.07	17.80	20.31	21.20	32.75	9.50	27.82	2.37	0.00	2.37	28
1994	24.51	16.02	10.01	15.31	25.53	2.74	17.61	2.48	0.00	2.48	36
1995	21.24	14.88	10.88	17.47	28.60	-2.08	24.53	1.97	0.00	1.97	46
1996	11.19	9.52	8.49	9.35	13.45	-1.79	19.38	1.63	0.00	1.63	52
1997	9.40	9.81	9.48	9.72	16.38	0.65	19.35	1.60	0.00	1.60	85
1998	8.60	11.29	10.27	13.04	18.97	4.86	11.07	1.53	0.02	1.55	81
1999	15.03	13.27	12.15	12.98	21.70	4.20	15.23	1.89	0.01	1.90	77
2000	18.33	16.22	15.30	16.50	24.32	7.80	15.79	1.97	0.03	2.01	113
2001	23.93	20.36	18.27	20.69	31.52	11.36	17.56	2.12	0.06	2.18	46
2002	18.79	15.29	16.51	17.40	24.62	6.19	27.67	1.95	0.04	1.99	56
2003	16.33	16.98	14.26	17.28	26.53	6.22	17.49	1.78	0.05	1.83	51
2004	11.06	16.30	9.58	13.60	15.26	5.75	29.02	1.63	0.09	1.72	101
2005	7.55	8.20	8.06	9.88	14.81	2.17	14.88	1.40	0.12	1.52	150
2006	7.96	8.76	9.06	10.07	14.60	3.85	13.60	1.30	0.25	1.56	139
2007	11.41	8.61	9.14	9.27	14.97	3.92	12.93	1.24	0.43	1.68	169
2008	13.50	11.22	11.39	11.79	16.85	5.22	14.84	1.20	0.53	1.73	110
2009	17.42	14.75	14.37	15.24	22.43	8.06	12.51	1.03	0.94	1.97	52
2010	14.55	14.30	13.81	15.64	21.92	5.19	15.07	0.73	0.95	1.67	61
2011	16.66	14.15	13.72	14.22	19.81	7.19	10.85	0.63	1.01	1.64	103
2012	17.50	14.44	14.60	15.46	19.59	8.37	10.02	0.39	1.15	1.54	91
2013	16.17	14.64	14.04	17.49	21.45	9.00	12.54	0.23	1.17	1.40	89
2014	21.12	18.67	17.12	19.56	22.66	9.96	13.81	0.17	1.23	1.40	97
2015	15.19	8.33	9.25	14.38	21.19	-3.73	24.79	0.06	1.12	1.18	93
2016	7.26	5.03	-0.13	13.19	12.17	-12.31	40.01	0.01	1.05	1.06	68

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark	MSCI EAFE Index (Net)		MSCI Europe Index (Net)		CA Benchmark	MSCI EAFE Index (Net)	MSCI Europe Index (Net)	CA Benchmark	MSCI EAFE Index (Net)	MSCI Europe Index (Net)
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	28	26.07	6.88	1,920	15.13	1,094	2.37	1.25	1.58	2.37	1.25	1.58
1994	36	24.51	6.70	1,780	12.70	1,181	2.48	1.27	1.53	2.48	1.27	1.53
1995	46	21.24	5.32	1,593	10.26	1,098	1.97	1.19	1.37	1.97	1.19	1.37
1996	52	11.19	3.86	733	5.11	608	1.63	1.19	1.26	1.63	1.19	1.26
1997	85	9.40	3.34	606	3.63	577	1.60	1.18	1.20	1.60	1.18	1.20
1998	81	8.60	3.91	469	4.21	439	1.55	1.21	1.23	1.53	1.20	1.21
1999	77	15.03	6.56	847	7.12	791	1.90	1.30	1.33	1.89	1.30	1.33
2000	113	18.33	9.77	856	10.23	810	2.01	1.39	1.41	1.97	1.37	1.39
2001	46	23.93	10.98	1,295	11.46	1,247	2.18	1.39	1.41	2.12	1.37	1.39
2002	56	18.79	8.06	1,073	8.52	1,027	1.99	1.33	1.35	1.95	1.31	1.32
2003	51	16.33	5.05	1,128	5.45	1,088	1.83	1.21	1.23	1.78	1.18	1.20
2004	101	11.06	2.49	857	2.60	846	1.72	1.13	1.14	1.63	1.08	1.08
2005	150	7.55	1.62	594	1.50	606	1.52	1.09	1.09	1.40	1.01	1.01
2006	139	7.96	2.37	559	2.17	579	1.56	1.14	1.13	1.30	0.97	0.97
2007	169	11.41	5.00	641	4.88	653	1.68	1.25	1.24	1.24	0.97	0.97
2008	110	13.50	6.39	712	6.33	717	1.73	1.29	1.28	1.20	0.94	0.94
2009	52	17.42	6.27	1,115	5.97	1,145	1.97	1.27	1.25	1.03	0.73	0.73
2010	61	14.55	6.42	813	6.04	851	1.67	1.25	1.23	0.73	0.59	0.58
2011	103	16.66	6.00	1,065	5.34	1,131	1.64	1.20	1.17	0.63	0.49	0.48
2012	91	17.50	5.65	1,185	4.74	1,276	1.54	1.15	1.12	0.39	0.31	0.31
2013	89	16.17	6.29	988	5.32	1,085	1.40	1.14	1.12	0.23	0.20	0.20
2014	97	21.12	7.56	1,356	6.66	1,446	1.40	1.13	1.11	0.17	0.15	0.15
2015	93	15.19	8.96	624	8.19	700	1.18	1.10	1.09	0.06	0.06	0.06
2016	68	7.26	7.71	-45	6.76	50	1.06	1.07	1.06	0.01	0.01	0.01

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)				Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)			
		CA Benchmark	S&P 500 Index		Russell 2000® Index		CA Benchmark	S&P 500 Index	Russell 2000® Index	CA Benchmark	S&P 500 Index	Russell 2000® Index
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	28	26.07	19.83	625	11.98	1,409	2.37	1.77	1.48	2.37	1.77	1.47
1994	36	24.51	16.32	819	10.07	1,444	2.48	1.66	1.44	2.48	1.66	1.44
1995	46	21.24	13.34	791	8.25	1,299	1.97	1.46	1.32	1.97	1.46	1.32
1996	52	11.19	5.09	610	7.01	418	1.63	1.24	1.38	1.63	1.24	1.38
1997	85	9.40	1.69	771	7.19	221	1.60	1.09	1.41	1.60	1.08	1.41
1998	81	8.60	1.79	681	7.39	121	1.55	1.09	1.42	1.53	1.07	1.40
1999	77	15.03	2.97	1,206	8.33	670	1.90	1.13	1.39	1.89	1.13	1.38
2000	113	18.33	5.75	1,258	9.74	858	2.01	1.24	1.41	1.97	1.22	1.39
2001	46	23.93	7.44	1,650	10.11	1,382	2.18	1.31	1.41	2.12	1.27	1.38
2002	56	18.79	6.84	1,195	8.34	1,045	1.99	1.34	1.41	1.95	1.30	1.37
2003	51	16.33	6.08	1,025	6.67	966	1.83	1.31	1.34	1.78	1.26	1.29
2004	101	11.06	5.88	518	6.27	479	1.72	1.37	1.39	1.63	1.27	1.30
2005	150	7.55	6.89	66	7.21	34	1.52	1.49	1.51	1.40	1.35	1.37
2006	139	7.96	8.56	-60	8.79	-83	1.56	1.62	1.63	1.30	1.34	1.35
2007	169	11.41	12.21	-80	12.04	-63	1.68	1.73	1.71	1.24	1.30	1.28
2008	110	13.50	14.05	-55	13.58	-8	1.73	1.76	1.72	1.20	1.22	1.19
2009	52	17.42	13.94	349	12.99	443	1.97	1.70	1.64	1.03	0.94	0.90
2010	61	14.55	13.86	69	13.00	155	1.67	1.62	1.58	0.73	0.73	0.70
2011	103	16.66	13.13	352	12.48	418	1.64	1.47	1.45	0.63	0.58	0.56
2012	91	17.50	12.52	498	12.39	511	1.54	1.36	1.36	0.39	0.36	0.35
2013	89	16.17	12.59	358	13.21	296	1.40	1.30	1.31	0.23	0.22	0.22
2014	97	21.12	13.43	769	14.90	622	1.40	1.24	1.27	0.17	0.16	0.16
2015	93	15.19	14.59	60	17.86	-267	1.18	1.17	1.21	0.06	0.06	0.06
2016	68	7.26	14.13	-688	17.75	-1,049	1.06	1.13	1.16	0.01	0.01	0.01

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage year sample may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)			
		CA Benchmark		Russell 3000® Index		MSCI All Country World Index (gross)		CA Benchmark		Russell 3000® Index	
		IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	TVPI	mPME TVPI	DPI
1993	28	26.07	18.62	745	11.74	1,434	2.37	1.73	1.44	2.37	1.72
1994	36	24.51	15.44	906	10.39	1,411	2.48	1.63	1.42	2.48	1.63
1995	46	21.24	12.62	862	8.48	1,277	1.97	1.44	1.30	1.97	1.44
1996	52	11.19	5.45	574	4.53	666	1.63	1.26	1.22	1.63	1.26
1997	85	9.40	2.49	691	2.87	653	1.60	1.13	1.15	1.60	1.13
1998	81	8.60	2.57	603	3.30	530	1.55	1.14	1.18	1.53	1.12
1999	77	15.03	3.75	1,128	5.36	967	1.90	1.17	1.25	1.89	1.16
2000	113	18.33	6.43	1,189	8.52	980	2.01	1.27	1.35	1.97	1.25
2001	46	23.93	8.04	1,589	10.00	1,393	2.18	1.34	1.39	2.12	1.30
2002	56	18.79	7.29	1,150	8.25	1,054	1.99	1.36	1.37	1.95	1.32
2003	51	16.33	6.37	995	6.34	999	1.83	1.33	1.30	1.78	1.27
2004	101	11.06	6.11	495	4.81	625	1.72	1.38	1.28	1.63	1.29
2005	150	7.55	7.08	47	4.53	302	1.52	1.51	1.29	1.40	1.36
2006	139	7.96	8.73	-77	5.47	249	1.56	1.63	1.36	1.30	1.35
2007	169	11.41	12.30	-89	8.27	314	1.68	1.73	1.44	1.24	1.30
2008	110	13.50	14.09	-59	9.77	373	1.73	1.76	1.48	1.20	1.22
2009	52	17.42	13.83	360	9.70	772	1.97	1.69	1.45	1.03	0.94
2010	61	14.55	13.75	80	9.81	474	1.67	1.61	1.41	0.73	0.72
2011	103	16.66	12.99	367	9.54	712	1.64	1.47	1.33	0.63	0.58
2012	91	17.50	12.39	511	9.29	821	1.54	1.36	1.26	0.39	0.36
2013	89	16.17	12.53	364	9.86	631	1.40	1.30	1.23	0.23	0.22
2014	97	21.12	13.50	762	11.04	1,008	1.40	1.24	1.19	0.17	0.16
2015	93	15.19	14.94	25	12.38	282	1.18	1.17	1.14	0.06	0.06
2016	68	7.26	14.57	-731	11.36	-410	1.06	1.13	1.10	0.01	0.01

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Buyout & Growth Equity: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.37	2.12	2.02	2.75	1.56	28
1994	2.48	1.89	1.55	2.44	1.22	36
1995	1.97	1.75	1.56	2.18	0.89	46
1996	1.63	1.56	1.51	1.89	0.91	52
1997	1.60	1.56	1.62	1.97	1.03	85
1998	1.55	1.88	1.61	2.07	1.29	81
1999	1.90	1.79	1.58	2.23	1.18	77
2000	2.01	1.95	1.93	2.42	1.43	113
2001	2.18	1.99	1.94	2.41	1.52	46
2002	1.99	1.99	1.92	2.39	1.48	56
2003	1.83	1.84	1.78	2.16	1.38	51
2004	1.72	1.78	1.59	1.97	1.30	101
2005	1.52	1.65	1.52	1.99	1.12	150
2006	1.56	1.69	1.56	1.96	1.21	139
2007	1.68	1.55	1.53	1.87	1.22	169
2008	1.73	1.65	1.61	1.92	1.30	110
2009	1.97	1.86	1.80	2.32	1.41	52
2010	1.67	1.76	1.61	2.03	1.29	61
2011	1.64	1.57	1.52	1.82	1.29	103
2012	1.54	1.49	1.46	1.63	1.28	91
2013	1.40	1.44	1.35	1.53	1.20	89
2014	1.40	1.37	1.29	1.47	1.16	97
2015	1.18	1.13	1.11	1.26	0.95	93
2016	1.06	1.05	1.00	1.11	0.90	68

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Buyout & Growth Equity: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.37	2.12	2.02	2.75	1.56	28
1994	2.48	1.89	1.55	2.44	1.22	36
1995	1.97	1.75	1.56	2.18	0.89	46
1996	1.63	1.56	1.51	1.89	0.91	52
1997	1.60	1.56	1.60	1.96	1.03	85
1998	1.53	1.87	1.61	2.07	1.28	81
1999	1.89	1.78	1.57	2.21	1.12	77
2000	1.97	1.88	1.87	2.25	1.42	113
2001	2.12	1.95	1.94	2.36	1.50	46
2002	1.95	1.92	1.84	2.39	1.35	56
2003	1.78	1.79	1.74	2.12	1.19	51
2004	1.63	1.63	1.48	1.84	1.22	101
2005	1.40	1.50	1.37	1.82	0.97	150
2006	1.30	1.41	1.34	1.71	0.96	139
2007	1.24	1.16	1.20	1.50	0.68	169
2008	1.20	1.08	1.04	1.45	0.65	110
2009	1.03	0.92	0.83	1.42	0.44	52
2010	0.73	0.75	0.67	1.11	0.25	61
2011	0.63	0.58	0.48	0.92	0.16	103
2012	0.39	0.39	0.31	0.58	0.12	91
2013	0.23	0.31	0.18	0.48	0.02	89
2014	0.17	0.17	0.08	0.23	0.00	97
2015	0.06	0.06	0.00	0.04	0.00	93
2016	0.01	0.03	0.00	0.00	0.00	68

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Buyout & Growth Equity: Residual Value to Paid In Capital Multiple (RVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	0.00	0.00	0.00	28
1994	0.00	0.00	0.00	0.00	0.00	36
1995	0.00	0.00	0.00	0.00	0.00	46
1996	0.00	0.00	0.00	0.00	0.00	52
1997	0.00	0.00	0.00	0.00	0.00	85
1998	0.02	0.02	0.00	0.00	0.00	81
1999	0.01	0.01	0.00	0.00	0.00	77
2000	0.03	0.07	0.00	0.02	0.00	113
2001	0.06	0.04	0.00	0.02	0.00	46
2002	0.04	0.07	0.00	0.07	0.00	56
2003	0.05	0.06	0.00	0.04	0.00	51
2004	0.09	0.15	0.04	0.15	0.00	101
2005	0.12	0.15	0.08	0.19	0.01	150
2006	0.25	0.28	0.19	0.40	0.04	139
2007	0.43	0.40	0.27	0.51	0.11	169
2008	0.53	0.57	0.54	0.76	0.29	110
2009	0.94	0.93	0.85	1.23	0.47	52
2010	0.95	1.02	0.81	1.14	0.63	61
2011	1.01	0.99	0.96	1.20	0.72	103
2012	1.15	1.10	1.14	1.26	0.92	91
2013	1.17	1.12	1.12	1.27	0.93	89
2014	1.23	1.20	1.17	1.30	1.05	97
2015	1.12	1.06	1.07	1.22	0.90	93
2016	1.05	1.02	0.99	1.09	0.89	68

Notes: Based on data compiled from 1,994 buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## US Buyout & Growth Equity: Fund Index Analysis

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## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout & Growth Equity: Fund Index Summary: Horizon Pooled Return Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>US Buyout &amp; Growth Equity Index<sup>1</sup></b>	<b>5.78</b>	<b>9.15</b>	<b>20.41</b>	<b>13.99</b>	<b>16.13</b>	<b>11.67</b>	<b>14.62</b>	<b>12.24</b>	<b>13.92</b>
Bloomberg Barclays Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60
Wilshire 5000 Total Market Index	3.83	3.04	14.66	11.85	13.36	10.23	9.73	6.86	9.65

The index is a horizon calculation based on data compiled from 1,105 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

US Buyout & Growth Equity: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>US Buyout &amp; Growth Equity Index<sup>1</sup></b>	<b>20.41</b>	<b>13.99</b>	<b>16.13</b>	<b>11.67</b>	<b>14.62</b>	<b>12.24</b>	<b>13.92</b>
<b>mPME Analysis<sup>2</sup></b>							
Russell 2000® Index	17.56	10.54	12.73	11.00	10.50	8.89	9.41
Value-Add (bps)	285	346	340	67	413	335	451
Russell 2500™ Index	16.29	9.88	12.67	11.26	11.10	9.71	10.35
Value-Add (bps)	412	411	346	41	352	253	357
Russell 3000® Index	14.89	11.31	13.69	10.66	9.66	7.79	8.82
Value-Add (bps)	552	268	244	102	496	445	510
Russell Midcap® Index	12.43	9.28	12.82	10.85	11.24	9.67	10.48
Value-Add (bps)	798	471	331	82	338	257	345
S&P 500 Index	14.50	11.70	13.79	10.58	9.40	7.52	8.65
Value-Add (bps)	591	229	234	109	522	472	527
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>3</sup>	11.47	8.68	10.32	6.83	8.05	6.33	6.83
Value-Add (bps)	894	531	581	484	657	590	709

The index is a horizon calculation based on data compiled from 1,105 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup> CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup> Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout & Growth Equity: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return								
1986 Q1	—	1992 Q3	2.70	1999 Q1	5.85	2005 Q3	7.50	2012 Q1	5.55
1986 Q2	4.54	1992 Q4	9.80	1999 Q2	10.47	2005 Q4	7.83	2012 Q2	0.26
1986 Q3	-2.66	1993 Q1	2.83	1999 Q3	3.48	2006 Q1	5.60	2012 Q3	4.06
1986 Q4	1.16	1993 Q2	6.08	1999 Q4	19.11	2006 Q2	3.50	2012 Q4	3.79
1987 Q1	4.37	1993 Q3	6.68	2000 Q1	14.83	2006 Q3	3.70	2013 Q1	4.86
1987 Q2	1.29	1993 Q4	7.20	2000 Q2	-1.51	2006 Q4	12.57	2013 Q2	3.38
1987 Q3	1.97	1994 Q1	1.30	2000 Q3	-0.18	2007 Q1	5.70	2013 Q3	5.66
1987 Q4	-2.12	1994 Q2	3.19	2000 Q4	-7.02	2007 Q2	7.81	2013 Q4	7.50
1988 Q1	2.59	1994 Q3	1.78	2001 Q1	-6.37	2007 Q3	1.09	2014 Q1	3.26
1988 Q2	4.29	1994 Q4	6.94	2001 Q2	3.03	2007 Q4	2.77	2014 Q2	4.82
1988 Q3	4.18	1995 Q1	3.86	2001 Q3	-8.98	2008 Q1	-2.63	2014 Q3	1.64
1988 Q4	2.10	1995 Q2	4.05	2001 Q4	-0.12	2008 Q2	-0.18	2014 Q4	3.26
1989 Q1	1.67	1995 Q3	4.29	2002 Q1	-0.71	2008 Q3	-6.65	2015 Q1	3.36
1989 Q2	3.97	1995 Q4	11.27	2002 Q2	-2.92	2008 Q4	-16.65	2015 Q2	4.49
1989 Q3	1.49	1996 Q1	6.10	2002 Q3	-5.11	2009 Q1	-3.70	2015 Q3	-0.19
1989 Q4	1.46	1996 Q2	6.92	2002 Q4	-0.06	2009 Q2	4.76	2015 Q4	1.92
1990 Q1	-0.21	1996 Q3	6.67	2003 Q1	-0.33	2009 Q3	6.42	2016 Q1	0.48
1990 Q2	5.64	1996 Q4	6.66	2003 Q2	6.98	2009 Q4	6.25	2016 Q2	3.56
1990 Q3	-0.41	1997 Q1	0.85	2003 Q3	5.73	2010 Q1	4.91	2016 Q3	3.89
1990 Q4	1.22	1997 Q2	11.58	2003 Q4	9.40	2010 Q2	2.03	2016 Q4	3.75
1991 Q1	3.12	1997 Q3	7.39	2004 Q1	3.07	2010 Q3	4.89	2017 Q1	4.14
1991 Q2	1.12	1997 Q4	9.30	2004 Q2	3.43	2010 Q4	9.42	2017 Q2	4.44
1991 Q3	2.93	1998 Q1	10.61	2004 Q3	2.09	2011 Q1	5.24	2017 Q3	4.29
1991 Q4	3.93	1998 Q2	4.92	2004 Q4	15.30	2011 Q2	4.72	2017 Q4	5.41
1992 Q1	1.75	1998 Q3	-6.84	2005 Q1	0.99	2011 Q3	-4.43	2018 Q1	3.16
1992 Q2	1.18	1998 Q4	8.16	2005 Q2	8.22	2011 Q4	5.02	2018 Q2	5.78

The index is a horizon calculation based on data compiled from 1,105 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout & Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns				One Year Rolling Returns			
Years	Horizon Return (%)	Years	Horizon Return (%)	One Year Ended	Horizon Return (%)	One Year Ended	Horizon Return (%)
1 Year	20.41	16 Years	13.77	6/30/2018	20.41	6/30/2003	1.76
2 Years	18.90	17 Years	12.17	6/30/2017	17.54	6/30/2002	-12.27
3 Years	13.99	18 Years	10.92	6/30/2016	5.76	6/30/2001	-10.37
4 Years	13.78	19 Years	12.01	6/30/2015	13.24	6/30/2000	38.91
5 Years	16.13	20 Years	12.24	6/30/2014	23.48	6/30/1999	18.75
6 Years	16.39	21 Years	12.88	6/30/2013	17.29	6/30/1998	36.22
7 Years	14.31	22 Years	13.26	6/30/2012	6.25	6/30/1997	28.03
8 Years	16.28	23 Years	13.70	6/30/2011	26.43	6/30/1996	31.55
9 Years	16.94	24 Years	13.79	6/30/2010	20.98	6/30/1995	17.64
10 Years	11.67	25 Years	13.92	6/30/2009	-20.99	6/30/1994	19.48
11 Years	10.61			6/30/2008	0.65		
12 Years	12.15			6/30/2007	33.03		
13 Years	13.08			6/30/2006	26.90		
14 Years	14.02			6/30/2005	28.19		
15 Years	14.62			6/30/2004	23.34		

The index is a horizon calculation based on data compiled from 1,105 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.



## US Buyout & Growth Equity: Fund Since Inception Analysis

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### US Buyout & Growth Equity: Since Inception IRR & Multiples by Fund Vintage Year

Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	27.58	19.74	25.28	24.67	34.24	12.73	32.17	2.43	0.00	2.43	20
1994	25.52	13.92	9.67	14.57	18.92	2.33	16.11	2.58	0.00	2.58	15
1995	21.79	18.50	15.36	22.44	33.17	-0.49	25.71	2.00	0.00	2.00	26
1996	10.42	8.19	7.34	8.13	12.30	-0.54	18.84	1.60	0.00	1.60	28
1997	7.11	6.68	6.92	5.72	12.67	-1.04	15.40	1.44	0.00	1.45	41
1998	7.18	9.84	9.63	10.28	14.65	4.32	9.94	1.43	0.03	1.45	48
1999	14.63	10.76	12.04	11.27	17.68	4.70	12.16	1.89	0.01	1.90	43
2000	15.06	13.17	13.65	13.02	21.20	7.55	12.30	1.80	0.03	1.84	67
2001	20.14	18.18	15.48	17.04	30.08	11.36	16.52	2.13	0.11	2.24	22
2002	15.92	12.08	16.11	14.22	22.43	5.57	25.27	1.84	0.06	1.89	27
2003	14.61	13.79	11.63	12.92	16.63	3.74	13.56	1.90	0.07	1.97	26
2004	10.29	10.63	10.08	10.60	13.32	7.66	7.02	1.63	0.09	1.71	56
2005	8.93	8.42	9.93	10.69	15.52	4.45	14.60	1.53	0.14	1.67	77
2006	9.30	12.29	12.17	12.09	15.87	7.48	14.21	1.38	0.31	1.69	60
2007	12.89	12.33	12.68	12.18	19.41	7.78	11.64	1.24	0.51	1.75	74
2008	16.26	16.77	14.22	16.03	22.78	9.92	10.57	1.33	0.52	1.85	52
2009	21.15	19.29	21.21	19.55	25.06	11.06	12.71	1.21	0.99	2.20	25
2010	21.66	24.31	20.18	23.41	24.65	14.87	17.85	1.07	1.11	2.19	20
2011	17.93	17.18	15.47	17.15	22.31	9.88	10.15	0.67	1.00	1.67	55
2012	18.96	17.57	16.10	18.91	22.38	11.74	9.66	0.32	1.17	1.49	38
2013	14.42	14.30	14.16	17.52	19.56	9.61	13.41	0.22	1.14	1.37	49
2014	22.21	19.64	17.72	19.94	24.29	9.36	14.96	0.19	1.24	1.43	57
2015	15.70	8.99	7.50	15.10	21.19	-3.73	26.14	0.06	1.12	1.18	53
2016	8.01	8.00	0.63	13.58	9.83	-9.70	47.63	0.02	1.06	1.08	40

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark	Russell 2000® Index		Russell 2500™ Index		CA Benchmark	Russell 2000® Index	Russell 2500™ Index	CA Benchmark	Russell 2000® Index	Russell 2500™ Index
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	20	27.58	11.85	1,573	14.36	1,322	2.43	1.46	1.59	2.43	1.46	1.59
1994	15	25.52	9.34	1,618	11.86	1,366	2.58	1.45	1.61	2.58	1.45	1.61
1995	26	21.79	8.29	1,350	10.89	1,089	2.00	1.33	1.45	2.00	1.33	1.45
1996	28	10.42	6.86	356	8.92	150	1.60	1.39	1.53	1.60	1.39	1.53
1997	41	7.11	7.33	-23	9.10	-200	1.45	1.45	1.58	1.44	1.44	1.57
1998	48	7.18	7.44	-26	8.96	-178	1.45	1.45	1.56	1.43	1.42	1.52
1999	43	14.63	8.29	635	9.42	521	1.90	1.39	1.46	1.89	1.39	1.45
2000	67	15.06	9.39	567	10.27	479	1.84	1.42	1.47	1.80	1.40	1.45
2001	22	20.14	8.73	1,141	9.59	1,055	2.24	1.45	1.50	2.13	1.38	1.44
2002	27	15.92	8.26	766	9.16	676	1.89	1.44	1.50	1.84	1.37	1.43
2003	26	14.61	6.35	826	7.16	745	1.97	1.38	1.44	1.90	1.31	1.37
2004	56	10.29	6.17	412	6.99	330	1.71	1.41	1.47	1.63	1.32	1.38
2005	77	8.93	7.46	146	8.24	68	1.67	1.55	1.62	1.53	1.39	1.46
2006	60	9.30	8.37	93	9.03	27	1.69	1.61	1.66	1.38	1.31	1.36
2007	74	12.89	12.32	58	12.90	-1	1.75	1.69	1.73	1.24	1.21	1.25
2008	52	16.26	13.63	263	14.19	206	1.85	1.65	1.68	1.33	1.21	1.24
2009	25	21.15	13.07	808	13.25	790	2.20	1.60	1.61	1.21	0.95	0.97
2010	20	21.66	13.17	849	13.20	846	2.19	1.60	1.60	1.07	0.85	0.86
2011	55	17.93	12.50	544	12.20	573	1.67	1.43	1.41	0.67	0.58	0.58
2012	38	18.96	12.89	607	12.01	695	1.49	1.31	1.29	0.32	0.28	0.28
2013	49	14.42	12.89	153	11.93	249	1.37	1.33	1.30	0.22	0.22	0.22
2014	57	22.21	14.43	778	13.21	900	1.43	1.26	1.24	0.19	0.18	0.18
2015	53	15.70	18.03	-234	16.05	-35	1.18	1.21	1.19	0.06	0.07	0.06
2016	40	8.01	18.12	-1,011	16.12	-812	1.08	1.17	1.15	0.02	0.02	0.02

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark	Russell 3000® Index		Russell Midcap® Index		CA Benchmark	Russell 3000® Index	Russell Midcap® Index	CA Benchmark	Russell 3000® Index	Russell Midcap® Index
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	20	27.58	18.42	916	16.28	1,130	2.43	1.70	1.68	2.43	1.69	1.67
1994	15	25.52	13.63	1,189	13.35	1,217	2.58	1.60	1.69	2.58	1.60	1.69
1995	26	21.79	12.62	917	12.44	935	2.00	1.46	1.51	2.00	1.46	1.51
1996	28	10.42	4.98	544	9.12	130	1.60	1.25	1.54	1.60	1.25	1.54
1997	41	7.11	2.50	460	8.57	-146	1.45	1.14	1.54	1.44	1.13	1.54
1998	48	7.18	2.75	443	8.47	-129	1.45	1.15	1.53	1.43	1.13	1.49
1999	43	14.63	3.75	1,088	9.35	528	1.90	1.17	1.46	1.89	1.16	1.46
2000	67	15.06	6.33	873	10.52	455	1.84	1.28	1.49	1.80	1.26	1.46
2001	22	20.14	7.41	1,273	10.21	993	2.24	1.38	1.54	2.13	1.32	1.47
2002	27	15.92	7.24	868	9.79	613	1.89	1.39	1.54	1.84	1.32	1.47
2003	26	14.61	5.91	870	7.53	708	1.97	1.35	1.46	1.90	1.28	1.39
2004	56	10.29	5.98	431	7.22	307	1.71	1.39	1.49	1.63	1.31	1.40
2005	77	8.93	7.35	158	8.38	54	1.67	1.54	1.64	1.53	1.39	1.48
2006	60	9.30	8.27	103	9.07	23	1.69	1.60	1.67	1.38	1.31	1.37
2007	74	12.89	12.53	36	13.08	-18	1.75	1.71	1.74	1.24	1.23	1.26
2008	52	16.26	14.07	219	14.47	178	1.85	1.69	1.70	1.33	1.23	1.26
2009	25	21.15	13.91	724	13.42	773	2.20	1.65	1.62	1.21	0.99	0.98
2010	20	21.66	13.93	773	13.29	837	2.19	1.64	1.60	1.07	0.88	0.87
2011	55	17.93	13.00	493	11.99	595	1.67	1.45	1.40	0.67	0.60	0.59
2012	38	18.96	12.49	647	10.91	805	1.49	1.30	1.26	0.32	0.29	0.28
2013	49	14.42	12.37	205	10.66	376	1.37	1.31	1.26	0.22	0.22	0.21
2014	57	22.21	13.24	897	11.38	1,083	1.43	1.24	1.20	0.19	0.18	0.17
2015	53	15.70	14.98	71	12.88	282	1.18	1.17	1.15	0.06	0.06	0.06
2016	40	8.01	14.97	-696	12.64	-464	1.08	1.14	1.12	0.02	0.02	0.02

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)				Total Value to Paid In (TVPI)				Distributions to Paid In (DPI)					
		CA Benchmark		S&P 500 Index		MSCI All Country World Index (gross)		CA Benchmark		S&P 500 Index		MSCI All Country World Index (gross)			
		IRR	mPME IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	TVPI	mPME TVPI	MSCI All Country World Index (gross)	DPI	mPME DPI	MSCI All Country World Index (gross)
1993	20	27.58	19.60	19.60	798	11.59	1,599	2.43	1.74	2.43	1.42	2.43	2.43	1.73	1.42
1994	15	25.52	14.30	14.30	1,122	9.75	1,578	2.58	1.62	1.62	1.43	2.58	2.58	1.62	1.43
1995	26	21.79	13.31	13.31	847	8.50	1,329	2.00	1.47	1.47	1.31	2.00	2.00	1.47	1.31
1996	28	10.42	4.57	4.57	585	4.18	624	1.60	1.22	1.22	1.22	1.60	1.60	1.22	1.21
1997	41	7.11	1.68	1.68	543	3.13	397	1.45	1.09	1.09	1.18	1.44	1.44	1.09	1.17
1998	48	7.18	1.98	1.98	519	3.41	377	1.45	1.11	1.11	1.19	1.43	1.43	1.08	1.17
1999	43	14.63	2.99	2.99	1,165	5.49	914	1.90	1.13	1.13	1.26	1.89	1.89	1.13	1.25
2000	67	15.06	5.69	5.69	938	8.19	687	1.84	1.25	1.25	1.36	1.80	1.80	1.23	1.34
2001	22	20.14	6.94	6.94	1,320	8.52	1,162	2.24	1.36	1.36	1.41	2.13	2.13	1.30	1.36
2002	27	15.92	6.80	6.80	912	8.14	778	1.89	1.36	1.36	1.40	1.84	1.84	1.29	1.35
2003	26	14.61	5.61	5.61	900	5.67	894	1.97	1.33	1.33	1.31	1.90	1.90	1.27	1.26
2004	56	10.29	5.75	5.75	454	4.63	566	1.71	1.38	1.38	1.28	1.63	1.63	1.29	1.21
2005	77	8.93	7.15	7.15	177	4.71	422	1.67	1.53	1.53	1.31	1.53	1.53	1.37	1.20
2006	60	9.30	8.11	8.11	119	5.13	416	1.69	1.59	1.59	1.33	1.38	1.38	1.29	1.11
2007	74	12.89	12.44	12.44	45	8.52	437	1.75	1.71	1.71	1.44	1.24	1.24	1.22	1.05
2008	52	16.26	14.02	14.02	224	9.79	646	1.85	1.69	1.69	1.44	1.33	1.33	1.23	1.07
2009	25	21.15	14.01	14.01	714	9.77	1,138	2.20	1.66	1.66	1.42	1.21	1.21	0.99	0.87
2010	20	21.66	14.05	14.05	761	9.95	1,171	2.19	1.65	1.65	1.43	1.07	1.07	0.88	0.78
2011	55	17.93	13.15	13.15	478	9.59	835	1.67	1.45	1.45	1.31	0.67	0.67	0.60	0.55
2012	38	18.96	12.58	12.58	639	9.63	933	1.49	1.30	1.30	1.23	0.32	0.32	0.29	0.27
2013	49	14.42	12.46	12.46	196	9.67	475	1.37	1.31	1.31	1.24	0.22	0.22	0.22	0.21
2014	57	22.21	13.22	13.22	899	10.74	1,147	1.43	1.24	1.24	1.19	0.19	0.19	0.18	0.17
2015	53	15.70	14.62	14.62	108	12.41	329	1.18	1.17	1.17	1.14	0.06	0.06	0.06	0.06
2016	40	8.01	14.55	14.55	-654	12.11	-410	1.08	1.14	1.14	1.12	0.02	0.02	0.02	0.02

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**US Buyout & Growth Equity: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.43	2.22	2.11	3.31	1.58	20
1994	2.58	1.79	1.41	2.08	1.16	15
1995	2.00	1.95	1.82	2.30	0.98	26
1996	1.60	1.45	1.30	1.83	0.97	28
1997	1.45	1.33	1.39	1.71	0.90	41
1998	1.45	1.64	1.49	1.99	1.28	48
1999	1.90	1.70	1.55	2.18	1.23	43
2000	1.84	1.82	1.78	2.25	1.36	67
2001	2.24	1.87	1.86	2.24	1.50	22
2002	1.89	1.86	1.88	2.39	1.37	27
2003	1.97	1.72	1.77	2.01	1.27	26
2004	1.71	1.73	1.65	1.94	1.46	56
2005	1.67	1.76	1.66	2.20	1.29	77
2006	1.69	1.84	1.77	2.10	1.45	60
2007	1.75	1.74	1.71	2.08	1.41	74
2008	1.85	1.86	1.76	2.09	1.50	52
2009	2.20	2.05	2.21	2.35	1.57	25
2010	2.19	2.28	2.00	2.32	1.74	20
2011	1.67	1.67	1.58	1.94	1.40	55
2012	1.49	1.56	1.49	1.60	1.33	38
2013	1.37	1.42	1.33	1.47	1.21	49
2014	1.43	1.39	1.31	1.47	1.17	57
2015	1.18	1.13	1.11	1.23	0.95	53
2016	1.08	1.06	1.00	1.11	0.91	40

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**US Buyout & Growth Equity: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.43	2.22	2.11	3.31	1.58	20
1994	2.58	1.79	1.41	2.08	1.16	15
1995	2.00	1.95	1.82	2.30	0.98	26
1996	1.60	1.45	1.30	1.83	0.97	28
1997	1.44	1.32	1.39	1.70	0.90	41
1998	1.43	1.61	1.46	1.92	1.27	48
1999	1.89	1.68	1.54	2.11	1.23	43
2000	1.80	1.72	1.73	2.20	1.35	67
2001	2.13	1.80	1.81	2.19	1.47	22
2002	1.84	1.79	1.88	2.39	1.31	27
2003	1.90	1.63	1.72	1.99	1.13	26
2004	1.63	1.60	1.51	1.82	1.30	56
2005	1.53	1.58	1.46	2.04	1.03	77
2006	1.38	1.50	1.42	1.80	1.16	60
2007	1.24	1.31	1.31	1.76	0.83	74
2008	1.33	1.31	1.29	1.60	0.93	52
2009	1.21	1.20	1.41	1.76	0.60	25
2010	1.07	1.03	0.99	1.35	0.69	20
2011	0.67	0.64	0.58	0.95	0.34	55
2012	0.32	0.43	0.31	0.54	0.14	38
2013	0.22	0.32	0.19	0.46	0.06	49
2014	0.19	0.19	0.10	0.23	0.00	57
2015	0.06	0.06	0.00	0.05	0.00	53
2016	0.02	0.04	0.00	0.00	0.00	40

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**US Buyout & Growth Equity: Residual Value to Paid In Capital Multiple (RVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	0.00	0.00	0.00	20
1994	0.00	0.00	0.00	0.00	0.00	15
1995	0.00	0.00	0.00	0.00	0.00	26
1996	0.00	0.00	0.00	0.00	0.00	28
1997	0.00	0.00	0.00	0.00	0.00	41
1998	0.03	0.03	0.00	0.00	0.00	48
1999	0.01	0.01	0.00	0.00	0.00	43
2000	0.03	0.10	0.00	0.02	0.00	67
2001	0.11	0.07	0.00	0.09	0.00	22
2002	0.06	0.06	0.02	0.11	0.00	27
2003	0.07	0.09	0.02	0.09	0.01	26
2004	0.09	0.13	0.06	0.17	0.01	56
2005	0.14	0.18	0.10	0.23	0.03	77
2006	0.31	0.35	0.28	0.47	0.10	60
2007	0.51	0.43	0.35	0.63	0.19	74
2008	0.52	0.55	0.54	0.70	0.31	52
2009	0.99	0.85	0.86	1.05	0.56	25
2010	1.11	1.25	0.83	1.45	0.67	20
2011	1.00	1.03	1.08	1.19	0.83	55
2012	1.17	1.13	1.19	1.27	0.99	38
2013	1.14	1.11	1.12	1.25	0.97	49
2014	1.24	1.20	1.18	1.30	1.05	57
2015	1.12	1.07	1.06	1.16	0.93	53
2016	1.06	1.01	1.00	1.09	0.87	40

Notes: Based on data compiled from 1,019 US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## Ex US Buyout & Growth Equity: Fund Index Analysis



**Ex US Buyout & Growth Equity: Fund Index Summary: Horizon Pooled Return**  
**Net to Limited Partners**

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Ex US Buyout &amp; Growth Equity Index<sup>1</sup></b>	<b>2.39</b>	<b>5.02</b>	<b>17.24</b>	<b>13.14</b>	<b>12.96</b>	<b>7.68</b>	<b>13.97</b>	<b>12.78</b>	<b>13.12</b>
Bloomberg Barclays Capital Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
MSCI Emerging Markets Index (gross)	-7.86	-6.51	8.59	5.98	5.39	2.60	11.07	8.86	7.13
MSCI Europe Index (US\$) (net)	-1.27	-3.23	5.28	4.22	6.21	2.36	7.07	3.96	7.52
MSCI Europe Index (€) (net)	4.00	-0.48	2.85	2.61	8.51	5.47	6.95	3.59	7.56
MSCI Pacific Index (net)	-1.35	-2.02	9.91	6.37	6.93	3.96	7.75	5.29	2.92
MSCI World Ex US Index (net)	-0.75	-2.77	7.04	4.87	6.23	2.63	7.31	4.46	5.59
MSCI World Index (net)	1.73	0.43	11.09	8.48	9.94	6.26	8.14	5.22	7.23
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60

The index is a horizon calculation based on data compiled from 1,018 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1987 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

Ex US Buyout & Growth Equity: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Ex US Buyout &amp; Growth Equity Index<sup>1</sup></b>	<b>17.24</b>	<b>13.14</b>	<b>12.96</b>	<b>7.68</b>	<b>13.97</b>	<b>12.78</b>	<b>13.12</b>
<b>mPME Analysis<sup>2</sup></b>							
MSCI EAFE Index (net)	6.89	4.54	6.54	3.92	5.54	4.67	4.76
Value-Add (bps)	1,035	860	642	376	844	812	836
MSCI Europe Index (net)	5.31	3.88	6.46	3.58	5.38	4.49	4.89
Value-Add (bps)	1,192	925	650	410	859	829	823
S&P 500 Index	14.46	11.44	13.67	11.06	9.94	8.64	9.10
Value-Add (bps)	278	169	-71	-338	403	414	402
Constructed Index: Global Financial Data Emerging Markets/MSCI Emerging Markets (gross) <sup>3</sup>	8.83	5.61	5.20	3.10	8.48	7.71	7.40
Value-Add (bps)	841	752	776	458	550	507	572
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>4</sup>	11.42	8.29	10.08	7.24	7.95	6.86	7.06
Value-Add (bps)	581	485	287	45	603	592	606

The index is a horizon calculation based on data compiled from 1,018 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1987 and 2018.

<sup>1</sup>Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup>CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup>Constructed MSCI EM Index: Data from 1/1/1986 to 12/31/1987 represented by GFD Emerging Markets price return. Data from 1/1/1988 to present represented by MSCI Emerging Markets total return gross.

<sup>4</sup>Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Buyout & Growth Equity: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return								
1986 Q1	—	1992 Q3	-3.63	1999 Q1	-0.38	2005 Q3	5.60	2012 Q1	7.43
1986 Q2	—	1992 Q4	-2.66	1999 Q2	6.70	2005 Q4	11.51	2012 Q2	-2.08
1986 Q3	—	1993 Q1	0.55	1999 Q3	6.19	2006 Q1	7.64	2012 Q3	3.45
1986 Q4	—	1993 Q2	0.89	1999 Q4	10.13	2006 Q2	16.07	2012 Q4	4.63
1987 Q1	—	1993 Q3	2.80	2000 Q1	4.32	2006 Q3	3.86	2013 Q1	0.94
1987 Q2	0.00	1993 Q4	17.38	2000 Q2	1.60	2006 Q4	21.64	2013 Q2	1.47
1987 Q3	0.58	1994 Q1	8.04	2000 Q3	-2.61	2007 Q1	4.33	2013 Q3	6.00
1987 Q4	6.44	1994 Q2	0.15	2000 Q4	1.41	2007 Q2	15.19	2013 Q4	7.54
1988 Q1	-9.47	1994 Q3	3.48	2001 Q1	-5.14	2007 Q3	6.65	2014 Q1	2.96
1988 Q2	-5.12	1994 Q4	1.53	2001 Q2	-0.61	2007 Q4	6.87	2014 Q2	4.67
1988 Q3	-11.37	1995 Q1	4.59	2001 Q3	1.71	2008 Q1	2.68	2014 Q3	-3.03
1988 Q4	13.75	1995 Q2	3.32	2001 Q4	-4.69	2008 Q2	-3.60	2014 Q4	0.60
1989 Q1	-3.59	1995 Q3	3.35	2002 Q1	-0.54	2008 Q3	-15.61	2015 Q1	-1.22
1989 Q2	-9.17	1995 Q4	0.98	2002 Q2	7.03	2008 Q4	-22.05	2015 Q2	6.67
1989 Q3	2.48	1996 Q1	1.06	2002 Q3	-3.02	2009 Q1	-7.16	2015 Q3	-2.25
1989 Q4	1.31	1996 Q2	5.16	2002 Q4	5.03	2009 Q2	10.10	2015 Q4	3.62
1990 Q1	0.33	1996 Q3	4.87	2003 Q1	0.78	2009 Q3	9.39	2016 Q1	3.01
1990 Q2	8.34	1996 Q4	19.50	2003 Q2	7.63	2009 Q4	8.61	2016 Q2	1.09
1990 Q3	1.23	1997 Q1	-0.52	2003 Q3	2.51	2010 Q1	-0.35	2016 Q3	4.11
1990 Q4	4.21	1997 Q2	4.32	2003 Q4	13.66	2010 Q2	-2.54	2016 Q4	0.97
1991 Q1	-6.71	1997 Q3	1.79	2004 Q1	1.45	2010 Q3	11.36	2017 Q1	4.51
1991 Q2	-4.71	1997 Q4	5.96	2004 Q2	5.35	2010 Q4	9.25	2017 Q2	8.09
1991 Q3	5.04	1998 Q1	2.30	2004 Q3	5.38	2011 Q1	5.18	2017 Q3	5.63
1991 Q4	4.87	1998 Q2	8.67	2004 Q4	19.20	2011 Q2	5.80	2017 Q4	5.58
1992 Q1	-4.82	1998 Q3	2.04	2005 Q1	1.43	2011 Q3	-9.27	2018 Q1	2.43
1992 Q2	5.73	1998 Q4	1.72	2005 Q2	6.10	2011 Q4	0.42	2018 Q2	2.39

The index is a horizon calculation based on data compiled from 1,018 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1987 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Buyout & Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns		One Year Rolling Returns	
Years	Horizon Return (%)	One Year Ended	Horizon Return (%)
1 Year	17.24	6/30/2018	17.24
2 Years	17.98	6/30/2017	18.66
3 Years	13.14	6/30/2016	5.23
4 Years	9.92	6/30/2015	2.50
5 Years	12.96	6/30/2014	22.97
6 Years	12.61	6/30/2013	11.28
7 Years	9.52	6/30/2012	-4.30
8 Years	12.90	6/30/2011	35.16
9 Years	13.11	6/30/2010	14.65
10 Years	7.68	6/30/2009	-31.66
11 Years	7.97	6/30/2008	11.53
12 Years	10.35	6/30/2007	51.93
13 Years	12.17	6/30/2006	46.80
14 Years	13.38	6/30/2005	35.50
15 Years	13.97	6/30/2004	24.57

The index is a horizon calculation based on data compiled from 1,018 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1987 and 2018. All returns are net of fees, expenses, and carried interest.



## Ex US Buyout & Growth Equity: Fund Since Inception Analysis



**Ex US Buyout & Growth Equity: Since Inception IRR & Multiples by Fund Vintage Year**  
 Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	16.12	12.94	10.26	15.56	20.86	7.53	11.77	1.89	0.00	1.89	8
1994	22.57	17.53	10.71	15.79	33.67	3.32	18.85	2.26	0.00	2.26	21
1995	19.32	10.18	6.04	11.05	14.53	-3.02	22.67	1.88	0.00	1.88	20
1996	15.24	11.06	10.25	10.63	16.71	-2.53	20.28	1.76	0.00	1.76	24
1997	12.24	12.66	11.13	13.24	19.01	4.88	22.13	1.79	0.00	1.79	44
1998	14.40	13.40	14.11	16.36	20.91	6.28	12.40	2.02	0.01	2.03	33
1999	15.72	16.44	15.68	15.25	22.78	4.03	18.09	1.88	0.01	1.89	34
2000	25.70	20.67	18.87	21.48	35.20	8.75	19.09	2.40	0.04	2.44	46
2001	28.75	22.35	20.55	23.17	31.61	11.49	18.58	2.10	0.00	2.10	24
2002	22.74	18.28	18.69	20.06	26.70	8.76	29.86	2.07	0.02	2.10	29
2003	19.26	20.30	16.98	21.79	32.84	10.41	20.57	1.66	0.02	1.69	25
2004	13.03	23.50	9.20	18.79	27.75	2.66	42.20	1.63	0.11	1.74	45
2005	5.66	7.97	6.87	8.88	13.06	-1.35	15.27	1.25	0.09	1.34	73
2006	6.06	6.08	5.80	8.56	12.03	0.80	12.57	1.21	0.18	1.39	79
2007	9.35	5.71	6.84	7.06	11.62	-0.84	13.21	1.24	0.32	1.57	95
2008	10.64	6.25	7.89	8.15	13.36	3.76	16.37	1.06	0.53	1.59	58
2009	9.85	10.54	10.19	11.57	14.58	5.12	10.93	0.67	0.86	1.53	27
2010	11.65	9.42	11.73	11.29	15.74	1.99	10.72	0.61	0.89	1.51	41
2011	14.36	10.67	9.95	10.72	17.00	3.95	10.68	0.54	1.04	1.59	48
2012	16.53	12.19	12.10	13.10	19.43	7.63	9.75	0.46	1.13	1.59	53
2013	18.13	15.05	13.08	17.45	21.90	8.14	11.54	0.24	1.19	1.42	40
2014	18.40	17.29	15.61	18.87	21.95	10.65	12.03	0.13	1.19	1.32	40
2015	14.37	7.47	10.01	13.58	20.85	-3.71	23.17	0.06	1.11	1.17	40
2016	5.68	0.78	-2.24	12.67	14.30	-14.45	25.74	0.00	1.04	1.04	28

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

**Ex US Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME)**  
Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)				Total Value to Paid In (TVPI)				Distributions to Paid In (DPI)			
		CA Benchmark	MSCI EAFE Index (net)		MSCI Europe Index (net)		CA Benchmark	MSCI EAFE Index (net)		CA Benchmark	MSCI EAFE Index (net)		MSCI Europe Index (net)
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI		mPME DPI	mPME DPI	
1993	8	16.12	7.22	890	16.65	-53	1.89	1.33	1.82	1.89	1.33	1.82	
1994	21	22.57	6.26	1,631	14.99	758	2.26	1.21	1.54	2.26	1.21	1.54	
1995	20	19.32	5.30	1,402	10.63	869	1.88	1.18	1.34	1.88	1.17	1.34	
1996	24	15.24	5.37	987	7.48	776	1.76	1.21	1.29	1.76	1.21	1.29	
1997	44	12.24	2.85	939	3.04	920	1.79	1.14	1.15	1.79	1.14	1.15	
1998	33	14.40	3.75	1,065	4.05	1,036	2.03	1.18	1.19	2.02	1.17	1.19	
1999	34	15.72	6.25	947	6.85	888	1.89	1.28	1.31	1.88	1.27	1.30	
2000	46	25.70	10.87	1,483	11.33	1,437	2.44	1.40	1.42	2.40	1.38	1.40	
2001	24	28.75	14.06	1,469	14.48	1,427	2.10	1.41	1.43	2.10	1.41	1.43	
2002	29	22.74	8.23	1,451	8.65	1,409	2.10	1.30	1.32	2.07	1.29	1.31	
2003	25	19.26	6.02	1,324	6.60	1,266	1.69	1.22	1.23	1.66	1.19	1.21	
2004	45	13.03	3.02	1,001	3.17	986	1.74	1.14	1.15	1.63	1.08	1.09	
2005	73	5.66	1.43	423	1.31	435	1.34	1.08	1.07	1.25	1.00	1.00	
2006	79	6.06	2.76	330	2.57	349	1.39	1.16	1.15	1.21	1.01	1.01	
2007	95	9.35	4.66	469	4.55	480	1.57	1.24	1.24	1.24	1.03	1.03	
2008	58	10.64	6.36	428	6.29	435	1.59	1.31	1.31	1.06	0.90	0.90	
2009	27	9.85	6.16	370	5.86	400	1.53	1.30	1.28	0.67	0.59	0.59	
2010	41	11.65	6.36	530	5.96	569	1.51	1.25	1.23	0.61	0.53	0.53	
2011	48	14.36	5.95	842	5.30	907	1.59	1.21	1.19	0.54	0.44	0.43	
2012	53	16.53	5.39	1,115	4.52	1,202	1.59	1.16	1.14	0.46	0.37	0.36	
2013	40	18.13	6.48	1,165	5.49	1,264	1.42	1.14	1.11	0.24	0.20	0.20	
2014	40	18.40	8.39	1,001	7.56	1,084	1.32	1.14	1.12	0.13	0.12	0.12	
2015	40	14.37	8.90	547	8.13	624	1.17	1.10	1.09	0.06	0.06	0.06	
2016	28	5.68	5.53	14	4.19	149	1.04	1.04	1.03	0.00	0.00	0.00	

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

**Ex US Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)					Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)		
		CA Benchmark	S&P 500 Index		MSCI Emerging Markets Index (gross)		CA Benchmark	S&P 500 Index	MSCI Emerging Markets Index (gross)	CA Benchmark	S&P 500 Index	MSCI Emerging Markets Index (gross)
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	8	16.12	21.22	-510	0.99	1,513	1.89	2.08	1.05	1.89	2.08	1.05
1994	21	22.57	19.89	268	-1.74	2,431	2.26	1.75	0.94	2.26	1.75	0.94
1995	20	19.32	13.57	576	2.02	1,730	1.88	1.42	1.08	1.88	1.42	1.08
1996	24	15.24	8.51	673	6.87	837	1.76	1.30	1.34	1.76	1.30	1.34
1997	44	12.24	1.81	1,043	9.71	253	1.79	1.09	1.60	1.79	1.09	1.59
1998	33	14.40	1.14	1,327	12.41	200	2.03	1.05	1.75	2.02	1.05	1.74
1999	34	15.72	2.98	1,274	15.16	56	1.89	1.13	1.86	1.88	1.12	1.85
2000	46	25.70	5.82	1,988	21.68	402	2.44	1.22	1.98	2.40	1.19	1.96
2001	24	28.75	8.08	2,067	26.18	257	2.10	1.25	1.90	2.10	1.25	1.90
2002	29	22.74	6.89	1,585	18.10	465	2.10	1.31	1.72	2.07	1.29	1.70
2003	25	19.26	6.65	1,261	14.57	469	1.69	1.29	1.52	1.66	1.25	1.49
2004	45	13.03	6.15	688	8.58	445	1.74	1.35	1.42	1.63	1.25	1.35
2005	73	5.66	6.56	-90	4.25	141	1.34	1.45	1.24	1.25	1.31	1.16
2006	79	6.06	9.17	-311	2.87	319	1.39	1.66	1.16	1.21	1.41	1.02
2007	95	9.35	11.90	-255	2.68	667	1.57	1.76	1.13	1.24	1.41	0.94
2008	58	10.64	14.07	-344	3.66	697	1.59	1.84	1.17	1.06	1.20	0.80
2009	27	9.85	13.78	-393	3.54	631	1.53	1.79	1.17	0.67	0.78	0.52
2010	41	11.65	13.79	-213	4.18	747	1.51	1.61	1.16	0.61	0.66	0.48
2011	48	14.36	13.10	127	5.05	932	1.59	1.52	1.18	0.54	0.53	0.42
2012	53	16.53	12.49	404	5.54	1,100	1.59	1.41	1.17	0.46	0.43	0.36
2013	40	18.13	12.75	538	8.53	960	1.42	1.28	1.18	0.24	0.22	0.21
2014	40	18.40	13.94	445	10.77	763	1.32	1.23	1.18	0.13	0.12	0.12
2015	40	14.37	14.55	-18	10.77	360	1.17	1.17	1.12	0.06	0.06	0.06
2016	28	5.68	13.24	-756	4.64	104	1.04	1.10	1.04	0.00	0.00	0.00

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

**Ex US Buyout & Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME)**  
Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)		Total Value to Paid In (TVPI)		Distributions to Paid In (DPI)	
		CA Benchmark	MSCI All Country World Index (gross)		CA Benchmark	MSCI All Country World Index (gross)	MSCI All Country World Index (gross)
			IRR	mPME IRR	Value-Add	TVPI	mPME TVPI
1993	8	16.12		12.61	351	1.89	1.60
1994	21	22.57		11.48	1,109	2.26	1.41
1995	20	19.32		8.47	1,085	1.88	1.27
1996	24	15.24		6.71	853	1.76	1.25
1997	44	12.24		2.62	962	1.79	1.13
1998	33	14.40		2.90	1,150	2.03	1.14
1999	34	15.72		5.18	1,054	1.89	1.23
2000	46	25.70		9.10	1,660	2.44	1.34
2001	24	28.75		11.98	1,678	2.10	1.37
2002	29	22.74		8.33	1,442	2.10	1.34
2003	25	19.26		7.10	1,216	1.69	1.28
2004	45	13.03		5.19	784	1.74	1.27
2005	73	5.66		4.31	135	1.34	1.27
2006	79	6.06		5.91	15	1.39	1.38
2007	95	9.35		7.92	143	1.57	1.45
2008	58	10.64		9.75	89	1.59	1.53
2009	27	9.85		9.57	28	1.53	1.50
2010	41	11.65		9.75	190	1.51	1.40
2011	48	14.36		9.45	492	1.59	1.35
2012	53	16.53		9.05	748	1.59	1.29
2013	40	18.13		10.08	805	1.42	1.22
2014	40	18.40		11.75	665	1.32	1.20
2015	40	14.37		12.33	204	1.17	1.14
2016	28	5.68		9.77	-409	1.04	1.07

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Ex US Buyout & Growth Equity: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	1.89	1.88	1.65	2.08	1.46	8
1994	2.26	1.97	1.65	2.50	1.30	21
1995	1.88	1.50	1.21	1.92	0.87	20
1996	1.76	1.69	1.59	2.02	0.85	24
1997	1.79	1.78	1.81	2.12	1.27	44
1998	2.03	2.24	1.74	2.22	1.48	33
1999	1.89	1.91	1.87	2.32	1.15	34
2000	2.44	2.13	2.00	2.82	1.59	46
2001	2.10	2.09	2.10	2.60	1.62	24
2002	2.10	2.11	1.97	2.26	1.53	29
2003	1.69	1.97	1.78	2.42	1.54	25
2004	1.74	1.85	1.50	2.15	1.24	45
2005	1.34	1.53	1.41	1.78	0.92	73
2006	1.39	1.57	1.38	1.72	1.04	79
2007	1.57	1.41	1.46	1.70	0.95	95
2008	1.59	1.47	1.40	1.72	1.20	58
2009	1.53	1.68	1.51	1.86	1.19	27
2010	1.51	1.51	1.43	1.76	1.10	41
2011	1.59	1.45	1.36	1.74	1.17	48
2012	1.59	1.43	1.39	1.66	1.23	53
2013	1.42	1.45	1.36	1.57	1.18	40
2014	1.32	1.34	1.27	1.44	1.15	40
2015	1.17	1.12	1.12	1.26	0.95	40
2016	1.04	1.03	0.98	1.11	0.90	28

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Ex US Buyout & Growth Equity: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	1.89	1.88	1.65	2.08	1.46	8
1994	2.26	1.96	1.65	2.50	1.30	21
1995	1.88	1.50	1.21	1.92	0.87	20
1996	1.76	1.69	1.59	2.00	0.85	24
1997	1.79	1.77	1.81	2.12	1.27	44
1998	2.02	2.23	1.74	2.22	1.48	33
1999	1.88	1.89	1.87	2.23	1.12	34
2000	2.40	2.10	1.97	2.81	1.59	46
2001	2.10	2.08	2.10	2.59	1.62	24
2002	2.07	2.03	1.80	2.23	1.40	29
2003	1.66	1.95	1.77	2.42	1.43	25
2004	1.63	1.68	1.43	1.93	1.01	45
2005	1.25	1.41	1.34	1.70	0.81	73
2006	1.21	1.34	1.15	1.57	0.78	79
2007	1.24	1.04	1.01	1.44	0.56	95
2008	1.06	0.88	0.82	1.17	0.50	58
2009	0.67	0.67	0.56	1.06	0.34	27
2010	0.61	0.61	0.45	0.91	0.14	41
2011	0.54	0.51	0.32	0.85	0.11	48
2012	0.46	0.36	0.30	0.60	0.10	53
2013	0.24	0.31	0.17	0.50	0.02	40
2014	0.13	0.15	0.02	0.17	0.00	40
2015	0.06	0.07	0.00	0.00	0.00	40
2016	0.00	0.01	0.00	0.00	0.00	28

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Buyout & Growth Equity: Residual Value to Paid In Capital Multiple (RVPI) Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	0.00	0.00	0.00	8
1994	0.00	0.00	0.00	0.00	0.00	21
1995	0.00	0.00	0.00	0.00	0.00	20
1996	0.00	0.00	0.00	0.00	0.00	24
1997	0.00	0.01	0.00	0.00	0.00	44
1998	0.01	0.01	0.00	0.00	0.00	33
1999	0.01	0.01	0.00	0.00	0.00	34
2000	0.04	0.03	0.00	0.01	0.00	46
2001	0.00	0.01	0.00	0.00	0.00	24
2002	0.02	0.08	0.00	0.03	0.00	29
2003	0.02	0.02	0.00	0.00	0.00	25
2004	0.11	0.17	0.02	0.10	0.00	45
2005	0.09	0.13	0.06	0.15	0.00	73
2006	0.18	0.23	0.13	0.30	0.03	79
2007	0.32	0.37	0.21	0.47	0.09	95
2008	0.53	0.59	0.58	0.77	0.29	58
2009	0.86	1.01	0.79	1.31	0.39	27
2010	0.89	0.90	0.81	1.01	0.59	41
2011	1.04	0.94	0.88	1.22	0.70	48
2012	1.13	1.08	1.07	1.25	0.87	53
2013	1.19	1.14	1.15	1.28	0.93	40
2014	1.19	1.19	1.15	1.30	1.06	40
2015	1.11	1.05	1.09	1.24	0.90	40
2016	1.04	1.03	0.98	1.09	0.90	28

Notes: Based on data compiled from 975 Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## Buyout: Fund Index Analysis

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**Buyout: Fund Index Summary: Horizon Pooled Return**

Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Buyout Index<sup>1</sup></b>	<b>3.87</b>	<b>6.48</b>	<b>18.03</b>	<b>13.93</b>	<b>14.76</b>	<b>9.69</b>	<b>14.55</b>	<b>12.21</b>	<b>13.46</b>
Bloomberg Barclays Capital Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
MSCI Emerging Markets Index (gross)	-7.86	-6.51	8.59	5.98	5.39	2.60	11.07	8.86	7.13
MSCI Europe Index (US\$) (net)	-1.27	-3.23	5.28	4.22	6.21	2.36	7.07	3.96	7.52
MSCI Europe Index (€) (net)	4.00	-0.48	2.85	2.61	8.51	5.47	6.95	3.59	7.56
MSCI Pacific Index (net)	-1.35	-2.02	9.91	6.37	6.93	3.96	7.75	5.29	2.92
MSCI World Ex US Index (net)	-0.75	-2.77	7.04	4.87	6.23	2.63	7.31	4.46	5.59
MSCI World Index (net)	1.73	0.43	11.09	8.48	9.94	6.26	8.14	5.22	7.23
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60

The index is a horizon calculation based on data compiled from 1,531 buyout funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Buyout: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)**  
**Net to Limited Partners**

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Buyout Index<sup>1</sup></b>	<b>18.03</b>	<b>13.93</b>	<b>14.76</b>	<b>9.69</b>	<b>14.55</b>	<b>12.21</b>	<b>13.46</b>
<b>mPME Analysis<sup>2</sup></b>							
MSCI EAFE Index (net)	6.96	4.66	6.78	3.57	5.84	4.52	4.71
Value-Add (bps)	1,107	927	798	612	871	769	875
MSCI Europe Index (net)	5.39	4.01	6.76	3.22	5.76	4.35	5.18
Value-Add (bps)	1,265	991	799	648	879	786	827
S&P 500 Index	14.50	11.48	13.82	10.67	9.50	7.77	8.67
Value-Add (bps)	353	245	94	-97	504	444	478
Russell 2000® Index	17.52	10.09	12.60	11.03	10.50	9.05	9.48
Value-Add (bps)	51	384	215	-133	404	316	398
Russell 3000® Index	14.89	11.05	13.71	10.75	9.75	8.03	8.85
Value-Add (bps)	315	287	105	-105	479	418	460
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>3</sup>	11.49	8.37	10.27	6.87	7.97	6.42	6.82
Value-Add (bps)	655	556	448	282	658	579	664

The index is a horizon calculation based on data compiled from 1,531 buyout funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup>Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup>CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup>Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

### Buyout: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return								
1986 Q1	—	1992 Q3	1.81	1999 Q1	3.94	2005 Q3	6.70	2012 Q1	6.32
1986 Q2	4.54	1992 Q4	8.34	1999 Q2	8.86	2005 Q4	9.82	2012 Q2	-0.54
1986 Q3	-1.67	1993 Q1	2.91	1999 Q3	3.63	2006 Q1	6.08	2012 Q3	4.01
1986 Q4	0.73	1993 Q2	5.62	1999 Q4	11.16	2006 Q2	8.86	2012 Q4	4.22
1987 Q1	4.24	1993 Q3	5.97	2000 Q1	11.18	2006 Q3	3.58	2013 Q1	3.32
1987 Q2	1.20	1993 Q4	8.03	2000 Q2	-1.51	2006 Q4	16.59	2013 Q2	2.79
1987 Q3	1.23	1994 Q1	1.75	2000 Q3	-2.37	2007 Q1	4.77	2013 Q3	5.72
1987 Q4	-1.19	1994 Q2	3.09	2000 Q4	-4.55	2007 Q2	10.61	2013 Q4	7.25
1988 Q1	1.44	1994 Q3	1.64	2001 Q1	-5.39	2007 Q3	3.07	2014 Q1	3.10
1988 Q2	3.64	1994 Q4	6.29	2001 Q2	2.08	2007 Q4	3.86	2014 Q2	4.85
1988 Q3	3.10	1995 Q1	3.41	2001 Q3	-5.87	2008 Q1	0.18	2014 Q3	-0.84
1988 Q4	3.12	1995 Q2	3.66	2001 Q4	-1.60	2008 Q2	-1.79	2014 Q4	2.30
1989 Q1	1.25	1995 Q3	3.82	2002 Q1	-0.35	2008 Q3	-10.91	2015 Q1	1.05
1989 Q2	3.11	1995 Q4	10.07	2002 Q2	0.40	2008 Q4	-19.36	2015 Q2	5.28
1989 Q3	1.58	1996 Q1	5.23	2002 Q3	-3.82	2009 Q1	-5.28	2015 Q3	-0.53
1989 Q4	1.39	1996 Q2	6.22	2002 Q4	1.80	2009 Q2	6.48	2015 Q4	2.43
1990 Q1	-0.26	1996 Q3	6.49	2003 Q1	0.52	2009 Q3	7.70	2016 Q1	1.92
1990 Q2	6.05	1996 Q4	9.25	2003 Q2	7.29	2009 Q4	7.31	2016 Q2	2.80
1990 Q3	-0.26	1997 Q1	0.52	2003 Q3	4.52	2010 Q1	2.46	2016 Q3	4.02
1990 Q4	1.62	1997 Q2	8.59	2003 Q4	11.23	2010 Q2	0.24	2016 Q4	2.78
1991 Q1	2.00	1997 Q3	5.79	2004 Q1	2.30	2010 Q3	7.55	2017 Q1	4.32
1991 Q2	0.48	1997 Q4	10.54	2004 Q2	4.51	2010 Q4	9.10	2017 Q2	6.47
1991 Q3	2.89	1998 Q1	8.57	2004 Q3	3.53	2011 Q1	5.47	2017 Q3	4.80
1991 Q4	3.88	1998 Q2	7.17	2004 Q4	17.55	2011 Q2	5.37	2017 Q4	5.38
1992 Q1	0.82	1998 Q3	-5.01	2005 Q1	1.08	2011 Q3	-6.58	2018 Q1	2.47
1992 Q2	1.84	1998 Q4	6.65	2005 Q2	7.47	2011 Q4	3.12	2018 Q2	3.87

The index is a horizon calculation based on data compiled from 1,531 buyout funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns	
Years	Horizon Return (%)
1 Year	18.03
2 Years	18.46
3 Years	13.93
4 Years	12.03
5 Years	14.76
6 Years	14.92
7 Years	12.22
8 Years	15.05
9 Years	15.52
10 Years	9.69
11 Years	9.25
12 Years	11.25
13 Years	12.71
14 Years	13.87
15 Years	14.55

One Year Rolling Returns	
One Year Ended	Horizon Return (%)
6/30/2018	18.03
6/30/2017	18.85
6/30/2016	6.60
6/30/2015	7.72
6/30/2014	22.98
6/30/2013	15.45
6/30/2012	1.72
6/30/2011	30.39
6/30/2010	18.45
6/30/2009	-26.85
6/30/2008	4.75
6/30/2007	39.99
6/30/2006	35.47
6/30/2005	32.03
6/30/2004	24.31

The index is a horizon calculation based on data compiled from 1,531 buyout funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.



## Buyout: Fund Since Inception Analysis

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**Buyout: Since Inception IRR & Multiples by Fund Vintage Year**

Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	26.56	18.76	20.46	22.86	32.49	9.92	28.46	2.40	0.00	2.41	25
1994	16.15	18.63	11.16	17.88	30.52	7.19	16.82	1.92	0.00	1.92	25
1995	16.07	14.15	11.29	15.42	22.08	-0.46	21.66	1.76	0.00	1.76	35
1996	11.36	10.28	8.60	9.21	13.00	-0.85	21.37	1.63	0.00	1.63	39
1997	9.12	8.27	8.35	8.38	14.45	0.57	18.63	1.58	0.00	1.58	73
1998	8.31	11.80	11.46	13.56	19.76	5.89	11.34	1.52	0.03	1.55	68
1999	16.47	14.43	12.45	14.25	22.40	5.32	15.00	1.95	0.01	1.96	65
2000	20.68	19.34	18.50	20.11	27.85	10.65	16.16	2.07	0.03	2.09	84
2001	26.43	23.07	20.84	23.56	32.34	11.81	17.17	2.11	0.05	2.16	39
2002	19.35	14.65	18.55	18.12	26.99	8.42	28.21	1.96	0.04	2.00	45
2003	16.31	16.00	13.49	16.04	26.25	5.01	17.40	1.78	0.05	1.83	44
2004	11.23	13.68	9.76	13.60	14.97	7.43	16.18	1.65	0.09	1.74	81
2005	6.66	7.06	7.89	8.38	13.64	2.42	14.09	1.35	0.10	1.45	111
2006	7.97	9.21	9.88	9.75	14.79	4.29	14.39	1.31	0.25	1.56	107
2007	11.70	9.89	10.26	10.01	15.81	5.02	13.13	1.25	0.42	1.67	117
2008	14.26	12.41	13.02	13.45	17.51	7.71	17.21	1.27	0.47	1.74	73
2009	18.72	16.28	17.35	16.66	23.75	8.32	14.48	1.09	0.92	2.01	34
2010	13.68	13.33	14.23	16.42	22.21	2.16	13.50	0.75	0.85	1.59	30
2011	17.23	15.20	14.76	15.56	20.92	7.98	11.57	0.65	0.99	1.64	67
2012	17.89	15.88	16.21	17.10	19.88	10.00	9.87	0.39	1.15	1.54	60
2013	15.53	14.63	14.71	17.80	22.75	9.00	12.62	0.24	1.11	1.35	54
2014	20.12	18.38	17.18	18.94	22.74	10.91	10.97	0.16	1.20	1.35	60
2015	13.04	2.53	5.79	8.95	16.14	-6.42	24.50	0.06	1.09	1.15	56
2016	5.38	7.02	0.42	10.76	8.51	-12.24	46.28	0.02	1.03	1.05	41

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)					
		CA Benchmark	MSCI EAFE Index (Net)		MSCI Europe Index (Net)		CA Benchmark	MSCI EAFE Index (Net)	MSCI Europe Index (Net)	CA Benchmark	MSCI EAFE Index (Net)	MSCI Europe Index (Net)	
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI	mPME DPI
1993	25	26.56		6.91	1,965	15.24	1,133	2.41	1.25	1.58	2.40	1.25	1.58
1994	25	16.15		4.56	1,158	9.65	650	1.92	1.20	1.42	1.92	1.20	1.42
1995	35	16.07		4.62	1,145	9.11	697	1.76	1.18	1.36	1.76	1.18	1.36
1996	39	11.36		3.85	752	5.11	626	1.63	1.19	1.26	1.63	1.19	1.26
1997	73	9.12		3.33	579	3.62	550	1.58	1.18	1.20	1.58	1.18	1.20
1998	68	8.31		4.22	408	4.53	377	1.55	1.23	1.25	1.52	1.22	1.24
1999	65	16.47		6.91	957	7.46	901	1.96	1.31	1.34	1.95	1.31	1.33
2000	84	20.68		10.30	1,038	10.77	991	2.09	1.39	1.41	2.07	1.37	1.39
2001	39	26.43		11.56	1,488	12.06	1,438	2.16	1.37	1.39	2.11	1.36	1.37
2002	45	19.35		7.92	1,143	8.39	1,096	2.00	1.32	1.34	1.96	1.30	1.31
2003	44	16.31		5.09	1,122	5.50	1,081	1.83	1.22	1.23	1.78	1.18	1.20
2004	81	11.23		2.47	875	2.59	864	1.74	1.13	1.14	1.65	1.08	1.09
2005	111	6.66		1.67	499	1.54	513	1.45	1.10	1.09	1.35	1.02	1.01
2006	107	7.97		2.34	563	2.14	583	1.56	1.14	1.12	1.31	0.98	0.97
2007	117	11.70		5.03	667	4.91	679	1.67	1.24	1.23	1.25	0.97	0.97
2008	73	14.26		6.44	783	6.40	786	1.74	1.28	1.27	1.27	0.97	0.97
2009	34	18.72		6.32	1,240	5.98	1,274	2.01	1.26	1.24	1.09	0.76	0.76
2010	30	13.68		6.43	725	6.03	765	1.59	1.24	1.22	0.75	0.61	0.61
2011	67	17.23		6.05	1,118	5.40	1,183	1.64	1.19	1.17	0.65	0.51	0.50
2012	60	17.89		5.73	1,216	4.83	1,306	1.54	1.15	1.12	0.39	0.31	0.31
2013	54	15.53		6.50	902	5.53	999	1.35	1.13	1.11	0.24	0.21	0.21
2014	60	20.12		7.55	1,257	6.66	1,347	1.35	1.12	1.11	0.16	0.14	0.14
2015	56	13.04		8.82	422	8.09	495	1.15	1.10	1.09	0.06	0.06	0.06
2016	41	5.38		7.87	-249	6.93	-155	1.05	1.07	1.06	0.02	0.02	0.02

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark	S&P 500 Index		Russell 2000® Index		CA Benchmark	S&P 500 Index	Russell 2000® Index	CA Benchmark	S&P 500 Index	Russell 2000® Index
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	25	26.56	19.97	659	12.00	1,456	2.41	1.77	1.47	2.40	1.77	1.47
1994	25	16.15	12.31	384	8.59	756	1.92	1.51	1.40	1.92	1.51	1.40
1995	35	16.07	11.55	452	7.81	826	1.76	1.44	1.33	1.76	1.44	1.33
1996	39	11.36	5.16	620	7.01	436	1.63	1.24	1.38	1.63	1.24	1.38
1997	73	9.12	1.68	744	7.16	196	1.58	1.09	1.42	1.58	1.08	1.41
1998	68	8.31	2.06	625	7.53	78	1.55	1.11	1.45	1.52	1.09	1.42
1999	65	16.47	3.21	1,326	8.52	796	1.96	1.14	1.39	1.95	1.13	1.38
2000	84	20.68	5.97	1,472	10.18	1,050	2.09	1.23	1.40	2.07	1.22	1.38
2001	39	26.43	7.66	1,877	10.51	1,592	2.16	1.29	1.39	2.11	1.26	1.36
2002	45	19.35	6.83	1,253	8.26	1,109	2.00	1.33	1.40	1.96	1.29	1.36
2003	44	16.31	6.08	1,024	6.65	967	1.83	1.31	1.34	1.78	1.25	1.28
2004	81	11.23	5.88	535	6.27	496	1.74	1.37	1.39	1.65	1.28	1.31
2005	111	6.66	7.09	-43	7.40	-74	1.45	1.51	1.53	1.35	1.38	1.40
2006	107	7.97	8.52	-55	8.77	-80	1.56	1.61	1.63	1.31	1.34	1.36
2007	117	11.70	12.28	-58	12.07	-36	1.67	1.70	1.68	1.25	1.29	1.27
2008	73	14.26	14.10	16	13.65	61	1.74	1.72	1.68	1.27	1.26	1.23
2009	34	18.72	13.93	479	13.04	568	2.01	1.66	1.61	1.09	0.97	0.93
2010	30	13.68	13.84	-17	12.96	72	1.59	1.59	1.55	0.75	0.75	0.72
2011	67	17.23	13.13	410	12.52	471	1.64	1.45	1.43	0.65	0.60	0.58
2012	60	17.89	12.58	531	12.53	536	1.54	1.35	1.35	0.39	0.36	0.36
2013	54	15.53	12.71	282	13.54	199	1.35	1.28	1.30	0.24	0.23	0.23
2014	60	20.12	13.42	670	15.01	511	1.35	1.22	1.25	0.16	0.15	0.15
2015	56	13.04	14.49	-145	17.70	-466	1.15	1.16	1.20	0.06	0.06	0.06
2016	41	5.38	14.19	-881	17.79	-1,241	1.05	1.13	1.16	0.02	0.02	0.02

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)				Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark		Russell 3000® Index		MSCI All Country World Index (gross)		CA Benchmark	Russell 3000® Index	MSCI All Country World Index (gross)	CA Benchmark	Russell 3000® Index	MSCI All Country World Index (gross)
		IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI	mPME DPI	
1993	25	26.56	18.75	781	11.82	1,475	2.41	1.73	1.44	2.40	1.72	1.44	
1994	25	16.15	11.74	441	7.46	869	1.92	1.49	1.32	1.92	1.49	1.32	
1995	35	16.07	10.99	509	7.34	873	1.76	1.42	1.29	1.76	1.42	1.29	
1996	39	11.36	5.51	586	4.56	681	1.63	1.27	1.23	1.63	1.27	1.23	
1997	73	9.12	2.47	665	2.86	626	1.58	1.13	1.15	1.58	1.13	1.15	
1998	68	8.31	2.84	547	3.59	471	1.55	1.16	1.20	1.52	1.13	1.18	
1999	65	16.47	3.99	1,249	5.67	1,081	1.96	1.17	1.25	1.95	1.17	1.25	
2000	84	20.68	6.68	1,400	8.91	1,178	2.09	1.26	1.35	2.07	1.24	1.33	
2001	39	26.43	8.29	1,814	10.41	1,602	2.16	1.31	1.37	2.11	1.29	1.34	
2002	45	19.35	7.26	1,209	8.18	1,117	2.00	1.35	1.36	1.96	1.32	1.33	
2003	44	16.31	6.37	994	6.37	995	1.83	1.33	1.30	1.78	1.27	1.25	
2004	81	11.23	6.10	512	4.80	643	1.74	1.38	1.28	1.65	1.30	1.21	
2005	111	6.66	7.28	-62	4.62	204	1.45	1.53	1.30	1.35	1.39	1.20	
2006	107	7.97	8.68	-71	5.43	254	1.56	1.63	1.35	1.31	1.35	1.14	
2007	117	11.70	12.36	-66	8.31	339	1.67	1.71	1.43	1.25	1.29	1.10	
2008	73	14.26	14.14	12	9.81	445	1.74	1.72	1.45	1.27	1.26	1.09	
2009	34	18.72	13.83	489	9.76	896	2.01	1.65	1.43	1.09	0.96	0.85	
2010	30	13.68	13.72	-4	9.81	387	1.59	1.58	1.39	0.75	0.75	0.67	
2011	67	17.23	12.98	424	9.55	768	1.64	1.44	1.31	0.65	0.60	0.55	
2012	60	17.89	12.47	543	9.36	853	1.54	1.35	1.26	0.39	0.36	0.34	
2013	54	15.53	12.68	285	10.05	547	1.35	1.28	1.21	0.24	0.23	0.22	
2014	60	20.12	13.50	662	11.01	911	1.35	1.23	1.18	0.16	0.15	0.15	
2015	56	13.04	14.82	-178	12.23	81	1.15	1.17	1.14	0.06	0.06	0.06	
2016	41	5.38	14.62	-924	11.48	-610	1.05	1.13	1.10	0.02	0.02	0.02	

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Buyout: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.41	2.24	2.10	3.29	1.62	25
1994	1.92	1.92	1.65	2.46	1.34	25
1995	1.76	1.67	1.57	2.16	0.98	35
1996	1.63	1.50	1.52	1.78	0.96	39
1997	1.58	1.46	1.50	1.93	1.01	73
1998	1.55	1.96	1.61	2.19	1.37	68
1999	1.96	1.83	1.64	2.23	1.28	65
2000	2.09	2.11	2.03	2.61	1.57	84
2001	2.16	2.08	1.97	2.50	1.62	39
2002	2.00	1.94	1.95	2.39	1.50	45
2003	1.83	1.78	1.79	2.14	1.25	44
2004	1.74	1.78	1.64	1.97	1.38	81
2005	1.45	1.53	1.51	1.87	1.13	111
2006	1.56	1.64	1.61	1.99	1.26	107
2007	1.67	1.57	1.57	1.89	1.31	117
2008	1.74	1.69	1.67	1.97	1.35	73
2009	2.01	1.86	1.88	2.33	1.41	34
2010	1.59	1.74	1.57	1.94	1.12	30
2011	1.64	1.58	1.52	1.78	1.29	67
2012	1.54	1.52	1.48	1.73	1.30	60
2013	1.35	1.42	1.33	1.51	1.20	54
2014	1.35	1.33	1.28	1.39	1.17	60
2015	1.15	1.04	1.08	1.21	0.93	56
2016	1.05	1.05	1.00	1.09	0.91	41

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Buyout: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.40	2.24	2.10	3.29	1.62	25
1994	1.92	1.92	1.65	2.46	1.34	25
1995	1.76	1.67	1.57	2.16	0.98	35
1996	1.63	1.50	1.52	1.78	0.96	39
1997	1.58	1.46	1.50	1.93	1.01	73
1998	1.52	1.94	1.61	2.19	1.33	68
1999	1.95	1.82	1.64	2.23	1.28	65
2000	2.07	2.03	1.98	2.57	1.57	84
2001	2.11	2.04	1.97	2.47	1.60	39
2002	1.96	1.90	1.91	2.39	1.35	45
2003	1.78	1.72	1.71	2.08	1.18	44
2004	1.65	1.66	1.48	1.91	1.31	81
2005	1.35	1.41	1.37	1.71	0.99	111
2006	1.31	1.37	1.38	1.71	1.00	107
2007	1.25	1.23	1.28	1.61	0.83	117
2008	1.27	1.21	1.19	1.55	0.81	73
2009	1.09	1.09	1.11	1.58	0.51	34
2010	0.75	0.75	0.68	1.04	0.22	30
2011	0.65	0.64	0.57	0.94	0.21	67
2012	0.39	0.43	0.38	0.61	0.17	60
2013	0.24	0.33	0.18	0.49	0.03	54
2014	0.16	0.17	0.07	0.21	0.00	60
2015	0.06	0.08	0.00	0.05	0.00	56
2016	0.02	0.04	0.00	0.00	0.00	41

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Buyout: Residual Value to Paid In Capital Multiple (RVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	0.00	0.00	0.00	25
1994	0.00	0.00	0.00	0.00	0.00	25
1995	0.00	0.00	0.00	0.00	0.00	35
1996	0.00	0.00	0.00	0.00	0.00	39
1997	0.00	0.00	0.00	0.00	0.00	73
1998	0.03	0.02	0.00	0.00	0.00	68
1999	0.01	0.01	0.00	0.00	0.00	65
2000	0.03	0.08	0.00	0.01	0.00	84
2001	0.05	0.03	0.00	0.00	0.00	39
2002	0.04	0.04	0.00	0.05	0.00	45
2003	0.05	0.06	0.01	0.05	0.00	44
2004	0.09	0.12	0.04	0.15	0.00	81
2005	0.10	0.12	0.06	0.15	0.00	111
2006	0.25	0.27	0.19	0.42	0.05	107
2007	0.42	0.34	0.24	0.49	0.09	117
2008	0.47	0.48	0.51	0.68	0.21	73
2009	0.92	0.77	0.64	0.98	0.40	34
2010	0.85	0.99	0.81	0.97	0.64	30
2011	0.99	0.94	0.89	1.18	0.67	67
2012	1.15	1.09	1.14	1.24	0.93	60
2013	1.11	1.09	1.08	1.24	0.93	54
2014	1.20	1.16	1.15	1.29	1.08	60
2015	1.09	0.97	0.99	1.14	0.86	56
2016	1.03	1.01	0.98	1.06	0.87	41

Notes: Based on data compiled from 1,433 buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## US Buyout: Fund Index Analysis

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## US Buyout: Fund Index Summary: Horizon Pooled Return Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>US Buyout Index<sup>1</sup></b>	<b>5.24</b>	<b>7.88</b>	<b>18.55</b>	<b>13.56</b>	<b>15.91</b>	<b>11.41</b>	<b>14.69</b>	<b>11.71</b>	<b>13.26</b>
US Buyout Small Cap Index <sup>1</sup>	2.60	5.45	15.05	11.76	15.41	13.02	16.64	13.23	13.75
US Buyout Mid Cap Index <sup>1</sup>	4.32	7.41	18.37	13.66	14.58	10.72	15.44	11.97	15.12
US Buyout Large Cap Index <sup>1</sup>	5.43	8.01	18.61	14.11	15.25	11.15	15.33	12.21	15.62
US Buyout Mega Cap Index <sup>1</sup>	5.58	8.12	18.81	13.46	16.51	11.57	14.09	11.29	—
Bloomberg Barclays Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60
Wilshire 5000 Total Market Index	3.83	3.04	14.66	11.85	13.36	10.23	9.73	6.86	9.65

The index is a horizon calculation based on data compiled from 849 US buyout funds (272 small cap, 292 mid cap, 180 large cap and 105 mega cap funds), including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

**US Buyout: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)**  
 Net to Limited Partners

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>US Buyout Index<sup>1</sup></b>	<b>18.55</b>	<b>13.56</b>	<b>15.91</b>	<b>11.41</b>	<b>14.69</b>	<b>11.71</b>	<b>13.26</b>
<b>mPME Analysis<sup>2</sup></b>							
Russell 2000® Index	17.56	10.37	12.74	10.93	10.48	8.76	9.32
Value-Add (bps)	99	320	316	49	421	295	393
Russell 2500™ Index	16.29	9.73	12.72	11.20	11.11	9.60	10.29
Value-Add (bps)	226	383	319	21	358	210	296
Russell 3000® Index	14.90	11.21	13.76	10.57	9.59	7.59	8.68
Value-Add (bps)	365	235	215	84	510	412	458
Russell Midcap® Index	12.43	9.18	12.92	10.80	11.26	9.57	10.42
Value-Add (bps)	611	439	299	61	343	214	283
S&P 500 Index	14.51	11.62	13.86	10.48	9.32	7.31	8.51
Value-Add (bps)	404	195	205	93	537	440	475
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>3</sup>	11.49	8.57	10.36	6.73	8.02	6.17	6.70
Value-Add (bps)	706	500	555	469	666	554	656

The index is a horizon calculation based on data compiled from 849 US buyout funds (272 small cap, 292 mid cap, 180 large cap and 105 mega cap funds), including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup> CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup> Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return								
1986 Q1	—	1992 Q3	2.56	1999 Q1	5.20	2005 Q3	7.37	2012 Q1	5.44
1986 Q2	4.54	1992 Q4	9.57	1999 Q2	9.55	2005 Q4	8.71	2012 Q2	0.37
1986 Q3	-1.67	1993 Q1	3.21	1999 Q3	2.53	2006 Q1	5.30	2012 Q3	4.11
1986 Q4	0.73	1993 Q2	6.15	1999 Q4	11.54	2006 Q2	4.08	2012 Q4	3.90
1987 Q1	4.24	1993 Q3	6.33	2000 Q1	13.48	2006 Q3	3.58	2013 Q1	5.08
1987 Q2	1.24	1993 Q4	6.95	2000 Q2	-2.69	2006 Q4	13.31	2013 Q2	3.45
1987 Q3	1.28	1994 Q1	0.87	2000 Q3	-2.35	2007 Q1	5.50	2013 Q3	5.21
1987 Q4	-1.86	1994 Q2	3.41	2000 Q4	-6.90	2007 Q2	7.65	2013 Q4	7.32
1988 Q1	2.63	1994 Q3	1.43	2001 Q1	-5.29	2007 Q3	0.68	2014 Q1	3.30
1988 Q2	4.44	1994 Q4	6.77	2001 Q2	2.98	2007 Q4	2.55	2014 Q2	4.84
1988 Q3	4.32	1995 Q1	3.11	2001 Q3	-8.29	2008 Q1	-2.49	2014 Q3	1.66
1988 Q4	2.15	1995 Q2	3.60	2001 Q4	-0.68	2008 Q2	-0.20	2014 Q4	3.56
1989 Q1	1.67	1995 Q3	3.82	2002 Q1	-0.09	2008 Q3	-7.18	2015 Q1	3.40
1989 Q2	4.02	1995 Q4	11.10	2002 Q2	-2.55	2008 Q4	-17.25	2015 Q2	4.35
1989 Q3	1.51	1996 Q1	5.80	2002 Q3	-4.58	2009 Q1	-3.68	2015 Q3	0.00
1989 Q4	1.38	1996 Q2	6.18	2002 Q4	0.06	2009 Q2	4.57	2015 Q4	1.97
1990 Q1	-0.28	1996 Q3	6.57	2003 Q1	0.16	2009 Q3	6.63	2016 Q1	0.47
1990 Q2	5.74	1996 Q4	7.02	2003 Q2	7.05	2009 Q4	6.67	2016 Q2	3.74
1990 Q3	-0.43	1997 Q1	0.98	2003 Q3	5.74	2010 Q1	4.98	2016 Q3	3.65
1990 Q4	1.34	1997 Q2	9.15	2003 Q4	9.68	2010 Q2	2.22	2016 Q4	4.00
1991 Q1	3.12	1997 Q3	6.32	2004 Q1	3.01	2010 Q3	4.96	2017 Q1	4.06
1991 Q2	1.14	1997 Q4	10.68	2004 Q2	3.74	2010 Q4	9.19	2017 Q2	4.53
1991 Q3	2.53	1998 Q1	9.91	2004 Q3	2.44	2011 Q1	5.42	2017 Q3	4.00
1991 Q4	3.70	1998 Q2	6.12	2004 Q4	16.07	2011 Q2	4.66	2017 Q4	5.16
1992 Q1	1.66	1998 Q3	-6.85	2005 Q1	1.18	2011 Q3	-4.61	2018 Q1	2.45
1992 Q2	1.24	1998 Q4	8.24	2005 Q2	8.23	2011 Q4	4.81	2018 Q2	5.24

The index is a horizon calculation based on data compiled from 849 US buyout funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns		One Year Rolling Returns	
Years	Horizon Return (%)	One Year Ended	Horizon Return (%)
1 Year	18.55	6/30/2018	18.55
2 Years	18.02	6/30/2017	17.55
3 Years	13.56	6/30/2016	6.24
4 Years	13.59	6/30/2015	13.64
5 Years	15.91	6/30/2014	22.81
6 Years	16.34	6/30/2013	17.75
7 Years	14.10	6/30/2012	5.77
8 Years	16.16	6/30/2011	26.43
9 Years	17.01	6/30/2010	22.05
10 Years	11.41	6/30/2009	-22.11
11 Years	10.31	6/30/2008	0.19
12 Years	11.91	6/30/2007	33.28
13 Years	12.96	6/30/2006	28.15
14 Years	14.01	6/30/2005	29.73
15 Years	14.69	6/30/2004	23.97

The index is a horizon calculation based on data compiled from 849 US buyout funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.



## US Buyout: Fund Since Inception Analysis

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### US Buyout: Since Inception IRR & Multiples by Fund Vintage Year

Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	27.65	20.13	25.28	25.66	33.75	14.63	33.12	2.45	0.00	2.45	18
1994	7.50	9.75	7.49	9.52	13.66	2.33	10.00	1.51	0.00	1.51	11
1995	13.54	12.52	10.88	13.70	28.49	-1.47	19.53	1.66	0.00	1.66	22
1996	10.25	8.65	7.94	8.38	11.80	0.64	20.04	1.60	0.00	1.60	23
1997	6.79	5.96	6.78	5.12	12.38	-1.25	14.92	1.43	0.00	1.43	40
1998	6.51	10.04	9.63	10.30	14.65	5.34	10.38	1.38	0.03	1.42	40
1999	16.08	12.03	12.08	12.38	19.16	7.40	11.78	1.96	0.01	1.97	36
2000	16.79	15.58	14.14	15.49	22.57	9.90	11.34	1.87	0.03	1.90	51
2001	23.08	20.21	18.24	19.21	31.68	11.40	16.31	2.11	0.11	2.22	19
2002	16.85	12.44	17.59	15.69	25.88	5.29	27.93	1.86	0.06	1.92	22
2003	14.65	12.34	11.63	12.34	15.94	3.12	10.96	1.91	0.07	1.98	24
2004	10.63	10.75	10.08	10.67	13.37	7.74	7.08	1.66	0.08	1.73	50
2005	8.07	7.40	8.27	9.69	14.21	3.95	15.22	1.48	0.13	1.61	56
2006	9.55	13.13	13.51	12.81	17.00	7.85	15.16	1.40	0.32	1.72	51
2007	13.17	12.87	13.75	12.43	16.21	7.96	10.99	1.23	0.50	1.73	57
2008	16.14	17.48	14.41	16.72	22.01	11.69	10.58	1.33	0.49	1.83	42
2009	22.18	21.06	22.64	21.77	27.13	14.24	13.57	1.23	1.01	2.25	19
2010	21.25	20.80	16.40	23.53	24.69	13.84	11.43	1.12	0.99	2.11	12
2011	18.40	17.83	16.08	17.88	22.38	9.69	10.53	0.68	0.98	1.65	38
2012	19.43	18.50	17.80	20.47	23.44	11.56	10.67	0.33	1.16	1.49	29
2013	13.28	13.28	14.11	15.94	21.67	9.01	12.24	0.22	1.08	1.31	32
2014	20.64	19.70	18.02	19.74	23.76	10.46	11.81	0.17	1.20	1.37	35
2015	12.11	2.63	4.61	9.02	15.39	-5.64	24.44	0.04	1.10	1.14	35
2016	7.63	15.31	1.28	16.41	8.56	-7.77	58.79	0.02	1.05	1.07	22

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark	Russell 2000® Index		Russell 2500™ Index		CA Benchmark	Russell 2000® Index	Russell 2500™ Index	CA Benchmark	Russell 2000® Index	Russell 2500™ Index
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	18	27.65	11.84	1,581	14.35	1,330	2.45	1.46	1.59	2.45	1.46	1.59
1994	11	7.50	7.48	2	9.64	-214	1.51	1.51	1.70	1.51	1.51	1.70
1995	22	13.54	7.70	584	10.18	335	1.66	1.36	1.50	1.66	1.36	1.50
1996	23	10.25	6.84	341	8.87	137	1.60	1.39	1.53	1.60	1.39	1.53
1997	40	6.79	7.28	-50	9.04	-226	1.43	1.45	1.58	1.43	1.44	1.58
1998	40	6.51	7.66	-114	9.12	-261	1.42	1.49	1.60	1.38	1.44	1.55
1999	36	16.08	8.47	761	9.57	651	1.97	1.39	1.46	1.96	1.39	1.45
2000	51	16.79	9.76	703	10.63	616	1.90	1.42	1.47	1.87	1.40	1.44
2001	19	23.08	8.83	1,425	9.67	1,342	2.22	1.40	1.45	2.11	1.35	1.39
2002	22	16.85	8.09	876	8.98	787	1.92	1.42	1.48	1.86	1.35	1.41
2003	24	14.65	6.30	835	7.11	754	1.98	1.38	1.43	1.91	1.31	1.37
2004	50	10.63	6.15	448	6.97	366	1.73	1.40	1.46	1.66	1.32	1.38
2005	56	8.07	7.75	32	8.55	-48	1.61	1.59	1.67	1.48	1.44	1.51
2006	51	9.55	8.35	120	9.00	56	1.72	1.60	1.66	1.40	1.31	1.36
2007	57	13.17	12.30	87	12.87	30	1.73	1.66	1.69	1.23	1.18	1.21
2008	42	16.14	13.67	247	14.23	190	1.83	1.64	1.67	1.33	1.22	1.24
2009	19	22.18	13.16	901	13.33	885	2.25	1.59	1.60	1.23	0.95	0.96
2010	12	21.25	13.01	823	12.99	826	2.11	1.58	1.57	1.12	0.85	0.86
2011	38	18.40	12.54	586	12.22	618	1.65	1.40	1.39	0.68	0.60	0.60
2012	29	19.43	12.93	650	12.04	739	1.49	1.31	1.28	0.33	0.29	0.29
2013	32	13.28	13.30	-3	12.23	104	1.31	1.31	1.28	0.22	0.22	0.22
2014	35	20.64	14.50	615	13.24	740	1.37	1.25	1.22	0.17	0.16	0.16
2015	35	12.11	17.91	-580	15.89	-377	1.14	1.21	1.18	0.04	0.04	0.04
2016	22	7.63	18.20	-1,057	16.19	-856	1.07	1.18	1.16	0.02	0.03	0.03

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)		
		CA Benchmark	Russell 3000® Index		Russell Midcap® Index	CA Benchmark	Russell 3000® Index		Russell Midcap® Index	CA Benchmark
			IRR	mPME IRR			TVPI	mPME TVPI		
1993	18	27.65	18.47	918	16.30	1,135	2.45	1.70	1.68	2.45
1994	11	7.50	7.46	4	10.38	-288	1.51	1.45	1.76	1.51
1995	22	13.54	10.31	323	11.36	218	1.66	1.43	1.55	1.66
1996	23	10.25	4.91	533	9.07	118	1.60	1.25	1.55	1.60
1997	40	6.79	2.46	433	8.52	-173	1.43	1.14	1.55	1.43
1998	40	6.51	3.15	336	8.70	-219	1.42	1.19	1.58	1.38
1999	36	16.08	4.01	1,207	9.54	654	1.97	1.18	1.46	1.96
2000	51	16.79	6.58	1,020	10.85	594	1.90	1.28	1.49	1.87
2001	19	23.08	7.57	1,551	10.26	1,282	2.22	1.35	1.48	2.11
2002	22	16.85	7.17	968	9.61	724	1.92	1.37	1.51	1.86
2003	24	14.65	5.87	878	7.49	716	1.98	1.35	1.46	1.91
2004	50	10.63	5.96	467	7.20	343	1.73	1.39	1.48	1.66
2005	56	8.07	7.69	38	8.71	-64	1.61	1.59	1.68	1.48
2006	51	9.55	8.23	132	9.03	52	1.72	1.60	1.66	1.40
2007	57	13.17	12.55	62	13.06	12	1.73	1.68	1.71	1.23
2008	42	16.14	14.11	203	14.53	161	1.83	1.67	1.68	1.33
2009	19	22.18	13.93	825	13.49	869	2.25	1.63	1.60	1.23
2010	12	21.25	13.78	747	13.06	819	2.11	1.62	1.58	1.12
2011	38	18.40	13.00	540	11.97	643	1.65	1.42	1.38	0.68
2012	29	19.43	12.48	695	10.89	854	1.49	1.29	1.25	0.33
2013	32	13.28	12.53	75	10.75	252	1.31	1.29	1.24	0.22
2014	35	20.64	13.22	743	11.33	931	1.37	1.22	1.19	0.17
2015	35	12.11	14.79	-268	12.69	-58	1.14	1.17	1.14	0.04
2016	22	7.63	15.08	-745	12.76	-513	1.07	1.15	1.13	0.02

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)			
		CA Benchmark		S&P 500 Index		MSCI All Country World Index (gross)		CA Benchmark		S&P 500 Index	
		IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	TVPI	mPME TVPI	DPI
1993	18	27.65	19.66	799	11.63	1,602	2.45	1.74	1.43	2.45	1.74
1994	11	7.50	7.46	4	5.50	200	1.51	1.44	1.34	1.51	1.44
1995	22	13.54	10.77	276	6.88	666	1.66	1.44	1.29	1.66	1.44
1996	23	10.25	4.50	574	4.13	612	1.60	1.23	1.22	1.60	1.23
1997	40	6.79	1.64	515	3.09	370	1.43	1.09	1.18	1.43	1.08
1998	40	6.51	2.40	411	3.85	266	1.42	1.14	1.23	1.38	1.11
1999	36	16.08	3.25	1,283	5.82	1,026	1.97	1.14	1.27	1.96	1.14
2000	51	16.79	5.92	1,086	8.49	829	1.90	1.25	1.36	1.87	1.23
2001	19	23.08	7.11	1,597	8.62	1,446	2.22	1.33	1.36	2.11	1.28
2002	22	16.85	6.74	1,011	7.97	887	1.92	1.35	1.38	1.86	1.28
2003	24	14.65	5.56	909	5.64	901	1.98	1.33	1.31	1.91	1.27
2004	50	10.63	5.73	490	4.60	603	1.73	1.37	1.28	1.66	1.29
2005	56	8.07	7.50	57	4.87	320	1.61	1.57	1.34	1.48	1.42
2006	51	9.55	8.07	149	5.10	445	1.72	1.59	1.33	1.40	1.29
2007	57	13.17	12.47	70	8.55	463	1.73	1.68	1.42	1.23	1.20
2008	42	16.14	14.06	208	9.84	630	1.83	1.67	1.43	1.33	1.24
2009	19	22.18	14.02	815	9.86	1,232	2.25	1.64	1.42	1.23	0.99
2010	12	21.25	13.92	733	9.93	1,132	2.11	1.63	1.42	1.12	0.89
2011	38	18.40	13.14	525	9.59	881	1.65	1.42	1.30	0.68	0.61
2012	29	19.43	12.57	686	9.65	978	1.49	1.30	1.22	0.33	0.29
2013	32	13.28	12.58	69	9.93	335	1.31	1.29	1.22	0.22	0.22
2014	35	20.64	13.18	747	10.66	998	1.37	1.22	1.18	0.17	0.16
2015	35	12.11	14.42	-231	12.09	3	1.14	1.16	1.14	0.04	0.04
2016	22	7.63	14.67	-704	12.33	-470	1.07	1.15	1.12	0.02	0.03

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**US Buyout: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.45	2.32	2.16	3.36	1.72	18
1994	1.51	1.52	1.34	1.82	1.16	11
1995	1.66	1.60	1.56	2.21	0.91	22
1996	1.60	1.47	1.33	1.76	1.05	23
1997	1.43	1.30	1.38	1.68	0.89	40
1998	1.42	1.66	1.54	2.03	1.34	40
1999	1.97	1.73	1.56	2.20	1.30	36
2000	1.90	1.94	1.93	2.28	1.48	51
2001	2.22	1.92	1.78	2.22	1.52	19
2002	1.92	1.87	1.92	2.39	1.38	22
2003	1.98	1.74	1.81	2.06	1.23	24
2004	1.73	1.71	1.65	1.92	1.46	50
2005	1.61	1.67	1.61	2.07	1.29	56
2006	1.72	1.90	1.79	2.11	1.54	51
2007	1.73	1.73	1.74	2.03	1.45	57
2008	1.83	1.86	1.76	2.02	1.61	42
2009	2.25	2.11	2.32	2.36	1.82	19
2010	2.11	2.29	1.80	2.19	1.60	12
2011	1.65	1.65	1.57	1.75	1.43	38
2012	1.49	1.59	1.48	1.61	1.33	29
2013	1.31	1.36	1.32	1.44	1.21	32
2014	1.37	1.35	1.29	1.38	1.16	35
2015	1.14	1.05	1.04	1.18	0.92	35
2016	1.07	1.10	1.01	1.11	0.92	22

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**US Buyout: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.45	2.32	2.16	3.36	1.72	18
1994	1.51	1.52	1.34	1.82	1.16	11
1995	1.66	1.60	1.56	2.21	0.91	22
1996	1.60	1.47	1.33	1.76	1.05	23
1997	1.43	1.29	1.38	1.68	0.89	40
1998	1.38	1.63	1.46	1.96	1.29	40
1999	1.96	1.72	1.54	2.11	1.28	36
2000	1.87	1.83	1.88	2.21	1.48	51
2001	2.11	1.86	1.78	2.18	1.48	19
2002	1.86	1.81	1.89	2.39	1.30	22
2003	1.91	1.65	1.73	2.04	1.15	24
2004	1.66	1.59	1.51	1.82	1.33	50
2005	1.48	1.52	1.44	1.77	1.02	56
2006	1.40	1.54	1.50	1.83	1.26	51
2007	1.23	1.33	1.30	1.72	0.85	57
2008	1.33	1.33	1.27	1.59	0.96	42
2009	1.23	1.31	1.47	1.79	0.70	19
2010	1.12	1.00	0.97	1.12	0.63	12
2011	0.68	0.67	0.62	0.95	0.35	38
2012	0.33	0.47	0.43	0.54	0.20	29
2013	0.22	0.29	0.18	0.47	0.05	32
2014	0.17	0.17	0.10	0.22	0.01	35
2015	0.04	0.05	0.00	0.05	0.00	35
2016	0.02	0.08	0.00	0.01	0.00	22

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**US Buyout: Residual Value to Paid In Capital Multiple (RVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	0.00	0.00	0.00	18
1994	0.00	0.00	0.00	0.00	0.00	11
1995	0.00	0.00	0.00	0.00	0.00	22
1996	0.00	0.00	0.00	0.00	0.00	23
1997	0.00	0.00	0.00	0.00	0.00	40
1998	0.03	0.03	0.00	0.00	0.00	40
1999	0.01	0.01	0.00	0.00	0.00	36
2000	0.03	0.11	0.00	0.02	0.00	51
2001	0.11	0.06	0.00	0.06	0.00	19
2002	0.06	0.06	0.03	0.09	0.00	22
2003	0.07	0.09	0.02	0.08	0.01	24
2004	0.08	0.13	0.04	0.16	0.01	50
2005	0.13	0.16	0.09	0.22	0.01	56
2006	0.32	0.35	0.32	0.47	0.13	51
2007	0.50	0.40	0.33	0.62	0.17	57
2008	0.49	0.53	0.54	0.68	0.28	42
2009	1.01	0.81	0.85	1.02	0.55	19
2010	0.99	1.30	0.88	1.36	0.70	12
2011	0.98	0.97	1.01	1.19	0.67	38
2012	1.16	1.12	1.16	1.26	0.93	29
2013	1.08	1.07	1.11	1.21	0.86	32
2014	1.20	1.18	1.17	1.29	1.09	35
2015	1.10	1.00	1.01	1.13	0.89	35
2016	1.05	1.02	1.00	1.05	0.86	22

Notes: Based on data compiled from 784 US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## Ex US Buyout: Fund Index Analysis

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## Ex US Buyout: Fund Index Summary: Horizon Pooled Return Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Ex US Buyout Index<sup>1</sup></b>	<b>1.76</b>	<b>4.32</b>	<b>17.23</b>	<b>14.50</b>	<b>13.10</b>	<b>7.33</b>	<b>14.29</b>	<b>13.31</b>	<b>13.89</b>
Bloomberg Barclays Capital Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
MSCI Emerging Markets Index (gross)	-7.86	-6.51	8.59	5.98	5.39	2.60	11.07	8.86	7.13
MSCI Europe Index (US\$) (net)	-1.27	-3.23	5.28	4.22	6.21	2.36	7.07	3.96	7.52
MSCI Europe Index (€) (net)	4.00	-0.48	2.85	2.61	8.51	5.47	6.95	3.59	7.56
MSCI Pacific Index (net)	-1.35	-2.02	9.91	6.37	6.93	3.96	7.75	5.29	2.92
MSCI World Ex US Index (net)	-0.75	-2.77	7.04	4.87	6.23	2.63	7.31	4.46	5.59
MSCI World Index (net)	1.73	0.43	11.09	8.48	9.94	6.26	8.14	5.22	7.23
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60

The index is a horizon calculation based on data compiled from 682 Ex US buyout funds, including fully liquidated partnerships, formed between 1987 and 2017.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Ex US Buyout: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Ex US Buyout Index<sup>1</sup></b>	<b>17.23</b>	<b>14.50</b>	<b>13.10</b>	<b>7.33</b>	<b>14.29</b>	<b>13.31</b>	<b>13.89</b>
<b>mPME Analysis<sup>2</sup></b>							
MSCI EAFE Index (net)	6.96	4.33	6.63	3.74	5.50	4.66	4.74
Value-Add (bps)	1,027	1,017	648	359	879	865	915
MSCI Europe Index (net)	5.37	3.68	6.62	3.41	5.37	4.51	4.87
Value-Add (bps)	1,185	1,082	649	392	892	880	902
S&P 500 Index	14.49	11.28	13.77	10.90	9.76	8.54	8.94
Value-Add (bps)	274	322	-67	-357	454	477	495
Constructed Index: Global Financial Data Emerging Markets/MSCI Emerging Markets (gross) <sup>3</sup>	9.02	5.31	5.07	2.95	8.71	7.94	7.65
Value-Add (bps)	820	920	803	438	558	537	624
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>4</sup>	11.48	8.08	10.15	7.05	7.84	6.81	6.99
Value-Add (bps)	574	642	295	27	645	650	691

The index is a horizon calculation based on data compiled from 682 Ex US buyout funds, including fully liquidated partnerships, formed between 1987 and 2017.

<sup>1</sup>Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup>CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup>Constructed MSCI EM Index: Data from 1/1/1986 to 12/31/1987 represented by GFD Emerging Markets price return. Data from 1/1/1988 to present represented by MSCI Emerging Markets total return gross.

<sup>4</sup>Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Buyout: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return
1987 Q1	—
1987 Q2	0.00
1987 Q3	0.58
1987 Q4	6.44
1988 Q1	-9.47
1988 Q2	-5.12
1988 Q3	-11.37
1988 Q4	13.75
1989 Q1	-3.59
1989 Q2	-9.17
1989 Q3	2.55
1989 Q4	1.49
1990 Q1	0.00
1990 Q2	9.39
1990 Q3	1.59
1990 Q4	4.33
1991 Q1	-7.76
1991 Q2	-5.65
1991 Q3	6.48
1991 Q4	5.44
1992 Q1	-5.90
1992 Q2	6.67
1992 Q3	-4.24
1992 Q4	-2.47
1993 Q1	0.10
1993 Q2	0.69
1993 Q3	2.54

Quarter Ending	Horizon Return
1993 Q4	18.81
1994 Q1	10.18
1994 Q2	0.38
1994 Q3	3.36
1994 Q4	2.44
1995 Q1	5.76
1995 Q2	4.09
1995 Q3	3.87
1995 Q4	2.60
1996 Q1	1.10
1996 Q2	6.49
1996 Q3	6.00
1996 Q4	24.04
1997 Q1	-1.92
1997 Q2	5.75
1997 Q3	3.13
1997 Q4	9.82
1998 Q1	2.25
1998 Q2	12.21
1998 Q3	2.98
1998 Q4	0.90
1999 Q1	-0.62
1999 Q2	6.26
1999 Q3	7.86
1999 Q4	9.84
2000 Q1	3.49
2000 Q2	2.83

Quarter Ending	Horizon Return
2000 Q3	-2.43
2000 Q4	3.32
2001 Q1	-5.71
2001 Q2	-0.62
2001 Q3	1.58
2001 Q4	-4.13
2002 Q1	-1.08
2002 Q2	8.80
2002 Q3	-1.91
2002 Q4	6.07
2003 Q1	1.36
2003 Q2	7.84
2003 Q3	1.90
2003 Q4	14.56
2004 Q1	0.86
2004 Q2	6.08
2004 Q3	5.67
2004 Q4	20.32
2005 Q1	0.91
2005 Q2	6.13
2005 Q3	5.47
2005 Q4	11.92
2006 Q1	7.52
2006 Q2	17.72
2006 Q3	3.57
2006 Q4	22.07
2007 Q1	3.63

Quarter Ending	Horizon Return
2007 Q2	15.38
2007 Q3	6.81
2007 Q4	5.86
2008 Q1	4.13
2008 Q2	-3.97
2008 Q3	-16.06
2008 Q4	-22.54
2009 Q1	-7.83
2009 Q2	9.62
2009 Q3	9.35
2009 Q4	8.26
2010 Q1	-1.18
2010 Q2	-2.80
2010 Q3	11.76
2010 Q4	8.96
2011 Q1	5.55
2011 Q2	6.38
2011 Q3	-9.31
2011 Q4	0.61
2012 Q1	7.68
2012 Q2	-1.89
2012 Q3	3.85
2012 Q4	4.69
2013 Q1	0.85
2013 Q2	1.84
2013 Q3	6.46
2013 Q4	7.16

Quarter Ending	Horizon Return
2014 Q1	2.82
2014 Q2	4.88
2014 Q3	-4.22
2014 Q4	0.50
2015 Q1	-2.42
2015 Q2	6.74
2015 Q3	-1.34
2015 Q4	3.18
2016 Q1	4.26
2016 Q2	1.34
2016 Q3	4.61
2016 Q4	0.80
2017 Q1	4.75
2017 Q2	9.71
2017 Q3	6.10
2017 Q4	5.72
2018 Q1	2.49
2018 Q2	1.76

The index is a horizon calculation based on data compiled from 682 Ex US buyout funds, including fully liquidated partnerships, formed between 1987 and 2017. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Buyout: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns		One Year Rolling Returns	
Years	Horizon Return (%)	Years	Horizon Return (%)
1 Year	17.23	16 Years	14.29
2 Years	19.18	17 Years	13.87
3 Years	14.50	18 Years	13.04
4 Years	9.81	19 Years	13.38
5 Years	13.10	20 Years	13.31
6 Years	12.90	21 Years	13.54
7 Years	9.63	22 Years	13.75
8 Years	13.42	23 Years	13.76
9 Years	13.37	24 Years	13.78
10 Years	7.33	25 Years	13.89
11 Years	7.69		
12 Years	10.21		
13 Years	12.29		
14 Years	13.63		
15 Years	14.29		

The index is a horizon calculation based on data compiled from 682 Ex US buyout funds, including fully liquidated partnerships, formed between 1987 and 2017. All returns are net of fees, expenses, and carried interest.



## Ex US Buyout: Fund Since Inception Analysis

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**Ex US Buyout: Since Inception IRR & Multiples by Fund Vintage Year**

Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	18.60	15.25	10.60	18.12	—	—	—	2.01	0.00	2.01	7
1994	31.62	25.61	18.94	23.76	45.76	10.82	18.06	2.75	0.00	2.75	14
1995	27.62	16.91	11.98	18.44	20.04	0.57	25.47	2.14	0.00	2.14	13
1996	20.29	12.62	10.78	10.56	18.54	-2.53	23.62	1.86	0.00	1.86	16
1997	12.43	11.00	11.21	12.39	18.91	4.68	22.16	1.80	0.00	1.80	33
1998	15.01	14.31	13.60	17.28	21.61	6.46	12.35	2.14	0.01	2.15	28
1999	17.15	17.42	16.85	16.62	22.90	5.32	18.01	1.94	0.01	1.94	29
2000	28.75	25.15	25.84	26.91	38.11	17.20	20.48	2.53	0.02	2.55	33
2001	29.10	25.79	26.00	26.49	33.70	15.14	17.94	2.11	0.00	2.11	20
2002	22.49	16.76	19.96	20.01	30.40	12.22	28.94	2.07	0.02	2.09	23
2003	19.48	20.40	21.47	21.41	33.43	9.76	22.41	1.63	0.03	1.66	20
2004	12.73	18.55	9.42	19.71	23.68	6.83	24.27	1.64	0.11	1.74	31
2005	5.02	6.71	7.11	6.89	12.39	0.80	12.98	1.22	0.08	1.30	55
2006	5.57	5.65	6.25	6.75	11.32	1.95	12.76	1.18	0.17	1.35	56
2007	9.73	7.06	7.67	7.71	13.16	3.76	14.40	1.29	0.29	1.58	60
2008	12.00	5.53	9.18	9.04	15.66	3.55	21.74	1.19	0.45	1.64	31
2009	7.88	10.22	10.19	9.93	15.96	1.83	13.67	0.71	0.66	1.37	15
2010	10.51	8.36	7.25	9.99	17.34	-0.82	12.69	0.62	0.80	1.42	18
2011	15.48	11.77	9.90	12.31	17.92	5.64	12.14	0.60	1.01	1.61	29
2012	16.80	13.42	14.28	14.08	19.53	8.90	8.51	0.47	1.13	1.60	31
2013	17.83	16.60	17.06	20.33	23.50	8.26	13.18	0.26	1.13	1.39	22
2014	18.76	16.55	15.16	17.45	22.66	10.99	9.59	0.13	1.19	1.31	25
2015	14.49	2.35	7.69	8.84	20.15	-6.65	25.20	0.09	1.08	1.16	21
2016	0.11	-2.58	-2.78	3.22	6.93	-13.81	23.37	0.00	1.00	1.00	19

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

**Ex US Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)				Total Value to Paid In (TVPI)				Distributions to Paid In (DPI)			
		CA Benchmark	MSCI EAFE Index (net)		MSCI Europe Index (net)		CA Benchmark	MSCI EAFE Index (net)	MSCI Europe Index (net)	CA Benchmark	MSCI EAFE Index (net)	MSCI Europe Index (net)	
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI	mPME DPI
1993	7	18.60	7.58	1,102	17.46	114	2.01	1.32	1.80	2.01	1.32	1.80	
1994	14	31.62	6.67	2,495	15.80	1,582	2.75	1.20	1.50	2.75	1.20	1.50	
1995	13	27.62	6.07	2,155	11.84	1,578	2.14	1.17	1.33	2.14	1.17	1.33	
1996	16	20.29	6.15	1,415	9.00	1,129	1.86	1.21	1.31	1.86	1.21	1.31	
1997	33	12.43	2.83	960	3.00	943	1.80	1.14	1.15	1.80	1.14	1.15	
1998	28	15.01	3.44	1,157	3.72	1,129	2.15	1.17	1.18	2.14	1.16	1.18	
1999	29	17.15	6.55	1,060	7.15	1,000	1.94	1.28	1.31	1.94	1.28	1.30	
2000	33	28.75	11.62	1,713	12.08	1,667	2.55	1.39	1.41	2.53	1.38	1.40	
2001	20	29.10	14.16	1,494	14.58	1,452	2.11	1.41	1.43	2.11	1.41	1.43	
2002	23	22.49	8.28	1,421	8.70	1,379	2.09	1.31	1.32	2.07	1.30	1.31	
2003	20	19.48	6.20	1,328	6.79	1,269	1.66	1.22	1.24	1.63	1.19	1.21	
2004	31	12.73	3.06	967	3.21	952	1.74	1.15	1.15	1.64	1.09	1.10	
2005	55	5.02	1.45	357	1.32	369	1.30	1.08	1.07	1.22	1.01	1.00	
2006	56	5.57	2.74	283	2.56	301	1.35	1.16	1.15	1.18	1.02	1.02	
2007	60	9.73	4.74	500	4.64	509	1.58	1.24	1.23	1.29	1.06	1.05	
2008	31	12.00	6.40	560	6.38	562	1.64	1.29	1.29	1.19	0.97	0.97	
2009	15	7.88	6.06	181	5.72	216	1.37	1.27	1.25	0.71	0.68	0.67	
2010	18	10.51	6.38	412	6.00	451	1.42	1.24	1.22	0.62	0.56	0.56	
2011	29	15.48	6.02	946	5.37	1,011	1.61	1.20	1.18	0.60	0.48	0.47	
2012	31	16.80	5.50	1,129	4.65	1,214	1.60	1.17	1.14	0.47	0.37	0.36	
2013	22	17.83	6.53	1,130	5.53	1,229	1.39	1.13	1.11	0.26	0.22	0.22	
2014	25	18.76	8.60	1,016	7.76	1,099	1.31	1.14	1.12	0.13	0.12	0.12	
2015	21	14.49	9.17	532	8.51	598	1.16	1.10	1.09	0.09	0.09	0.09	
2016	19	0.11	5.12	-501	3.70	-359	1.00	1.04	1.03	0.00	0.00	0.00	

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

**Ex US Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)					Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)		
		CA Benchmark	S&P 500 Index		MSCI Emerging Markets Index (gross)		CA Benchmark	S&P 500 Index	MSCI Emerging Markets Index (gross)	CA Benchmark	S&P 500 Index	MSCI Emerging Markets Index (gross)
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	7	18.60	22.27	-367	0.64	1,796	2.01	2.06	1.03	2.01	2.06	1.03
1994	14	31.62	20.90	1,072	-2.53	3,415	2.75	1.69	0.93	2.75	1.69	0.93
1995	13	27.62	15.20	1,242	1.50	2,612	2.14	1.40	1.05	2.14	1.40	1.05
1996	16	20.29	11.12	917	5.71	1,459	1.86	1.35	1.26	1.86	1.35	1.26
1997	33	12.43	1.88	1,054	9.62	281	1.80	1.09	1.58	1.80	1.09	1.58
1998	28	15.01	0.88	1,412	12.12	289	2.15	1.04	1.75	2.14	1.04	1.74
1999	29	17.15	3.18	1,397	15.52	163	1.94	1.13	1.84	1.94	1.13	1.83
2000	33	28.75	6.02	2,273	22.53	622	2.55	1.20	1.93	2.53	1.19	1.92
2001	20	29.10	8.14	2,096	26.29	280	2.11	1.25	1.90	2.11	1.25	1.89
2002	23	22.49	6.91	1,558	18.15	434	2.09	1.31	1.72	2.07	1.30	1.71
2003	20	19.48	6.79	1,269	14.84	464	1.66	1.30	1.52	1.63	1.25	1.49
2004	31	12.73	6.19	655	8.58	415	1.74	1.36	1.43	1.64	1.26	1.36
2005	55	5.02	6.66	-164	4.13	88	1.30	1.46	1.23	1.22	1.33	1.16
2006	56	5.57	9.14	-356	2.87	270	1.35	1.65	1.16	1.18	1.42	1.03
2007	60	9.73	12.03	-230	2.61	713	1.58	1.74	1.12	1.29	1.44	0.96
2008	31	12.00	14.15	-214	3.57	843	1.64	1.78	1.16	1.19	1.28	0.86
2009	15	7.88	13.68	-580	3.62	425	1.37	1.71	1.16	0.71	0.88	0.61
2010	18	10.51	13.80	-330	4.00	650	1.42	1.58	1.15	0.62	0.69	0.51
2011	29	15.48	13.10	238	5.19	1,029	1.61	1.49	1.17	0.60	0.57	0.46
2012	31	16.80	12.60	420	5.57	1,122	1.60	1.42	1.17	0.47	0.44	0.37
2013	22	17.83	12.84	499	8.70	913	1.39	1.27	1.17	0.26	0.24	0.23
2014	25	18.76	14.03	473	10.95	781	1.31	1.23	1.17	0.13	0.13	0.13
2015	21	14.49	14.58	-9	10.90	359	1.16	1.16	1.12	0.09	0.09	0.09
2016	19	0.11	13.03	-1,292	4.15	-404	1.00	1.10	1.03	0.00	0.00	0.00

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

**Ex US Buyout: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)		Total Value to Paid In (TVPI)		Distributions to Paid In (DPI)	
		CA Benchmark	MSCI All Country World Index (gross)		CA Benchmark	MSCI All Country World Index (gross)	MSCI All Country World Index (gross)
			IRR	mPME IRR	Value-Add	TVPI	mPME TVPI
1993	7	18.60		13.24	535	2.01	1.58
1994	14	31.62		12.17	1,945	2.75	1.38
1995	13	27.62		9.54	1,808	2.14	1.27
1996	16	20.29		8.17	1,213	1.86	1.28
1997	33	12.43		2.64	979	1.80	1.13
1998	28	15.01		2.61	1,240	2.15	1.12
1999	29	17.15		5.44	1,171	1.94	1.24
2000	33	28.75		9.61	1,914	2.55	1.33
2001	20	29.10		12.05	1,705	2.11	1.37
2002	23	22.49		8.36	1,413	2.09	1.34
2003	20	19.48		7.25	1,223	1.66	1.29
2004	31	12.73		5.23	751	1.74	1.28
2005	55	5.02		4.35	67	1.30	1.27
2006	56	5.57		5.88	-31	1.35	1.37
2007	60	9.73		8.00	174	1.58	1.44
2008	31	12.00		9.78	223	1.64	1.49
2009	15	7.88		9.49	-161	1.37	1.46
2010	18	10.51		9.74	77	1.42	1.38
2011	29	15.48		9.49	599	1.61	1.34
2012	31	16.80		9.15	765	1.60	1.29
2013	22	17.83		10.18	765	1.39	1.21
2014	25	18.76		11.90	686	1.31	1.19
2015	21	14.49		12.44	205	1.16	1.14
2016	19	0.11		9.45	-934	1.00	1.07

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Ex US Buyout: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.01	2.03	1.68	—	—	7
1994	2.75	2.23	2.01	2.62	1.56	14
1995	2.14	1.79	1.58	1.96	1.06	13
1996	1.86	1.53	1.59	1.81	0.85	16
1997	1.80	1.66	1.80	2.12	1.18	33
1998	2.15	2.39	1.78	2.42	1.48	28
1999	1.94	1.95	1.93	2.35	1.26	29
2000	2.55	2.37	2.18	2.95	1.87	33
2001	2.11	2.22	2.19	2.81	1.73	20
2002	2.09	2.02	1.98	2.25	1.52	23
2003	1.66	1.83	1.75	2.39	1.43	20
2004	1.74	1.90	1.51	2.23	1.30	31
2005	1.30	1.39	1.48	1.66	1.03	55
2006	1.35	1.40	1.40	1.72	1.11	56
2007	1.58	1.42	1.46	1.75	1.20	60
2008	1.64	1.46	1.42	1.82	1.12	31
2009	1.37	1.54	1.54	1.79	1.08	15
2010	1.42	1.37	1.29	1.67	0.95	18
2011	1.61	1.49	1.35	1.80	1.21	29
2012	1.60	1.46	1.46	1.73	1.23	31
2013	1.39	1.50	1.39	1.61	1.12	22
2014	1.31	1.30	1.25	1.40	1.20	25
2015	1.16	1.04	1.08	1.23	0.94	21
2016	1.00	1.00	0.98	1.08	0.90	19

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Ex US Buyout: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	2.01	2.03	1.68	—	—	7
1994	2.75	2.23	2.01	2.62	1.56	14
1995	2.14	1.79	1.58	1.96	1.06	13
1996	1.86	1.53	1.59	1.81	0.85	16
1997	1.80	1.66	1.80	2.12	1.18	33
1998	2.14	2.38	1.78	2.42	1.48	28
1999	1.94	1.94	1.93	2.23	1.18	29
2000	2.53	2.35	2.18	2.95	1.74	33
2001	2.11	2.22	2.19	2.81	1.73	20
2002	2.07	2.00	1.95	2.23	1.52	23
2003	1.63	1.80	1.68	2.39	1.35	20
2004	1.64	1.79	1.48	2.16	1.21	31
2005	1.22	1.31	1.36	1.63	0.86	55
2006	1.18	1.20	1.22	1.51	0.87	56
2007	1.29	1.15	1.23	1.45	0.76	60
2008	1.19	1.05	1.11	1.44	0.60	31
2009	0.71	0.81	0.84	1.19	0.48	15
2010	0.62	0.59	0.48	0.87	0.13	18
2011	0.60	0.60	0.52	0.88	0.18	29
2012	0.47	0.40	0.34	0.63	0.16	31
2013	0.26	0.39	0.21	0.51	0.03	22
2014	0.13	0.17	0.01	0.19	0.00	25
2015	0.09	0.12	0.00	0.05	0.00	21
2016	0.00	0.01	0.00	0.00	0.00	19

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Ex US Buyout: Residual Value to Paid In Capital Multiple (RVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	0.00	—	—	7
1994	0.00	0.00	0.00	0.00	0.00	14
1995	0.00	0.00	0.00	0.00	0.00	13
1996	0.00	0.00	0.00	0.00	0.00	16
1997	0.00	0.00	0.00	0.00	0.00	33
1998	0.01	0.01	0.00	0.00	0.00	28
1999	0.01	0.01	0.00	0.00	0.00	29
2000	0.02	0.03	0.00	0.01	0.00	33
2001	0.00	0.00	0.00	0.00	0.00	20
2002	0.02	0.02	0.00	0.02	0.00	23
2003	0.03	0.03	0.00	0.01	0.00	20
2004	0.11	0.11	0.02	0.07	0.00	31
2005	0.08	0.08	0.04	0.11	0.00	55
2006	0.17	0.20	0.12	0.28	0.02	56
2007	0.29	0.28	0.20	0.43	0.08	60
2008	0.45	0.41	0.50	0.67	0.05	31
2009	0.66	0.72	0.49	0.90	0.35	15
2010	0.80	0.78	0.80	0.92	0.61	18
2011	1.01	0.90	0.79	1.18	0.69	29
2012	1.13	1.06	1.05	1.21	0.90	31
2013	1.13	1.11	1.04	1.26	0.95	22
2014	1.19	1.14	1.15	1.28	1.08	25
2015	1.08	0.92	0.99	1.20	0.83	21
2016	1.00	0.99	0.98	1.06	0.90	19

Notes: Based on data compiled from 649 Ex US buyout funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## Growth Equity: Fund Index Analysis

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## Growth Equity: Fund Index Summary: Horizon Pooled Return Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Growth Equity Index<sup>1</sup></b>	<b>6.06</b>	<b>10.59</b>	<b>22.69</b>	<b>12.72</b>	<b>14.97</b>	<b>11.57</b>	<b>13.60</b>	<b>13.75</b>	<b>14.99</b>
Bloomberg Barclays Capital Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78	3.71	4.73	5.15
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78	9.57	7.60	10.59
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46	10.85	9.17	10.55
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21	9.58	6.65	9.58
MSCI Emerging Markets Index (gross)	-7.86	-6.51	8.59	5.98	5.39	2.60	11.07	8.86	7.13
MSCI Europe Index (US\$) (net)	-1.27	-3.23	5.28	4.22	6.21	2.36	7.07	3.96	7.52
MSCI Europe Index (€) (net)	4.00	-0.48	2.85	2.61	8.51	5.47	6.95	3.59	7.56
MSCI Pacific Index (net)	-1.35	-2.02	9.91	6.37	6.93	3.96	7.75	5.29	2.92
MSCI World Ex US Index (net)	-0.75	-2.77	7.04	4.87	6.23	2.63	7.31	4.46	5.59
MSCI World Index (net)	1.73	0.43	11.09	8.48	9.94	6.26	8.14	5.22	7.23
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60	10.75	7.13	9.93
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20	9.54	6.74	9.70
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60	10.50	8.03	9.59
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17	9.30	6.46	9.60

The index is a horizon calculation based on data compiled from 592 growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

Growth Equity: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners

CA Index	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	25-Year
<b>Growth Equity Index<sup>1</sup></b>	<b>22.69</b>	<b>12.72</b>	<b>14.97</b>	<b>11.57</b>	<b>13.60</b>	<b>13.75</b>	<b>14.99</b>
<b>mPME Analysis<sup>2</sup></b>							
MSCI EAFE Index (net)	6.81	5.31	6.46	4.32	5.86	4.93	5.06
Value-Add (bps)	1,588	741	852	725	773	882	994
MSCI Europe Index (net)	5.24	4.64	6.16	3.91	5.66	4.66	5.25
Value-Add (bps)	1,744	808	881	766	794	909	974
S&P 500 Index	14.43	11.97	13.43	11.39	10.26	8.83	9.53
Value-Add (bps)	826	75	154	19	333	492	547
Russell 2000® Index	17.59	11.09	12.50	11.56	10.90	9.72	10.01
Value-Add (bps)	510	163	247	1	270	403	499
Russell 3000® Index	14.83	11.63	13.31	11.42	10.43	9.02	9.65
Value-Add (bps)	786	109	167	15	316	473	534
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>3</sup>	11.35	9.01	10.02	7.65	8.31	7.13	7.42
Value-Add (bps)	1,134	371	495	392	528	662	757

The index is a horizon calculation based on data compiled from 592 growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup>Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup>CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup>Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company, Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Growth Equity: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return								
1986 Q1	—	1992 Q3	3.35	1999 Q1	7.72	2005 Q3	7.90	2012 Q1	6.15
1986 Q2	—	1992 Q4	8.35	1999 Q2	14.35	2005 Q4	3.71	2012 Q2	-1.46
1986 Q3	-19.34	1993 Q1	-2.16	1999 Q3	6.61	2006 Q1	8.02	2012 Q3	2.77
1986 Q4	13.82	1993 Q2	3.84	1999 Q4	53.09	2006 Q2	-0.11	2012 Q4	3.65
1987 Q1	8.38	1993 Q3	10.34	2000 Q1	18.53	2006 Q3	5.13	2013 Q1	2.70
1987 Q2	2.95	1993 Q4	11.60	2000 Q2	2.88	2006 Q4	10.48	2013 Q2	1.46
1987 Q3	25.54	1994 Q1	6.02	2000 Q3	8.11	2007 Q1	8.31	2013 Q3	6.25
1987 Q4	-9.87	1994 Q2	-0.63	2000 Q4	-7.60	2007 Q2	10.40	2013 Q4	8.90
1988 Q1	1.44	1994 Q3	6.56	2001 Q1	-9.74	2007 Q3	4.30	2014 Q1	3.27
1988 Q2	0.67	1994 Q4	5.65	2001 Q2	2.21	2007 Q4	8.00	2014 Q2	4.30
1988 Q3	1.07	1995 Q1	10.13	2001 Q3	-8.70	2008 Q1	-5.15	2014 Q3	1.78
1988 Q4	1.03	1995 Q2	7.02	2001 Q4	-0.09	2008 Q2	-0.26	2014 Q4	1.38
1989 Q1	1.56	1995 Q3	7.49	2002 Q1	-2.38	2008 Q3	-6.49	2015 Q1	3.21
1989 Q2	0.33	1995 Q4	7.33	2002 Q2	-4.10	2008 Q4	-14.86	2015 Q2	5.77
1989 Q3	1.05	1996 Q1	6.61	2002 Q3	-8.67	2009 Q1	-3.32	2015 Q3	-3.05
1989 Q4	2.81	1996 Q2	10.10	2002 Q4	-1.06	2009 Q2	8.47	2015 Q4	3.31
1990 Q1	1.97	1996 Q3	5.72	2003 Q1	-3.67	2009 Q3	6.78	2016 Q1	-0.07
1990 Q2	2.31	1996 Q4	4.17	2003 Q2	6.36	2009 Q4	6.45	2016 Q2	1.64
1990 Q3	-0.15	1997 Q1	1.24	2003 Q3	6.18	2010 Q1	4.72	2016 Q3	3.83
1990 Q4	-0.58	1997 Q2	21.00	2003 Q4	7.10	2010 Q2	0.14	2016 Q4	2.13
1991 Q1	2.52	1997 Q3	9.74	2004 Q1	4.37	2010 Q3	6.27	2017 Q1	4.15
1991 Q2	0.78	1997 Q4	-1.66	2004 Q2	0.92	2010 Q4	10.91	2017 Q2	3.86
1991 Q3	7.59	1998 Q1	12.15	2004 Q3	0.78	2011 Q1	3.68	2017 Q3	4.92
1991 Q4	6.56	1998 Q2	-3.77	2004 Q4	10.34	2011 Q2	3.95	2017 Q4	5.83
1992 Q1	2.54	1998 Q3	-5.76	2005 Q1	1.55	2011 Q3	-5.72	2018 Q1	4.16
1992 Q2	0.36	1998 Q4	7.21	2005 Q2	7.52	2011 Q4	3.44	2018 Q2	6.06

The index is a horizon calculation based on data compiled from 592 growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns		One Year Rolling Returns	
Years	Horizon Return (%)	One Year Ended	Horizon Return (%)
1 Year	22.69	6/30/2018	22.69
2 Years	18.76	6/30/2017	15.04
3 Years	12.72	6/30/2016	1.73
4 Years	12.61	6/30/2015	12.28
5 Years	14.97	6/30/2014	24.73
6 Years	14.33	6/30/2013	11.42
7 Years	12.48	6/30/2012	2.46
8 Years	14.16	6/30/2011	26.72
9 Years	14.63	6/30/2010	18.73
10 Years	11.57	6/30/2009	-15.49
11 Years	11.11	6/30/2008	5.15
12 Years	12.53	6/30/2007	39.28
13 Years	12.92	6/30/2006	20.90
14 Years	13.33	6/30/2005	21.54
15 Years	13.60	6/30/2004	19.53

The index is a horizon calculation based on data compiled from 592 growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.



## Growth Equity: Fund Since Inception Analysis

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### Growth Equity: Since Inception IRR & Multiples by Fund Vintage Year

Net to Limited Partners

Vintage Year	Pooled Return (%)	Arithmetic Mean (%)	Median (%)	Equal-Weighted Pooled Return (%)	Upper Quartile (%)	Lower Quartile (%)	Standard Deviation (%)	DPI	RVPI	TVPI	Number of Funds
1993	7.20	9.76	—	2.43	—	—	—	1.27	0.00	1.27	3
1994	35.13	10.10	0.22	10.75	9.90	-1.29	18.72	3.62	0.00	3.62	11
1995	49.48	17.21	2.78	23.35	30.55	-3.54	33.24	3.44	0.00	3.44	11
1996	10.04	7.23	6.73	9.66	14.76	-3.55	11.92	1.59	0.00	1.60	13
1997	13.33	19.04	14.47	16.52	26.88	9.24	21.82	1.82	0.00	1.83	12
1998	10.14	8.62	9.74	9.50	15.18	2.01	9.47	1.58	0.00	1.58	13
1999	3.13	6.96	0.76	7.69	17.18	-3.85	15.54	1.21	0.02	1.23	12
2000	9.14	7.18	7.51	7.47	14.70	2.41	10.45	1.55	0.06	1.61	29
2001	14.60	5.24	10.58	7.05	—	—	—	2.17	0.11	2.29	7
2002	10.15	17.92	8.76	15.14	17.83	6.00	26.45	1.58	0.14	1.72	11
2003	16.58	23.11	14.50	24.11	—	—	—	1.90	0.04	1.94	7
2004	8.50	26.77	8.15	13.62	23.99	1.71	56.17	1.31	0.19	1.50	20
2005	12.13	11.47	10.02	13.63	17.60	1.45	16.68	1.70	0.19	1.89	39
2006	7.87	7.25	5.70	10.92	11.41	0.30	10.64	1.29	0.26	1.55	32
2007	10.04	5.73	7.02	7.86	11.56	-2.20	12.12	1.18	0.53	1.70	52
2008	10.70	8.89	7.61	9.10	13.80	4.08	8.14	0.91	0.76	1.66	37
2009	15.16	11.85	10.85	13.25	16.52	7.95	7.00	0.90	0.99	1.89	18
2010	15.77	15.24	13.64	15.02	20.06	5.90	16.62	0.70	1.12	1.81	31
2011	15.38	12.19	12.21	12.33	17.10	6.64	9.20	0.57	1.08	1.65	36
2012	15.03	11.65	13.20	12.65	15.09	7.71	9.87	0.35	1.15	1.51	31
2013	17.59	14.64	13.13	17.15	18.42	9.10	12.61	0.20	1.35	1.56	35
2014	22.89	19.14	17.03	20.23	21.34	8.74	17.63	0.20	1.29	1.49	37
2015	18.29	17.12	14.09	20.31	27.62	6.17	22.83	0.06	1.16	1.22	37
2016	17.24	2.01	-1.49	16.56	20.74	-12.69	28.51	0.01	1.13	1.13	27

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark	MSCI EAFE Index (Net)		MSCI Europe Index (Net)		CA Benchmark	MSCI EAFE Index (Net)	MSCI Europe Index (Net)	CA Benchmark	MSCI EAFE Index (Net)	MSCI Europe Index (Net)
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	mPME DPI
1993	3	7.20	4.83	236	9.90	-271	1.27	1.29	1.62	1.27	1.16	1.46
1994	11	35.13	8.43	2,670	15.01	2,012	3.62	1.38	1.73	3.62	1.38	1.73
1995	11	49.48	7.72	4,176	14.46	3,502	3.44	1.21	1.41	3.44	1.21	1.41
1996	13	10.04	3.93	611	5.09	495	1.60	1.19	1.25	1.59	1.19	1.24
1997	12	13.33	3.37	996	3.60	973	1.83	1.17	1.18	1.82	1.16	1.18
1998	13	10.14	2.33	781	2.56	758	1.58	1.11	1.12	1.58	1.11	1.12
1999	12	3.13	3.98	-85	4.61	-148	1.23	1.24	1.28	1.21	1.23	1.27
2000	29	9.14	7.50	164	7.87	127	1.61	1.42	1.44	1.55	1.37	1.39
2001	7	14.60	8.28	631	8.68	592	2.29	1.53	1.56	2.17	1.47	1.50
2002	11	10.15	10.39	-24	10.78	-63	1.72	1.65	1.67	1.58	1.53	1.56
2003	7	16.58	4.00	1,258	4.21	1,237	1.94	1.17	1.18	1.90	1.14	1.15
2004	20	8.50	2.79	571	2.85	565	1.50	1.15	1.15	1.31	1.02	1.02
2005	39	12.13	1.42	1,072	1.36	1,077	1.89	1.08	1.07	1.70	0.98	0.98
2006	32	7.87	2.64	523	2.42	545	1.55	1.16	1.15	1.29	0.95	0.94
2007	52	10.04	4.85	519	4.75	529	1.70	1.29	1.28	1.18	0.95	0.95
2008	37	10.70	6.21	448	6.06	463	1.66	1.34	1.33	0.91	0.76	0.76
2009	18	15.16	6.19	897	5.95	921	1.89	1.29	1.28	0.90	0.67	0.67
2010	31	15.77	6.41	937	6.06	971	1.81	1.27	1.25	0.70	0.54	0.54
2011	36	15.38	5.89	949	5.21	1,017	1.65	1.21	1.19	0.57	0.44	0.43
2012	31	15.03	5.12	991	4.20	1,083	1.51	1.15	1.12	0.35	0.29	0.29
2013	35	17.59	5.79	1,180	4.81	1,278	1.56	1.16	1.13	0.20	0.17	0.16
2014	37	22.89	7.58	1,531	6.67	1,622	1.49	1.14	1.13	0.20	0.17	0.17
2015	37	18.29	9.15	913	8.33	996	1.22	1.11	1.10	0.06	0.06	0.06
2016	27	17.24	6.85	1,039	5.84	1,139	1.13	1.05	1.04	0.01	0.00	0.00

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)					Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)			
		CA Benchmark	S&P 500 Index		Russell 2000® Index		CA Benchmark	S&P 500 Index		CA Benchmark	S&P 500 Index		
			IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI		mPME DPI	mPME DPI	
1993	3	7.20	12.41	-522		10.38	-318	1.27	1.77	1.70	1.27	1.59	1.49
1994	11	35.13	19.16	1,597		11.39	2,374	3.62	1.94	1.56	3.62	1.94	1.56
1995	11	49.48	19.21	3,026		10.01	3,946	3.44	1.55	1.29	3.44	1.55	1.29
1996	13	10.04	4.60	544		7.08	296	1.60	1.21	1.37	1.59	1.20	1.36
1997	12	13.33	1.73	1,160		7.44	588	1.83	1.08	1.39	1.82	1.07	1.38
1998	13	10.14	0.32	982		6.65	349	1.58	1.01	1.32	1.58	1.01	1.32
1999	12	3.13	1.19	194		6.93	-380	1.23	1.07	1.45	1.21	1.06	1.43
2000	29	9.14	5.06	409		8.08	107	1.61	1.31	1.50	1.55	1.23	1.42
2001	7	14.60	6.50	810		8.36	624	2.29	1.47	1.62	2.17	1.38	1.52
2002	11	10.15	7.31	284		9.92	23	1.72	1.51	1.72	1.58	1.34	1.53
2003	7	16.58	5.96	1,062		7.03	955	1.94	1.31	1.37	1.90	1.26	1.32
2004	20	8.50	6.06	244		6.41	210	1.50	1.40	1.43	1.31	1.17	1.20
2005	39	12.13	5.88	625		6.28	585	1.89	1.39	1.42	1.70	1.22	1.25
2006	32	7.87	9.03	-115		9.05	-117	1.55	1.70	1.70	1.29	1.33	1.32
2007	52	10.04	11.91	-186		11.92	-187	1.70	1.87	1.86	1.18	1.32	1.31
2008	37	10.70	13.86	-317		13.38	-268	1.66	1.94	1.89	0.91	1.01	0.99
2009	18	15.16	13.94	122		12.93	223	1.89	1.78	1.71	0.90	0.88	0.84
2010	31	15.77	13.88	189		13.06	271	1.81	1.67	1.62	0.70	0.68	0.66
2011	36	15.38	13.15	223		12.39	299	1.65	1.54	1.50	0.57	0.53	0.51
2012	31	15.03	12.15	288		11.52	351	1.51	1.39	1.37	0.35	0.34	0.33
2013	35	17.59	12.33	527		12.44	515	1.56	1.37	1.37	0.20	0.19	0.19
2014	37	22.89	13.46	943		14.69	820	1.49	1.27	1.29	0.20	0.18	0.18
2015	37	18.29	14.74	354		18.09	20	1.22	1.18	1.22	0.06	0.07	0.07
2016	27	17.24	13.83	340		17.53	-29	1.13	1.11	1.13	0.01	0.01	0.01

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Growth Equity: Since Inception IRR & Multiples Compared to CA Modified Public Market Equivalent (mPME) Net to Limited Partners

Vintage Year	Number of Funds	Pooled IRR (%) and IRR-Based Value-Add (bps)			Total Value to Paid In (TVPI)			Distributions to Paid In (DPI)				
		CA Benchmark		Russell 3000® Index		MSCI All Country World Index (gross)		CA Benchmark	Russell 3000® Index	MSCI All Country World Index (gross)	CA Benchmark	
		IRR	mPME IRR	Value-Add	mPME IRR	Value-Add	TVPI	mPME TVPI	mPME TVPI	DPI	Russell 3000® Index	MSCI All Country World Index (gross)
1993	3	7.20	12.04	-485	7.79	-59	1.27	1.76	1.48	1.27	1.57	1.32
1994	11	35.13	18.11	1,702	12.68	2,245	3.62	1.89	1.60	3.62	1.89	1.60
1995	11	49.48	18.04	3,143	12.41	3,707	3.44	1.52	1.35	3.44	1.52	1.35
1996	13	10.04	5.06	499	4.33	571	1.60	1.23	1.20	1.59	1.23	1.20
1997	12	13.33	2.58	1,075	2.90	1,042	1.83	1.12	1.14	1.82	1.12	1.14
1998	13	10.14	1.18	897	1.77	837	1.58	1.05	1.08	1.58	1.05	1.08
1999	12	3.13	1.99	114	3.10	3	1.23	1.12	1.19	1.21	1.10	1.18
2000	29	9.14	5.62	352	7.02	212	1.61	1.34	1.42	1.55	1.27	1.35
2001	7	14.60	6.98	761	8.16	643	2.29	1.51	1.57	2.17	1.42	1.49
2002	11	10.15	7.92	223	9.52	63	1.72	1.56	1.64	1.58	1.39	1.49
2003	7	16.58	6.32	1,026	5.65	1,093	1.94	1.33	1.27	1.90	1.28	1.23
2004	20	8.50	6.29	222	5.04	346	1.50	1.42	1.30	1.31	1.19	1.12
2005	39	12.13	6.08	605	4.12	801	1.89	1.41	1.25	1.70	1.24	1.12
2006	32	7.87	9.16	-129	5.85	202	1.55	1.71	1.40	1.29	1.34	1.12
2007	52	10.04	12.02	-198	8.08	196	1.70	1.88	1.53	1.18	1.32	1.10
2008	37	10.70	13.87	-318	9.64	106	1.66	1.94	1.58	0.91	1.01	0.86
2009	18	15.16	13.82	134	9.61	555	1.89	1.77	1.49	0.90	0.88	0.75
2010	31	15.77	13.78	199	9.81	596	1.81	1.67	1.44	0.70	0.68	0.60
2011	36	15.38	12.99	238	9.49	589	1.65	1.53	1.37	0.57	0.53	0.48
2012	31	15.03	11.95	309	8.83	620	1.51	1.39	1.28	0.35	0.34	0.32
2013	35	17.59	12.20	540	9.42	817	1.56	1.36	1.27	0.20	0.19	0.18
2014	37	22.89	13.48	941	11.08	1,181	1.49	1.27	1.22	0.20	0.18	0.18
2015	37	18.29	15.11	317	12.59	569	1.22	1.18	1.15	0.06	0.07	0.07
2016	27	17.24	14.29	295	10.73	651	1.13	1.11	1.08	0.01	0.01	0.01

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

mPME Note: Refer to Methodology page for further details on Cambridge Associates Modified PME (mPME).

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Growth Equity: Total Value to Paid In Capital Multiple (TVPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	1.27	1.12	—	—	—	3
1994	3.62	1.83	1.02	2.02	0.94	11
1995	3.44	2.03	1.18	2.31	0.85	11
1996	1.60	1.75	1.44	2.02	0.77	13
1997	1.83	2.18	1.88	2.52	1.58	12
1998	1.58	1.48	1.50	1.78	1.14	13
1999	1.23	1.58	1.07	2.08	0.81	12
2000	1.61	1.49	1.44	1.91	1.14	29
2001	2.29	1.49	1.51	—	—	7
2002	1.72	2.15	1.75	2.48	1.45	11
2003	1.94	2.25	1.78	—	—	7
2004	1.50	1.77	1.42	1.89	1.19	20
2005	1.89	1.98	1.67	2.35	1.12	39
2006	1.55	1.87	1.35	1.74	1.02	32
2007	1.70	1.52	1.47	1.74	0.90	52
2008	1.66	1.58	1.49	1.80	1.25	37
2009	1.89	1.85	1.65	2.11	1.46	18
2010	1.81	1.79	1.67	2.06	1.34	31
2011	1.65	1.55	1.51	1.88	1.29	36
2012	1.51	1.42	1.39	1.57	1.26	31
2013	1.56	1.46	1.40	1.58	1.21	35
2014	1.49	1.43	1.34	1.64	1.14	37
2015	1.22	1.25	1.20	1.38	1.06	37
2016	1.13	1.04	0.99	1.16	0.90	27

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Growth Equity: Distribution to Paid In Capital Multiple (DPI)**

Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	1.27	1.12	—	—	—	3
1994	3.62	1.83	1.02	2.02	0.94	11
1995	3.44	2.03	1.18	2.31	0.85	11
1996	1.59	1.74	1.40	1.98	0.77	13
1997	1.82	2.16	1.88	2.52	1.58	12
1998	1.58	1.47	1.50	1.78	1.14	13
1999	1.21	1.56	1.06	2.08	0.72	12
2000	1.55	1.42	1.44	1.79	1.06	29
2001	2.17	1.43	1.51	—	—	7
2002	1.58	1.96	1.40	2.37	1.17	11
2003	1.90	2.22	1.77	—	—	7
2004	1.31	1.51	1.26	1.64	0.86	20
2005	1.70	1.73	1.38	2.20	0.63	39
2006	1.29	1.54	1.13	1.52	0.79	32
2007	1.18	0.98	0.86	1.49	0.44	52
2008	0.91	0.82	0.78	1.03	0.49	37
2009	0.90	0.61	0.54	0.82	0.32	18
2010	0.70	0.74	0.65	1.25	0.34	31
2011	0.57	0.47	0.35	0.77	0.11	36
2012	0.35	0.30	0.14	0.50	0.06	31
2013	0.20	0.29	0.17	0.40	0.02	35
2014	0.20	0.18	0.08	0.25	0.00	37
2015	0.06	0.04	0.00	0.01	0.00	37
2016	0.01	0.00	0.00	0.00	0.00	27

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.

**Growth Equity: Residual Value to Paid In Capital Multiple (RVPI)**  
Net to Limited Partners

Vintage Year	Pooled Return	Arithmetic Mean	Median	Upper Quartile	Lower Quartile	Number of Funds
1993	0.00	0.00	—	—	—	3
1994	0.00	0.01	0.00	0.00	0.00	11
1995	0.00	0.00	0.00	0.00	0.00	11
1996	0.00	0.01	0.00	0.00	0.00	13
1997	0.00	0.02	0.00	0.00	0.00	12
1998	0.00	0.01	0.00	0.00	0.00	13
1999	0.02	0.02	0.00	0.02	0.00	12
2000	0.06	0.06	0.00	0.04	0.00	29
2001	0.11	0.06	0.02	—	—	7
2002	0.14	0.19	0.01	0.30	0.00	11
2003	0.04	0.03	0.00	—	—	7
2004	0.19	0.26	0.03	0.27	0.01	20
2005	0.19	0.24	0.14	0.38	0.03	39
2006	0.26	0.32	0.21	0.35	0.04	32
2007	0.53	0.54	0.37	0.65	0.14	52
2008	0.76	0.76	0.71	1.12	0.42	37
2009	0.99	1.24	1.15	1.35	0.72	18
2010	1.12	1.04	0.84	1.18	0.61	31
2011	1.08	1.08	1.04	1.26	0.87	36
2012	1.15	1.12	1.18	1.31	0.85	31
2013	1.35	1.17	1.19	1.37	1.00	35
2014	1.29	1.25	1.19	1.40	1.04	37
2015	1.16	1.21	1.11	1.29	1.05	37
2016	1.13	1.04	0.99	1.16	0.90	27

Notes: Based on data compiled from 561 growth equity funds, including fully liquidated partnerships, formed between 1993 and 2016. Internal rates of returns are net of fees, expenses and carried interest. CA research shows that most funds take at least six years to settle into their final quartile ranking, and previous to this settling they typically rank in 2-3 other quartiles; therefore fund or benchmark performance metrics from more recent vintage years may be less meaningful. Benchmarks with "—" have an insufficient number of funds in the vintage year sample to produce a meaningful return.



## US Growth Equity: Fund Index Analysis

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**US Growth Equity: Fund Index Summary: Horizon Pooled Return**  
 Net to Limited Partners

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year
<b>US Growth Equity Index<sup>1</sup></b>	<b>7.64</b>	<b>13.61</b>	<b>27.17</b>	<b>15.63</b>	<b>17.08</b>	<b>13.02</b>
Bloomberg Barclays Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17
Wilshire 5000 Total Market Index	3.83	3.04	14.66	11.85	13.36	10.23

The index is a horizon calculation based on data compiled from 256 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

**US Growth Equity: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

CA Index	1-Year	3-Year	5-Year	10-Year
<b>US Growth Equity Index<sup>1</sup></b>	<b>27.17</b>	<b>15.63</b>	<b>17.08</b>	<b>13.02</b>
<b>mPME Analysis<sup>2</sup></b>				
Russell 2000® Index	17.59	11.20	12.66	11.38
Value-Add (bps)	957	443	442	164
Russell 2500™ Index	16.30	10.46	12.46	11.54
Value-Add (bps)	1,086	517	462	148
Russell 3000® Index	14.88	11.70	13.42	11.09
Value-Add (bps)	1,228	393	366	193
Russell Midcap® Index	12.41	9.68	12.39	11.10
Value-Add (bps)	1,475	595	469	192
S&P 500 Index	14.49	12.04	13.53	11.04
Value-Add (bps)	1,268	359	355	198
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>3</sup>	11.43	9.12	10.16	7.32
Value-Add (bps)	1,574	651	692	570

The index is a horizon calculation based on data compiled from 256 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

<sup>1</sup> Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup> CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup> Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Growth Equity: Fund Index Details: One Quarter Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return
2003 Q1	-3.81
2003 Q2	6.51
2003 Q3	5.64
2003 Q4	7.37
2004 Q1	3.50
2004 Q2	1.44
2004 Q3	-0.12
2004 Q4	10.49
2005 Q1	-0.25
2005 Q2	8.19
2005 Q3	8.35
2005 Q4	2.20
2006 Q1	7.69
2006 Q2	-0.36
2006 Q3	4.45
2006 Q4	7.80
2007 Q1	7.02
2007 Q2	8.90
2007 Q3	3.76
2007 Q4	4.23
2008 Q1	-3.57
2008 Q2	-0.06
2008 Q3	-3.27
2008 Q4	-12.93

Quarter Ending	Horizon Return
2009 Q1	-3.81
2009 Q2	5.89
2009 Q3	5.17
2009 Q4	3.80
2010 Q1	4.52
2010 Q2	0.87
2010 Q3	4.48
2010 Q4	10.80
2011 Q1	4.17
2011 Q2	5.09
2011 Q3	-3.37
2011 Q4	6.21
2012 Q1	6.22
2012 Q2	-0.35
2012 Q3	3.78
2012 Q4	3.20
2013 Q1	3.64
2013 Q2	2.95
2013 Q3	8.28
2013 Q4	8.48
2014 Q1	3.03
2014 Q2	4.77
2014 Q3	1.54
2014 Q4	1.74

Quarter Ending	Horizon Return
2015 Q1	3.17
2015 Q2	5.13
2015 Q3	-1.08
2015 Q4	1.73
2016 Q1	0.51
2016 Q2	2.81
2016 Q3	4.92
2016 Q4	2.72
2017 Q1	4.44
2017 Q2	4.08
2017 Q3	5.45
2017 Q4	6.38
2018 Q1	5.78
2018 Q2	7.64

The index is a horizon calculation based on data compiled from 256 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### US Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns	
Years	Horizon Return (%)
1 Year	27.17
2 Years	22.17
3 Years	15.63
4 Years	14.53
5 Years	17.08
6 Years	16.63
7 Years	15.27
8 Years	16.82
9 Years	16.59
10 Years	13.02

One Year Rolling Returns	
One Year Ended	Horizon Return (%)
6/30/2018	27.17
6/30/2017	17.51
6/30/2016	3.76
6/30/2015	11.39
6/30/2014	27.11
6/30/2013	14.84
6/30/2012	8.93
6/30/2011	26.47
6/30/2010	14.91
6/30/2009	-13.87

The index is a horizon calculation based on data compiled from 256 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.



## Ex US Growth Equity: Fund Index Analysis

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**Ex US Growth Equity: Fund Index Summary: Horizon Pooled Return**  
**Net to Limited Partners**

Index	1-Quarter	YTD	1-Year	3-Year	5-Year	10-Year
<b>Ex US Growth Equity Index<sup>1</sup></b>	<b>4.12</b>	<b>6.95</b>	<b>17.27</b>	<b>9.30</b>	<b>12.45</b>	<b>9.51</b>
Bloomberg Barclays Capital Government/Credit Bond Index	-0.33	-1.90	-0.63	1.83	2.29	3.78
Dow Jones Industrial Average Index	1.26	-0.73	16.31	14.07	12.96	10.78
Dow Jones US Small Cap Index	4.84	4.21	14.62	8.63	11.31	10.46
Dow Jones US TopCap Index	3.46	2.79	14.48	11.81	13.39	10.21
MSCI Emerging Markets Index (gross)	-7.86	-6.51	8.59	5.98	5.39	2.60
MSCI Europe Index (US\$) (net)	-1.27	-3.23	5.28	4.22	6.21	2.36
MSCI Europe Index (€) (net)	4.00	-0.48	2.85	2.61	8.51	5.47
MSCI Pacific Index (net)	-1.35	-2.02	9.91	6.37	6.93	3.96
MSCI World Ex US Index (net)	-0.75	-2.77	7.04	4.87	6.23	2.63
MSCI World Index (net)	1.73	0.43	11.09	8.48	9.94	6.26
Nasdaq Composite Index*	6.33	8.79	22.31	14.62	17.15	12.60
Russell 1000® Index	3.57	2.85	14.54	11.64	13.37	10.20
Russell 2000® Index	7.75	7.66	17.57	10.96	12.46	10.60
S&P 500 Index	3.43	2.65	14.37	11.93	13.42	10.17

The index is a horizon calculation based on data compiled from 336 Ex US growth equity funds including fully liquidated partnerships, formed between 1989 and 2018.

<sup>1</sup> Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended. For a more accurate means of comparing private investment performance relative to public alternatives, see the analyses in this document using CA Modified Public Market Equivalent (mPME). See Methodology section for more detail.

Sources: Cambridge Associates LLC, Bloomberg Barclays, Frank Russell Company, Standard & Poor's, Thomson Reuters Datastream, and Wilshire Associates, Inc.

\*Capital change only.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

**Ex US Growth Equity: Fund Index Summary: Horizon Pooled Return Compared to CA Modified Public Market Equivalent (mPME)  
Net to Limited Partners**

CA Index	1-Year	3-Year	5-Year	10-Year
<b>Ex US Growth Equity Index<sup>1</sup></b>	<b>17.27</b>	<b>9.30</b>	<b>12.45</b>	<b>9.51</b>
<b>mPME Analysis<sup>2</sup></b>				
MSCI EAFE Index (net)	6.70	5.12	6.26	4.71
Value-Add (bps)	1,057	418	619	480
MSCI Europe Index (net)	5.14	4.45	5.93	4.29
Value-Add (bps)	1,213	485	651	522
S&P 500 Index	14.37	11.90	13.33	11.81
Value-Add (bps)	291	-260	-88	-230
Constructed Index: Global Financial Data Emerging Markets/MSCI Emerging Markets (gross) <sup>3</sup>	8.30	6.47	5.64	3.75
Value-Add (bps)	897	282	681	576
Constructed Index: MSCI World/MSCI All Country World Index (gross) <sup>4</sup>	11.25	8.87	9.87	8.05
Value-Add (bps)	602	43	258	146

The index is a horizon calculation based on data compiled from 336 Ex US growth equity funds, including fully liquidated partnerships, formed between 1989 and 2018.

<sup>1</sup> Pooled horizon return, net of fees, expenses, and carried interest.

<sup>2</sup> CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME NAV is a function of mPME cash flows and public index returns. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return. Refer to Methodology page for details.

<sup>3</sup> Constructed MSCI EM Index: Data from 1/1/1986 to 12/31/1987 represented by GFD Emerging Markets price return. Data from 1/1/1988 to present represented by MSCI Emerging Markets total return gross.

<sup>4</sup> Constructed MSCI All Country World Index: Data from 1/1/1986 to 12/31/1987 represented by MSCI World index gross total return. Data from 1/1/1988 to present represented by MSCI ACWI gross total return.

Sources: Cambridge Associates LLC, Frank Russell Company Global Financial Data, Inc., MSCI Inc., Standard & Poor's and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Quarter Ending	Horizon Return
2003 Q1	-3.34
2003 Q2	6.00
2003 Q3	7.49
2003 Q4	6.44
2004 Q1	6.46
2004 Q2	-0.31
2004 Q3	3.04
2004 Q4	9.98
2005 Q1	6.16
2005 Q2	5.80
2005 Q3	6.72
2005 Q4	7.77
2006 Q1	8.88
2006 Q2	0.53
2006 Q3	6.93
2006 Q4	17.35
2007 Q1	11.23
2007 Q2	13.59
2007 Q3	5.37
2007 Q4	15.06
2008 Q1	-7.79
2008 Q2	-0.59
2008 Q3	-12.03

Quarter Ending	Horizon Return
2008 Q4	-18.35
2009 Q1	-2.38
2009 Q2	13.38
2009 Q3	9.66
2009 Q4	10.97
2010 Q1	5.02
2010 Q2	-0.97
2010 Q3	8.98
2010 Q4	11.06
2011 Q1	3.00
2011 Q2	2.35
2011 Q3	-9.04
2011 Q4	-0.69
2012 Q1	6.02
2012 Q2	-3.12
2012 Q3	1.28
2012 Q4	4.28
2013 Q1	1.44
2013 Q2	-0.48
2013 Q3	3.67
2013 Q4	9.41
2014 Q1	3.56
2014 Q2	3.77

Quarter Ending	Horizon Return
2014 Q3	2.06
2014 Q4	0.98
2015 Q1	3.26
2015 Q2	6.46
2015 Q3	-5.16
2015 Q4	5.05
2016 Q1	-0.68
2016 Q2	0.37
2016 Q3	2.62
2016 Q4	1.46
2017 Q1	3.82
2017 Q2	3.61
2017 Q3	4.28
2017 Q4	5.18
2018 Q1	2.26
2018 Q2	4.12

The index is a horizon calculation based on data compiled from 336 Ex US growth equity funds, including fully liquidated partnerships, formed between 1989 and 2018. All returns are net of fees, expenses, and carried interest. Historic quarterly returns are updated in each year-end report to adjust for changes in the index sample.

## Buyout & Growth Equity Index and Selected Benchmark Statistics

Data as of  
June 30, 2018

### Ex US Growth Equity: Fund Index Details: Horizon Pooled Return Net to Limited Partners

Multi-Year Returns	
Years	Horizon Return (%)
1 Year	17.27
2 Years	14.67
3 Years	9.30
4 Years	10.29
5 Years	12.45
6 Years	11.53
7 Years	9.12
8 Years	10.80
9 Years	11.93
10 Years	9.51

One Year Rolling Returns	
One Year Ended	Horizon Return (%)
6/30/2018	17.27
6/30/2017	12.17
6/30/2016	-0.53
6/30/2015	13.31
6/30/2014	21.86
6/30/2013	6.62
6/30/2012	-6.72
6/30/2011	27.12
6/30/2010	25.61
6/30/2009	-18.34

The index is a horizon calculation based on data compiled 336 Ex US growth equity funds, including fully liquidated partnerships, formed between 1989 and 2018. All returns are net of fees, expenses, and carried interest.

## Description of Performance Measurement Methodology

Cambridge Associates LLC (CA) has established a database to monitor investments made by venture capital and other alternative asset partnerships. On June 30, 2018, 2,123 US and Ex US buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018 were included in the sample. Users of the analysis may find the following description of the data sources and calculation techniques helpful to their interpretation of information presented in the report:

1. Partnership financial statements and narratives are the primary source of information concerning cash flows and ending residual/ net asset values (NAV) for both partnerships and portfolio company investments.
2. Recognizing the alternative asset community's sensitivity to the distribution of information pertaining to individual fund investments, as a matter of policy CA only releases aggregated figures in its benchmark report.
3. Vintage year is defined as the legal inception date as noted in a fund's financial statement. This date can usually be found in the first note to the audited financial statements and is prior to the first close or capital call.
4. CA uses both the since inception internal rate of return and the end-to-end or horizon performance calculation in its benchmark reports:
  - a. The since inception internal rate of return (SI IRR) is a since inception calculation that solves for the discount rate, which makes the net present value of an investment equal to zero. The calculation is based on cash-on-cash returns over equal periods modified for the residual value of the partnership's equity or portfolio company's NAV. The residual value attributed to each respective group being measured is incorporated as its ending value. Transactions are accounted for on a quarterly basis, and annualized values are used for reporting purposes. Please note that all transactions are recorded on the 45th day or midpoint of the quarter.
  - b. Cambridge Associates uses the end-to-end or horizon internal rate of return calculation to calculate the official quarterly, annual, and multi-year index figures. The horizon IRR performance calculation is a money-weighted return similar to the since inception IRR; however, it is measuring performance between two points in time. The calculation incorporates the beginning NAV (if any, treated as an inflow), interim cash flows and the ending NAV (if any, treated as an outflow). All interim cash flows are recorded on the mid-period date of the quarter. In order for a fund to be included in a horizon IRR calculation, the fund must have at least one quarterly contribution, distribution or NAV during the time frame being measured. Similar to the since inception IRR, the horizon IRR is annualized for time frames greater than one year.

## Description of Performance Measurement Methodology (Continued)

### 5. Additional Calculation Definitions:

In order to provide meaningful statistics, Cambridge Associates has applied minimum fund count thresholds for each calculation.. See minimum counts in parenthesis after each calculation.

- a. **Pooled return** aggregates all cash flows and ending NAVs in a sample to calculate a dollar-weighted return. (minimum 3 funds)
  - b. **Arithmetic mean** averages the individual fund IRRs included in a vintage year. (minimum 3 funds)
  - c. **Median** is the middle fund IRR of the group of individual fund IRRs included in a vintage year. (minimum 5 funds)
  - d. **Equal-weighted pooled return** equally weights all cash flows and ending NAVs based on committed capital to calculate a dollar-weighted return. (minimum 3 funds)
  - e. **Upper/ lower quartile** are the thresholds for the upper (top 25%) and lower (bottom 25%) quartiles based on the individual fund IRRs included in a vintage year. Can be used in conjunction with the median to determine quartile placement. (minimum 8 funds)
  - f. **Standard deviation** is measure of the dispersion of the individual returns. The calculation employs the standard methodology for calculating a sample mean (not a population mean). (minimum 8 funds)
6. **Realization ratio exhibits** (TVPI, DPI, RVPI): CA has independently calculated the proper realization ratio for each fund in each vintage year. Please note that each fund has been ranked within its respective vintage year by the corresponding realization ratio, as opposed to being ranked by IRR as they are ranked in the since inception IRR exhibit. As a result a fund's ranking within its vintage year may change. For example, it is possible that a vintage year can have a different median fund when ranked by IRR vs. when ranked by TVPI, DPI or RVPI.
  7. **Cambridge Associates Modified Public Market Equivalent (mPME):** The mPME calculation is a private-to-public comparison that seeks to replicate private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and the mPME NAV (the value of the shares held by the public equivalent) is a function of mPME cash flows and public index returns. The mPME attempts to evaluate what return would have been earned had the dollars been deployed in the public markets instead of in private investments while avoiding the "negative NAV" issue inherent in some PME methodologies. "Value-Add" shows (in basis points) the difference between the actual private investment return and the mPME calculated return.
  8. Exhibits detailing data for portfolio companies are grouped by year of the fund's initial investment in a company, as opposed to vintage year. Returns are gross returns.

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