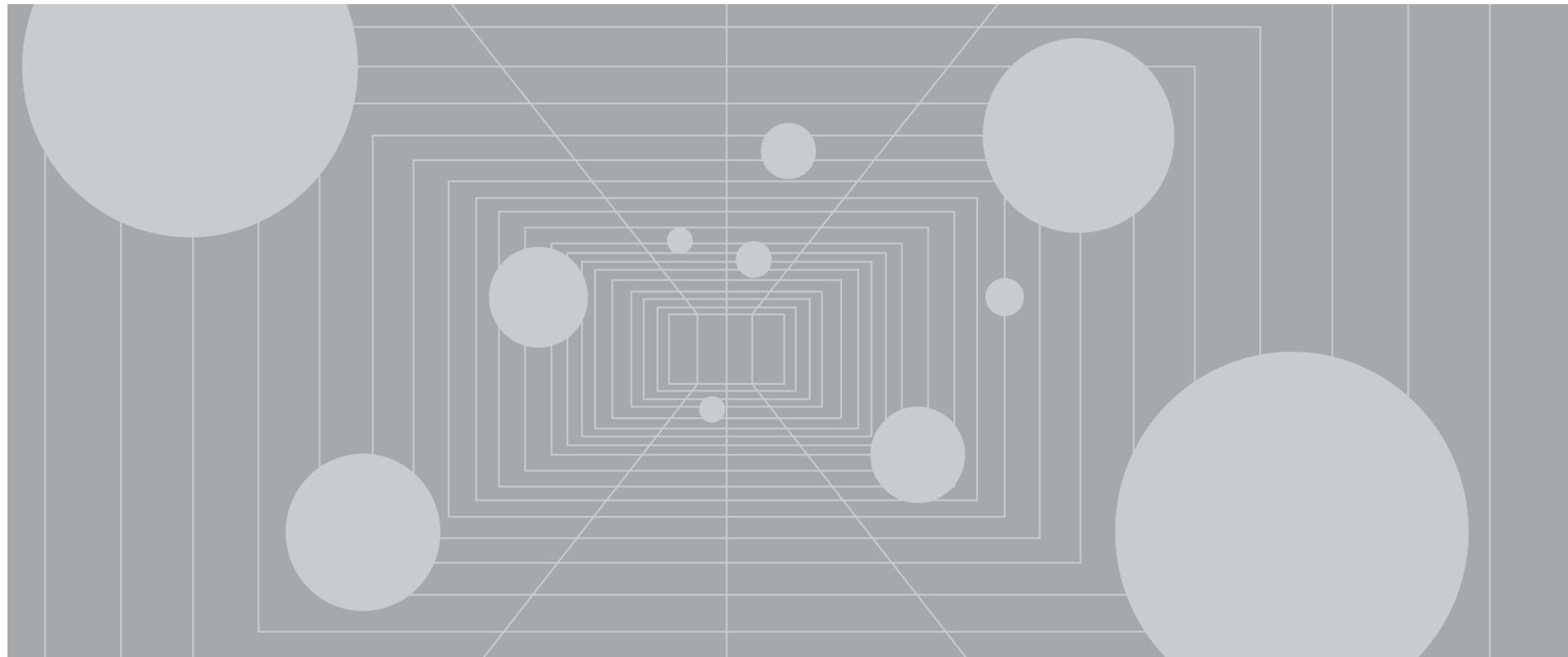


PRIVATE EQUITY

INDEX AND SELECTED BENCHMARK STATISTICS



CAMBRIDGE
ASSOCIATES

MARCH 31, 2019

NOTE ON UPCOMING PRIVATE EQUITY CHANGES

AS OF MARCH 31, 2019

Beginning this quarter, we have reconfigured the asset class constituents of the CA Private Equity (PE) benchmark. The PE benchmarks now include only Buyout and Growth Equity funds, and exclude Private Equity Energy and Subordinated Capital strategies.

As the private investments landscape continues to evolve, strategies once considered a part of the PE benchmark grouping have become more distinct. Historically, the private equity grouping has been comprised of four asset classes: Buyouts, Growth Equity, Private Equity Energy, and Subordinated Capital. The focus on Buyout and Growth Equity funds is to better represent the private equity asset class; the removed strategies are established independent strategies in their own right and should be analyzed separately. As a result of this reconfiguration, Private Equity Energy will belong to one benchmark group, Natural Resources, and Subordinated Capital will belong to one benchmark group, Private Credit.

Please reach out to privatebenchmarks@cambridgeassociates.com with any questions.

DISCLAIMER**AS OF MARCH 31, 2019**

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 7,600 funds. In addition, we capture the performance information (gross) of over 77,000 investments underlying our venture capital, growth equity, and buyout funds. This is one of the largest collections of portfolio-level performance information in the world and represents the investments of approximately 78% of these funds on a count basis and 84% 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

AS OF MARCH 31, 2019

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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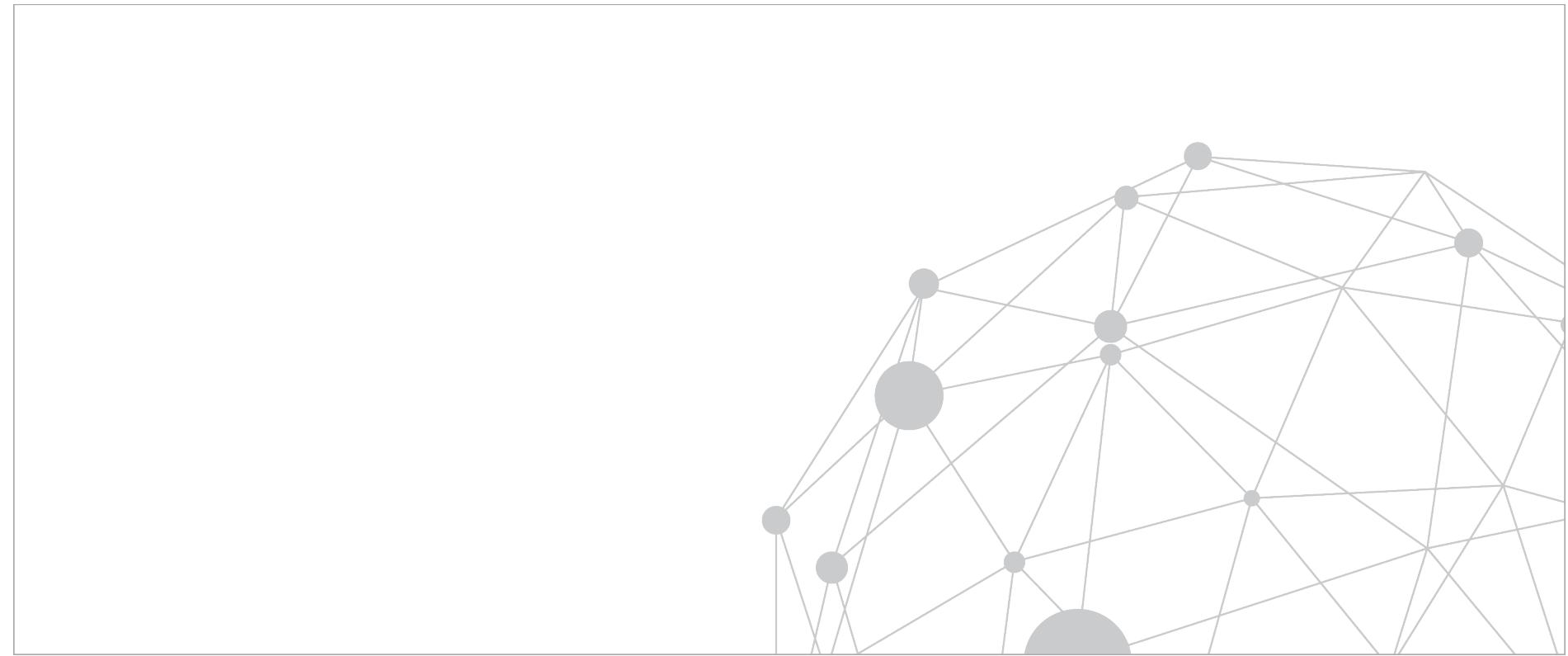
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PRIVATE EQUITY: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

PRIVATE EQUITY

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
PRIVATE EQUITY INDEX¹	4.95	12.21	15.76	12.42	15.52	13.69	12.44	13.45
Bloomberg Barclays Capital Government/Credit Bond Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36
Dow Jones Industrial Average Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones US Small Cap Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US TopCap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
MSCI Emerging Markets Index (gross)	9.95	-7.06	11.09	4.06	9.31	8.28	8.73	5.76
MSCI Europe Index (US\$) (net)	10.84	-3.72	6.56	1.04	8.95	5.24	3.86	6.72
MSCI Europe Index (€) (net)	12.84	5.45	7.08	5.27	10.79	5.88	3.66	6.92
MSCI Pacific Index (net)	8.53	-3.86	8.82	4.96	9.12	4.83	4.15	2.55
MSCI World Ex US Index (net)	10.45	-3.14	7.29	2.20	8.82	5.18	4.11	5.05
MSCI World Index (net)	12.48	4.01	10.68	6.78	12.38	6.82	4.82	7.03
Nasdaq Composite Index*	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Russell 1000® Index	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 2000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
S&P 500 Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80

The index is a horizon calculation based on data compiled from 2,167 private equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets Indices are gross of dividend taxes. Total Returns for MSCI Developed Markets Indices are net of dividend taxes.

AS OF MARCH 31, 2019

PRIVATE 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
PRIVATE EQUITY INDEX¹	12.21	15.76	12.42	15.52	13.69	12.44	13.45
MPME ANALYSIS²							
MSCI EAFE Index (net)	-3.56	7.35	2.23	8.89	4.47	4.18	4.37
Value-Add (bps)	1,576	841	1,019	663	922	826	908
MSCI Europe Index (net)	-3.53	6.63	0.92	8.95	4.51	4.10	4.75
Value-Add (bps)	1,574	913	1,150	658	918	834	870
S&P 500 Index	9.55	13.68	10.82	16.39	9.18	7.77	8.86
Value-Add (bps)	266	208	160	-87	451	467	459
Russell 2000® Index	2.23	13.55	6.85	16.47	8.73	8.94	8.99
Value-Add (bps)	998	222	557	-95	496	350	446
Russell 3000® Index	8.83	13.70	10.23	16.58	9.27	8.02	8.96
Value-Add (bps)	338	206	219	-106	442	442	449
Constructed Index: MSCI World/MSCI All Country World Index ³ (gross)	3.24	11.45	6.88	12.76	7.15	6.31	6.77
Value-Add (bps)	897	431	554	276	654	613	668

The index is a horizon calculation based on data compiled from 2,167 private equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ Constructed Index: MSCI World/MSCI All Country World Index: Data rom 1/1/1986 to 12/31/1987 represented by MSCI 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. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

PRIVATE EQUITY

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	2.04
1994 Q2	2.83
1994 Q3	1.98
1994 Q4	6.24
1995 Q1	3.96
1995 Q2	3.95
1995 Q3	4.16
1995 Q4	9.80
1996 Q1	5.38
1996 Q2	6.66
1996 Q3	6.40
1996 Q4	8.60
1997 Q1	0.61
1997 Q2	10.23
1997 Q3	6.37
1997 Q4	8.71
1998 Q1	9.08
1998 Q2	5.61
1998 Q3	-5.09
1998 Q4	6.74
1999 Q1	4.48
1999 Q2	9.66
1999 Q3	4.06
1999 Q4	17.14
2000 Q1	12.43
2000 Q2	-0.81

QUARTER ENDING	HORIZON RETURN
2000 Q3	-0.72
2000 Q4	-5.03
2001 Q1	-6.06
2001 Q2	2.16
2001 Q3	-6.68
2001 Q4	-1.00
2002 Q1	-0.55
2002 Q2	-0.31
2002 Q3	-4.44
2002 Q4	1.36
2003 Q1	-0.10
2003 Q2	7.16
2003 Q3	4.54
2003 Q4	10.75
2004 Q1	2.66
2004 Q2	4.23
2004 Q3	3.09
2004 Q4	16.45
2005 Q1	0.89
2005 Q2	7.60
2005 Q3	6.83
2005 Q4	9.10
2006 Q1	6.35
2006 Q2	7.78
2006 Q3	3.79
2006 Q4	15.85

QUARTER ENDING	HORIZON RETURN
2007 Q1	5.25
2007 Q2	10.49
2007 Q3	3.19
2007 Q4	4.29
2008 Q1	-0.51
2008 Q2	-1.68
2008 Q3	-10.37
2008 Q4	-18.81
2009 Q1	-5.05
2009 Q2	6.80
2009 Q3	7.56
2009 Q4	7.17
2010 Q1	2.75
2010 Q2	0.21
2010 Q3	7.31
2010 Q4	9.22
2011 Q1	5.23
2011 Q2	5.25
2011 Q3	-6.47
2011 Q4	3.20
2012 Q1	6.33
2012 Q2	-0.67
2012 Q3	3.88
2012 Q4	4.23
2013 Q1	3.31
2013 Q2	2.64

QUARTER ENDING	HORIZON RETURN
2013 Q3	5.85
2013 Q4	7.54
2014 Q1	3.17
2014 Q2	4.81
2014 Q3	-0.40
2014 Q4	2.18
2015 Q1	1.48
2015 Q2	5.39
2015 Q3	-0.98
2015 Q4	2.66
2016 Q1	1.48
2016 Q2	2.58
2016 Q3	4.05
2016 Q4	2.72
2017 Q1	4.35
2017 Q2	5.98
2017 Q3	4.87
2017 Q4	5.73
2018 Q1	2.68
2018 Q2	4.37
2018 Q3	3.25
2018 Q4	-0.82
2019 Q1	4.95

PRIVATE EQUITY

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	12.21	14 Years	12.93
2 Years	16.57	15 Years	13.69
3 Years	15.76	16 Years	14.48
4 Years	13.76	17 Years	13.45
5 Years	12.42	18 Years	12.43
6 Years	14.11	19 Years	11.21
7 Years	13.50	20 Years	12.44
8 Years	12.56	21 Years	12.43
9 Years	14.11	22 Years	12.97
10 Years	15.52	23 Years	13.19
11 Years	9.58	24 Years	13.41
12 Years	10.18	25 Years	13.45
13 Years	11.73		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	12.21	3/31/2006	33.38
3/31/2018	20.78	3/31/2005	26.28
3/31/2017	14.36	3/31/2004	27.40
3/31/2016	8.84	3/31/2003	-3.39
3/31/2015	8.36	3/31/2002	-6.15
3/31/2014	20.47	3/31/2001	-12.36
3/31/2013	10.99	3/31/2000	50.91
3/31/2012	8.00	3/31/1999	12.05
3/31/2011	23.75	3/31/1998	39.05
3/31/2010	26.36	3/31/1997	24.13
3/31/2009	-32.48	3/31/1996	25.27
3/31/2008	17.62	3/31/1995	15.86
3/31/2007	36.44		

PRIVATE EQUITY: FUND SINCE INCEPTION ANALYSIS



CAMBRIDGE
ASSOCIATES

AS OF MARCH 31, 2019

PRIVATE 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
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	14.89	10.88	17.47	28.60	-2.08	24.53	1.97	0.00	1.97	46
1996	11.19	9.51	8.49	9.35	13.45	-1.79	19.38	1.63	0.00	1.63	52
1997	9.14	9.70	9.34	9.58	15.52	0.65	19.43	1.58	0.00	1.58	84
1998	8.63	11.35	10.76	13.11	18.98	4.83	11.13	1.54	0.02	1.56	80
1999	15.02	13.21	12.14	12.91	21.83	4.14	15.33	1.89	0.01	1.89	76
2000	18.48	16.45	15.57	16.73	24.43	8.27	15.72	1.99	0.02	2.01	112
2001	23.90	20.36	18.27	20.67	31.52	11.33	17.53	2.14	0.02	2.17	46
2002	18.84	15.66	18.23	17.86	26.70	6.40	28.40	1.96	0.03	1.99	53
2003	16.37	17.11	14.35	17.43	26.81	5.84	17.58	1.81	0.03	1.84	50
2004	10.98	16.17	9.54	13.45	14.86	5.09	29.19	1.65	0.07	1.72	100
2005	7.38	7.66	7.89	9.20	14.04	2.00	14.23	1.42	0.09	1.51	147
2006	7.81	8.54	8.79	9.85	14.35	3.63	13.72	1.37	0.18	1.55	135
2007	11.16	8.27	9.44	9.25	14.99	3.59	13.71	1.33	0.35	1.68	168
2008	13.39	11.09	10.86	11.80	17.02	5.01	15.23	1.35	0.40	1.75	106
2009	17.32	14.48	14.20	14.81	22.07	7.99	12.28	1.19	0.88	2.07	52
2010	14.13	14.32	14.54	15.40	22.11	5.57	15.25	0.88	0.83	1.71	57
2011	15.54	13.98	13.77	14.25	18.35	6.45	10.32	0.78	0.90	1.68	100
2012	16.34	14.26	15.07	15.04	18.20	8.82	9.38	0.54	1.07	1.61	89
2013	15.62	15.37	16.08	17.11	20.51	8.22	10.48	0.31	1.14	1.45	89
2014	20.70	17.82	15.92	19.72	23.39	11.24	12.05	0.27	1.20	1.47	99
2015	14.30	9.56	10.97	14.43	20.53	2.36	20.89	0.09	1.13	1.22	98
2016	14.96	10.93	10.57	15.30	20.71	2.39	24.40	0.05	1.12	1.17	79
2017	0.26	-2.35	-4.97	6.45	9.55	-12.35	33.26	0.02	0.98	1.00	53



Notes: Based on data compiled from 2,007 private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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.

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PRIVATE 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 INDEX	MSCI EAFE INDEX (NET)		MSCI EUROPE INDEX (NET)		CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)	CA BENCHMARK INDEX	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
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	84	9.14	3.31	583	3.60	554	1.58	1.18	1.20	1.58	1.18	1.20
1998	80	8.63	3.87	477	4.16	447	1.56	1.21	1.23	1.54	1.20	1.22
1999	76	15.02	6.55	848	7.11	791	1.89	1.30	1.33	1.89	1.30	1.33
2000	112	18.48	9.80	868	10.26	822	2.01	1.39	1.41	1.99	1.38	1.40
2001	46	23.90	10.92	1,298	11.40	1,250	2.17	1.39	1.41	2.14	1.38	1.40
2002	53	18.84	8.07	1,077	8.53	1,031	1.99	1.33	1.35	1.96	1.31	1.33
2003	50	16.37	5.06	1,131	5.46	1,091	1.84	1.21	1.23	1.81	1.19	1.21
2004	100	10.98	2.46	853	2.57	842	1.72	1.13	1.13	1.65	1.09	1.09
2005	147	7.38	1.57	580	1.45	593	1.51	1.09	1.08	1.42	1.03	1.03
2006	135	7.81	2.25	556	2.06	575	1.55	1.13	1.12	1.37	1.01	1.00
2007	168	11.16	4.74	643	4.62	654	1.68	1.24	1.23	1.33	1.02	1.02
2008	106	13.39	6.01	738	5.96	744	1.75	1.28	1.27	1.35	1.03	1.03
2009	52	17.32	5.60	1,172	5.32	1,200	2.07	1.26	1.24	1.19	0.81	0.81
2010	57	14.13	5.49	865	5.13	900	1.71	1.23	1.21	0.88	0.69	0.68
2011	100	15.54	4.85	1,069	4.25	1,128	1.68	1.17	1.15	0.78	0.58	0.58
2012	89	16.34	4.07	1,227	3.30	1,304	1.61	1.13	1.10	0.54	0.41	0.40
2013	89	15.62	4.12	1,150	3.39	1,223	1.45	1.10	1.08	0.31	0.25	0.25
2014	99	20.70	4.46	1,624	3.86	1,684	1.47	1.09	1.08	0.27	0.22	0.21
2015	98	14.30	4.08	1,022	3.72	1,058	1.22	1.06	1.05	0.09	0.08	0.08
2016	79	14.96	2.47	1,249	2.21	1,275	1.17	1.03	1.02	0.05	0.05	0.05
2017	53	0.26	0.56	-31	1.03	-77	1.00	1.00	1.01	0.02	0.02	0.02

Notes: Based on data compiled from 2,007 private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI Inc., and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

PRIVATE 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 INDEX	S&P 500 INDEX			RUSSELL 2000® INDEX		CA BENCHMARK INDEX	S&P 500 INDEX	RUSSELL 2000® INDEX	CA BENCHMARK INDEX	S&P 500 INDEX	RUSSELL 2000® INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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	84	9.14	1.69	745	7.16	198	1.58	1.09	1.42	1.58	1.09	1.42	
1998	80	8.63	1.77	686	7.35	128	1.56	1.09	1.42	1.54	1.08	1.41	
1999	76	15.02	2.96	1,206	8.32	670	1.89	1.13	1.39	1.89	1.12	1.38	
2000	112	18.48	5.77	1,271	9.74	874	2.01	1.24	1.41	1.99	1.22	1.39	
2001	46	23.90	7.43	1,647	10.07	1,383	2.17	1.31	1.41	2.14	1.30	1.40	
2002	53	18.84	6.85	1,199	8.31	1,053	1.99	1.34	1.41	1.96	1.31	1.38	
2003	50	16.37	6.09	1,028	6.63	974	1.84	1.31	1.34	1.81	1.28	1.31	
2004	100	10.98	5.90	509	6.19	479	1.72	1.37	1.39	1.65	1.30	1.32	
2005	147	7.38	6.90	48	7.09	28	1.51	1.50	1.51	1.42	1.38	1.40	
2006	135	7.81	8.53	-72	8.53	-72	1.55	1.63	1.62	1.37	1.41	1.42	
2007	168	11.16	12.09	-93	11.50	-34	1.68	1.74	1.68	1.33	1.39	1.36	
2008	106	13.39	13.83	-44	12.86	54	1.75	1.77	1.68	1.35	1.36	1.32	
2009	52	17.32	13.54	378	11.63	569	2.07	1.73	1.60	1.19	1.06	1.01	
2010	57	14.13	13.33	81	11.15	299	1.71	1.65	1.51	0.88	0.87	0.83	
2011	100	15.54	12.51	302	10.11	542	1.68	1.51	1.39	0.78	0.71	0.68	
2012	89	16.34	11.76	458	9.05	729	1.61	1.40	1.30	0.54	0.49	0.47	
2013	89	15.62	11.60	402	8.59	703	1.45	1.32	1.23	0.31	0.29	0.28	
2014	99	20.70	11.97	873	8.52	1,218	1.47	1.25	1.17	0.27	0.24	0.23	
2015	98	14.30	12.08	222	7.55	675	1.22	1.18	1.11	0.09	0.09	0.09	
2016	79	14.96	11.29	367	5.10	987	1.17	1.13	1.06	0.05	0.05	0.05	
2017	53	0.26	11.07	-1,081	1.86	-161	1.00	1.06	1.01	0.02	0.02	0.02	

Notes: Based on data compiled from 2,007 private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, Standard & Poor's, and Thomson Reuters Datastream.

PRIVATE 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 INDEX	RUSSELL 3000® INDEX		MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	RUSSELL 3000® INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)	CA BENCHMARK INDEX	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
1994	36	24.51	15.44	906	10.39	1,411	2.48	1.63	1.42	2.48	1.63	1.42
1995	46	21.24	12.62	862	8.48	1,277	1.97	1.44	1.30	1.97	1.44	1.30
1996	52	11.19	5.45	574	4.53	666	1.63	1.26	1.22	1.63	1.26	1.22
1997	84	9.14	2.49	666	2.86	628	1.58	1.13	1.15	1.58	1.13	1.15
1998	80	8.63	2.55	608	3.26	537	1.56	1.14	1.18	1.54	1.12	1.17
1999	76	15.02	3.74	1,128	5.35	967	1.89	1.17	1.25	1.89	1.16	1.24
2000	112	18.48	6.45	1,203	8.54	994	2.01	1.27	1.36	1.99	1.25	1.34
2001	46	23.90	8.03	1,587	9.96	1,394	2.17	1.33	1.39	2.14	1.32	1.38
2002	53	18.84	7.29	1,155	8.26	1,058	1.99	1.36	1.37	1.96	1.33	1.35
2003	50	16.37	6.38	999	6.35	1,002	1.84	1.33	1.30	1.81	1.29	1.27
2004	100	10.98	6.11	487	4.80	618	1.72	1.39	1.28	1.65	1.31	1.22
2005	147	7.38	7.08	30	4.52	286	1.51	1.51	1.29	1.42	1.40	1.21
2006	135	7.81	8.67	-86	5.41	240	1.55	1.64	1.36	1.37	1.42	1.19
2007	168	11.16	12.13	-97	8.11	305	1.68	1.74	1.45	1.33	1.39	1.17
2008	106	13.39	13.82	-42	9.53	387	1.75	1.77	1.48	1.35	1.36	1.16
2009	52	17.32	13.34	398	9.26	806	2.07	1.72	1.46	1.19	1.05	0.91
2010	57	14.13	13.08	105	9.20	494	1.71	1.63	1.41	0.88	0.86	0.76
2011	100	15.54	12.20	334	8.77	677	1.68	1.50	1.34	0.78	0.71	0.64
2012	89	16.34	11.39	495	8.26	809	1.61	1.39	1.27	0.54	0.49	0.45
2013	89	15.62	11.21	441	8.43	718	1.45	1.31	1.22	0.31	0.29	0.27
2014	99	20.70	11.57	913	8.92	1,178	1.47	1.24	1.18	0.27	0.24	0.23
2015	98	14.30	11.66	264	8.90	540	1.22	1.18	1.13	0.09	0.09	0.09
2016	79	14.96	10.74	422	7.69	727	1.17	1.12	1.09	0.05	0.05	0.05
2017	53	0.26	10.34	-1,008	6.83	-657	1.00	1.06	1.04	0.02	0.02	0.02

Notes: Based on data compiled from 2,007 private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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., and Thomson Reuters Datastream.

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AS OF MARCH 31, 2019

PRIVATE 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
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	1.58	1.55	1.58	1.94	1.02	84
1998	1.56	1.89	1.61	2.09	1.28	80
1999	1.89	1.78	1.56	2.22	1.17	76
2000	2.01	1.96	1.93	2.42	1.44	112
2001	2.17	1.98	1.94	2.41	1.52	46
2002	1.99	2.00	1.96	2.40	1.45	53
2003	1.84	1.86	1.79	2.16	1.36	50
2004	1.72	1.77	1.58	1.96	1.29	100
2005	1.51	1.61	1.50	1.97	1.11	147
2006	1.55	1.68	1.56	1.97	1.20	135
2007	1.68	1.57	1.54	1.91	1.18	168
2008	1.75	1.69	1.63	1.98	1.27	106
2009	2.07	1.88	1.87	2.38	1.45	52
2010	1.71	1.83	1.72	2.11	1.32	57
2011	1.68	1.65	1.61	1.87	1.31	100
2012	1.61	1.56	1.50	1.78	1.32	89
2013	1.45	1.53	1.42	1.70	1.27	89
2014	1.47	1.47	1.35	1.54	1.23	99
2015	1.22	1.21	1.19	1.38	1.03	98
2016	1.17	1.13	1.10	1.20	1.02	79
2017	1.00	0.99	0.97	1.08	0.91	53



Notes: Based on data compiled from 2,007 private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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.

AS OF MARCH 31, 2019

PRIVATE 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
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	1.58	1.55	1.58	1.94	1.02	84
1998	1.54	1.88	1.61	2.09	1.28	80
1999	1.89	1.77	1.56	2.19	1.12	76
2000	1.99	1.90	1.87	2.25	1.44	112
2001	2.14	1.97	1.94	2.41	1.50	46
2002	1.96	1.96	1.95	2.40	1.36	53
2003	1.81	1.82	1.75	2.14	1.20	50
2004	1.65	1.66	1.51	1.86	1.21	100
2005	1.42	1.49	1.38	1.81	0.98	147
2006	1.37	1.48	1.39	1.76	1.03	135
2007	1.33	1.24	1.29	1.66	0.78	168
2008	1.35	1.21	1.19	1.58	0.76	106
2009	1.19	1.10	0.94	1.69	0.53	52
2010	0.88	0.99	0.90	1.44	0.47	57
2011	0.78	0.73	0.69	1.08	0.25	100
2012	0.54	0.57	0.47	0.79	0.19	89
2013	0.31	0.41	0.27	0.54	0.10	89
2014	0.27	0.27	0.16	0.40	0.06	99
2015	0.09	0.10	0.01	0.13	0.00	98
2016	0.05	0.04	0.00	0.03	0.00	79
2017	0.02	0.04	0.00	0.00	0.00	53

AS OF MARCH 31, 2019

PRIVATE 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
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	84
1998	0.02	0.01	0.00	0.00	0.00	80
1999	0.01	0.01	0.00	0.00	0.00	76
2000	0.02	0.07	0.00	0.01	0.00	112
2001	0.02	0.02	0.00	0.01	0.00	46
2002	0.03	0.04	0.00	0.03	0.00	53
2003	0.03	0.04	0.00	0.02	0.00	50
2004	0.07	0.11	0.02	0.11	0.00	100
2005	0.09	0.12	0.04	0.15	0.00	147
2006	0.18	0.20	0.12	0.28	0.02	135
2007	0.35	0.33	0.21	0.45	0.07	168
2008	0.40	0.47	0.40	0.67	0.18	106
2009	0.88	0.78	0.77	1.11	0.32	52
2010	0.83	0.84	0.76	0.99	0.52	57
2011	0.90	0.92	0.87	1.23	0.57	100
2012	1.07	1.00	0.99	1.20	0.81	89
2013	1.14	1.12	1.10	1.31	0.94	89
2014	1.20	1.20	1.15	1.32	1.00	99
2015	1.13	1.11	1.08	1.28	0.94	98
2016	1.12	1.09	1.08	1.17	1.00	79
2017	0.98	0.95	0.96	1.07	0.90	53



Notes: Based on data compiled from 2,007 private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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 PRIVATE EQUITY: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

US PRIVATE EQUITY

AS OF MARCH 31, 2019

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
US PRIVATE EQUITY INDEX¹	5.54	15.23	16.98	14.05	16.83	13.95	12.31	13.77
Bloomberg Barclays Capital Government/Credit Bond Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36
Dow Jones Industrial Average Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones US Small Cap Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US TopCap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Nasdaq Composite Index*	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Russell 1000® Index	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 2000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
S&P 500 Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
Wilshire 5000 Total Market Index	14.11	8.93	13.59	10.52	15.99	8.77	6.56	9.77

The index is a horizon calculation based on data compiled from 1,135 US private equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, Standard & Poor's and Thomson Reuters Datastream, and Wilshire Associates.

*Capital change only

US PRIVATE EQUITY

AS OF MARCH 31, 2019

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
US PRIVATE EQUITY INDEX¹	15.23	16.98	14.05	16.83	13.95	12.31	13.77
MPME ANALYSIS²							
Russell 2000® Index	2.15	13.44	6.93	16.90	8.52	8.77	8.87
Value-Add (bps)	1,308	354	712	-7	543	354	490
Russell 2500™ Index	4.55	12.93	7.65	17.99	9.33	9.78	10.03
Value-Add (bps)	1,068	405	640	-115	463	254	375
Russell 3000® Index	8.79	13.67	10.29	16.85	9.01	7.60	8.82
Value-Add (bps)	645	331	376	-2	495	471	496
Russell Midcap® Index	6.50	12.03	8.78	18.61	9.93	9.69	10.39
Value-Add (bps)	874	495	527	-177	403	263	338
S&P 500 Index	9.51	13.66	10.87	16.63	8.91	7.33	8.71
Value-Add (bps)	573	332	318	20	505	499	506
Constructed Index: MSCI World/MSCI All Country World Index ³ (gross)	3.22	11.42	6.98	13.11	7.08	6.09	6.68
Value-Add (bps)	1,201	556	707	372	687	622	710

The index is a horizon calculation based on data compiled from 1,135 US private equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ Constructed Index: MSCI World/MSCI All Country World Index: Data rom 1/1/1986 to 12/31/1987 represented by MSCI 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.

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US PRIVATE EQUITY

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	1.30
1994 Q2	3.19
1994 Q3	1.78
1994 Q4	6.94
1995 Q1	3.86
1995 Q2	4.05
1995 Q3	4.29
1995 Q4	11.27
1996 Q1	6.10
1996 Q2	6.92
1996 Q3	6.67
1996 Q4	6.66
1997 Q1	0.85
1997 Q2	11.58
1997 Q3	7.39
1997 Q4	9.30
1998 Q1	10.61
1998 Q2	4.92
1998 Q3	-6.84
1998 Q4	8.16
1999 Q1	5.86
1999 Q2	10.48
1999 Q3	3.49
1999 Q4	19.15
2000 Q1	14.86
2000 Q2	-1.50

QUARTER ENDING	HORIZON RETURN
2000 Q3	-0.18
2000 Q4	-6.99
2001 Q1	-6.36
2001 Q2	3.07
2001 Q3	-9.00
2001 Q4	-0.04
2002 Q1	-0.67
2002 Q2	-2.94
2002 Q3	-5.02
2002 Q4	-0.15
2003 Q1	-0.37
2003 Q2	7.11
2003 Q3	5.49
2003 Q4	9.49
2004 Q1	3.05
2004 Q2	3.45
2004 Q3	2.14
2004 Q4	15.10
2005 Q1	0.59
2005 Q2	8.34
2005 Q3	7.47
2005 Q4	7.89
2006 Q1	5.70
2006 Q2	3.50
2006 Q3	3.74
2006 Q4	12.52

QUARTER ENDING	HORIZON RETURN
2007 Q1	5.74
2007 Q2	7.80
2007 Q3	1.07
2007 Q4	2.80
2008 Q1	-2.64
2008 Q2	-0.23
2008 Q3	-6.71
2008 Q4	-16.65
2009 Q1	-3.73
2009 Q2	4.81
2009 Q3	6.45
2009 Q4	6.24
2010 Q1	4.91
2010 Q2	2.05
2010 Q3	4.84
2010 Q4	9.32
2011 Q1	5.25
2011 Q2	4.74
2011 Q3	-4.47
2011 Q4	4.99
2012 Q1	5.64
2012 Q2	0.25
2012 Q3	4.05
2012 Q4	3.81
2013 Q1	4.94
2013 Q2	3.46

QUARTER ENDING	HORIZON RETURN
2013 Q3	5.75
2013 Q4	7.60
2014 Q1	3.31
2014 Q2	4.88
2014 Q3	1.63
2014 Q4	3.33
2015 Q1	3.39
2015 Q2	4.52
2015 Q3	-0.20
2015 Q4	1.96
2016 Q1	0.47
2016 Q2	3.57
2016 Q3	3.95
2016 Q4	3.85
2017 Q1	4.19
2017 Q2	4.58
2017 Q3	4.36
2017 Q4	5.77
2018 Q1	3.20
2018 Q2	5.76
2018 Q3	4.07
2018 Q4	-0.83
2019 Q1	5.54



The index is a horizon calculation based on data compiled from 1,135 US private equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.

AS OF MARCH 31, 2019

US PRIVATE EQUITY

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	15.23	14 Years	13.41
2 Years	17.26	15 Years	13.95
3 Years	16.98	16 Years	14.80
4 Years	14.09	17 Years	13.33
5 Years	14.05	18 Years	12.18
6 Years	15.66	19 Years	10.74
7 Years	15.20	20 Years	12.31
8 Years	14.44	21 Years	12.31
9 Years	15.75	22 Years	13.11
10 Years	16.83	23 Years	13.35
11 Years	11.35	24 Years	13.70
12 Years	11.10	25 Years	13.77
13 Years	12.20		

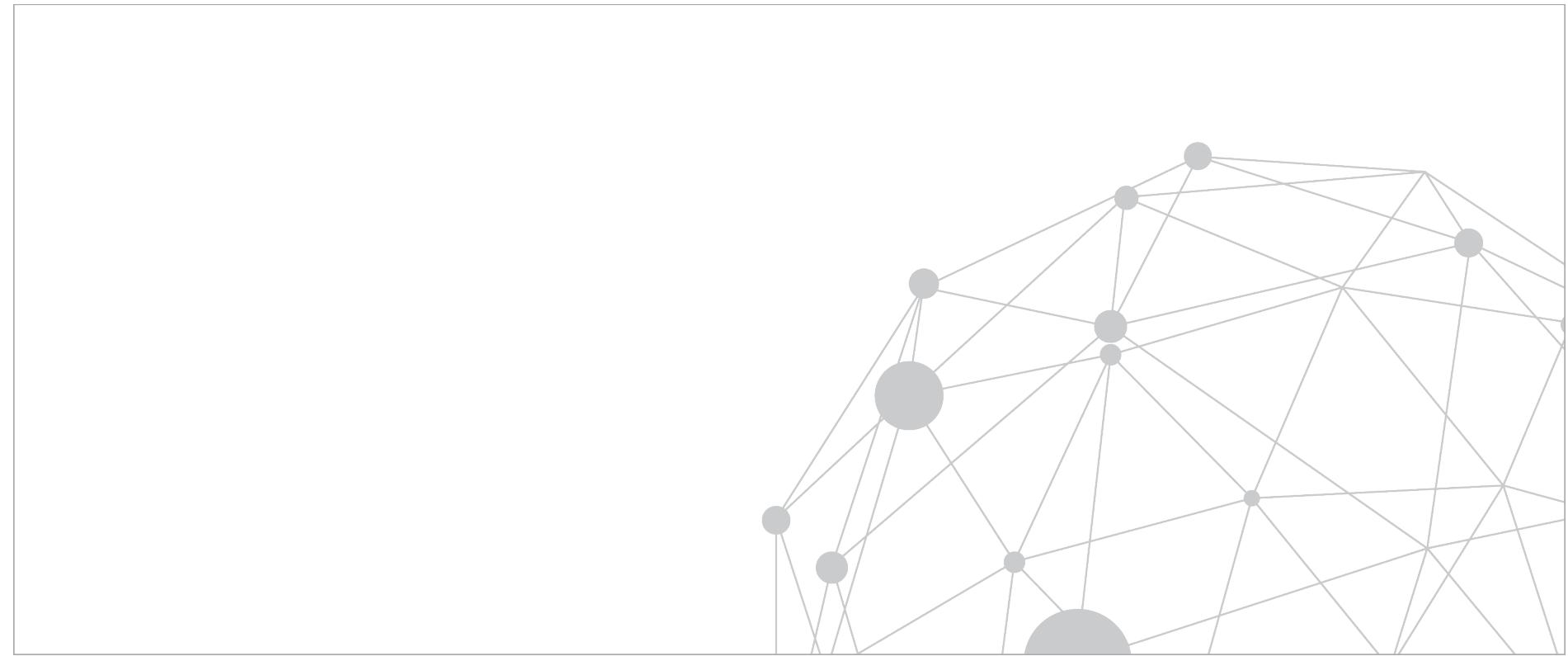
ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	15.23	3/31/2006	32.82
3/31/2018	19.17	3/31/2005	22.35
3/31/2017	16.47	3/31/2004	27.53
3/31/2016	7.00	3/31/2003	-8.04
3/31/2015	13.92	3/31/2002	-6.86
3/31/2014	21.60	3/31/2001	-14.54
3/31/2013	13.41	3/31/2000	57.06
3/31/2012	10.97	3/31/1999	12.27
3/31/2011	23.18	3/31/1998	44.88
3/31/2010	24.36	3/31/1997	22.93
3/31/2009	-25.67	3/31/1996	28.07
3/31/2008	8.34	3/31/1995	16.67
3/31/2007	27.84		



The index is a horizon calculation based on data compiled from 1,135 US private equity funds, including fully liquidated partnerships, formed between 1986 and 2018. All returns are net of fees, expenses, and carried interest.

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US BUYOUT & GROWTH EQUITY: FUND SINCE INCEPTION ANALYSIS



AS OF MARCH 31, 2019

US PRIVATE 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
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	7.10	6.68	6.92	5.72	12.67	-1.04	15.40	1.44	0.00	1.45	41
1998	7.19	9.91	9.65	10.36	14.68	3.92	10.03	1.44	0.02	1.45	47
1999	14.63	10.74	11.98	11.25	17.68	4.54	12.17	1.89	0.01	1.90	43
2000	15.05	13.21	13.24	12.98	21.15	7.48	12.36	1.81	0.02	1.84	67
2001	20.10	18.23	15.48	17.03	30.06	11.33	16.43	2.19	0.04	2.23	22
2002	15.92	12.08	16.04	14.22	22.40	5.57	25.26	1.85	0.05	1.90	27
2003	14.57	13.75	11.62	12.87	16.63	3.68	13.57	1.92	0.05	1.97	26
2004	10.21	10.42	9.91	10.43	12.90	7.55	7.03	1.65	0.06	1.71	55
2005	8.72	8.06	8.86	10.34	14.60	3.85	14.51	1.55	0.11	1.66	75
2006	9.14	12.08	11.94	11.80	16.25	7.28	14.13	1.47	0.22	1.69	60
2007	12.50	12.11	12.56	12.05	19.50	7.63	11.66	1.33	0.41	1.74	75
2008	16.18	16.92	15.30	16.18	22.98	10.05	10.78	1.48	0.41	1.89	51
2009	20.98	19.08	20.89	19.08	24.88	9.83	12.41	1.39	0.93	2.32	26
2010	22.39	24.86	19.02	23.79	24.51	16.45	17.46	1.46	0.90	2.36	19
2011	17.12	16.75	15.65	16.89	21.17	11.90	9.91	0.82	0.91	1.73	55
2012	18.28	18.06	15.82	19.19	21.50	11.31	9.04	0.45	1.15	1.60	36
2013	15.38	16.09	16.26	18.09	20.40	10.62	10.94	0.32	1.17	1.48	50
2014	21.81	18.86	17.18	19.78	25.96	11.24	12.32	0.32	1.19	1.51	59
2015	15.29	12.52	11.02	16.41	23.64	2.55	19.13	0.09	1.14	1.23	58
2016	15.31	14.22	11.30	16.70	19.42	2.69	24.47	0.07	1.11	1.18	41
2017	3.89	1.64	2.17	11.97	15.74	-10.41	34.45	0.03	0.99	1.02	32



Notes: Based on data compiled from 1,034 US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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.

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AS OF MARCH 31, 2019

US PRIVATE 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 INDEX	RUSSELL 2000® INDEX			RUSSELL 2500™ INDEX		CA BENCHMARK INDEX	RUSSELL 2000® INDEX	RUSSELL 2500™ INDEX	CA BENCHMARK INDEX	RUSSELL 2000® INDEX	RUSSELL 2500™ INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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	7.10	7.33	-22	9.10	-200	1.45	1.45	1.58	1.44	1.44	1.57	
1998	47	7.19	7.39	-21	8.92	-173	1.45	1.44	1.56	1.44	1.42	1.53	
1999	43	14.63	8.28	635	9.42	521	1.90	1.39	1.46	1.89	1.39	1.45	
2000	67	15.05	9.36	569	10.25	480	1.84	1.42	1.48	1.81	1.40	1.45	
2001	22	20.10	8.68	1,142	9.55	1,055	2.23	1.44	1.50	2.19	1.42	1.48	
2002	27	15.92	8.20	772	9.12	680	1.90	1.44	1.50	1.85	1.39	1.45	
2003	26	14.57	6.29	827	7.13	744	1.97	1.37	1.43	1.92	1.33	1.38	
2004	55	10.21	6.11	410	6.95	326	1.71	1.40	1.47	1.65	1.34	1.40	
2005	75	8.72	7.32	140	8.15	57	1.66	1.54	1.62	1.55	1.42	1.49	
2006	60	9.14	8.11	103	8.85	30	1.69	1.59	1.66	1.47	1.39	1.45	
2007	75	12.50	11.66	84	12.42	8	1.74	1.66	1.71	1.33	1.29	1.33	
2008	51	16.18	12.93	325	13.67	251	1.89	1.63	1.67	1.48	1.32	1.35	
2009	26	20.98	11.77	921	12.30	867	2.32	1.57	1.60	1.39	1.05	1.06	
2010	19	22.39	11.68	1,071	12.11	1,028	2.36	1.54	1.56	1.46	1.06	1.07	
2011	55	17.12	10.14	698	10.55	657	1.73	1.38	1.40	0.82	0.70	0.70	
2012	36	18.28	8.75	953	9.23	905	1.60	1.25	1.27	0.45	0.39	0.38	
2013	50	15.38	8.54	684	9.05	633	1.48	1.24	1.26	0.32	0.29	0.29	
2014	59	21.81	8.42	1,339	9.20	1,261	1.51	1.17	1.19	0.32	0.27	0.27	
2015	58	15.29	7.54	775	9.01	628	1.23	1.11	1.13	0.09	0.09	0.09	
2016	41	15.31	5.33	998	7.49	782	1.18	1.06	1.08	0.07	0.06	0.06	
2017	32	3.89	1.73	215	5.90	-202	1.02	1.01	1.03	0.03	0.03	0.03	

Notes: Based on data compiled from 1,034 US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, and Thomson Reuters Datastream.

AS OF MARCH 31, 2019

US PRIVATE 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 INDEX	RUSSELL 3000® INDEX			RUSSELL MIDCAP® INDEX	CA BENCHMARK INDEX	RUSSELL 3000® INDEX	RUSSELL MIDCAP® INDEX	CA BENCHMARK INDEX	RUSSELL 3000® INDEX	RUSSELL MIDCAP® INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR						
1994	15	25.52	13.63	1,189		13.35	1,217			2.58	1.60	1.69
1995	26	21.79	12.62	917		12.44	935			2.00	1.46	1.51
1996	28	10.42	4.98	544		9.12	130			1.60	1.25	1.54
1997	41	7.10	2.50	460		8.57	-146			1.45	1.14	1.54
1998	47	7.19	2.72	446		8.44	-125			1.45	1.15	1.53
1999	43	14.63	3.76	1,087		9.35	528			1.90	1.17	1.46
2000	67	15.05	6.33	872		10.50	455			1.84	1.29	1.50
2001	22	20.10	7.40	1,270		10.19	992			2.23	1.38	1.54
2002	27	15.92	7.24	868		9.77	615			1.90	1.39	1.54
2003	26	14.57	5.91	865		7.52	705			1.97	1.35	1.46
2004	55	10.21	5.99	423		7.21	301			1.71	1.40	1.49
2005	75	8.72	7.33	139		8.34	38			1.66	1.55	1.64
2006	60	9.14	8.22	92		8.98	16			1.69	1.61	1.67
2007	75	12.50	12.32	18		12.80	-30			1.74	1.72	1.74
2008	51	16.18	13.81	237		14.15	203			1.89	1.70	1.70
2009	26	20.98	13.43	755		12.86	812			2.32	1.68	1.63
2010	19	22.39	13.38	901		12.64	975			2.36	1.64	1.59
2011	55	17.12	12.22	490		11.11	601			1.73	1.48	1.42
2012	36	18.28	11.25	703		9.63	865			1.60	1.34	1.28
2013	50	15.38	11.12	426		9.44	594			1.48	1.33	1.27
2014	59	21.81	11.45	1,037		9.68	1,213			1.51	1.24	1.20
2015	58	15.29	11.67	361		10.04	524			1.23	1.17	1.15
2016	41	15.31	10.83	449		9.28	603			1.18	1.12	1.11
2017	32	3.89	10.15	-627		10.40	-651			1.02	1.06	1.06

Notes: Based on data compiled from 1,034 US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, and Thomson Reuters Datastream.

AS OF MARCH 31, 2019

US PRIVATE 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 INDEX	S&P 500 INDEX		MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	S&P 500 INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)	CA BENCHMARK INDEX	S&P 500 INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD					
1994	15	25.52	14.30	1,122	9.75	1,578	2.58	1.62	1.43	2.58	1.62	1.43
1995	26	21.79	13.31	847	8.50	1,329	2.00	1.47	1.31	2.00	1.47	1.31
1996	28	10.42	4.57	585	4.18	624	1.60	1.22	1.22	1.60	1.22	1.21
1997	41	7.10	1.68	542	3.13	397	1.45	1.09	1.18	1.44	1.09	1.17
1998	47	7.19	1.97	522	3.37	381	1.45	1.11	1.19	1.44	1.09	1.18
1999	43	14.63	2.99	1,164	5.49	914	1.90	1.13	1.26	1.89	1.13	1.25
2000	67	15.05	5.70	936	8.18	687	1.84	1.26	1.36	1.81	1.23	1.35
2001	22	20.10	6.94	1,317	8.50	1,160	2.23	1.36	1.41	2.19	1.34	1.39
2002	27	15.92	6.80	911	8.12	779	1.90	1.37	1.40	1.85	1.31	1.36
2003	26	14.57	5.62	895	5.66	891	1.97	1.33	1.31	1.92	1.28	1.27
2004	55	10.21	5.77	444	4.62	559	1.71	1.38	1.28	1.65	1.31	1.23
2005	75	8.72	7.15	157	4.68	404	1.66	1.54	1.32	1.55	1.41	1.22
2006	60	9.14	8.09	105	5.09	405	1.69	1.60	1.34	1.47	1.38	1.17
2007	75	12.50	12.29	21	8.32	418	1.74	1.72	1.44	1.33	1.31	1.12
2008	51	16.18	13.82	236	9.55	663	1.89	1.70	1.44	1.48	1.36	1.17
2009	26	20.98	13.63	734	9.34	1,163	2.32	1.69	1.43	1.39	1.10	0.96
2010	19	22.39	13.61	879	9.42	1,297	2.36	1.66	1.42	1.46	1.11	0.97
2011	55	17.12	12.54	458	8.81	831	1.73	1.49	1.33	0.82	0.73	0.66
2012	36	18.28	11.64	664	8.33	995	1.60	1.35	1.24	0.45	0.40	0.37
2013	50	15.38	11.53	385	8.33	705	1.48	1.34	1.24	0.32	0.30	0.28
2014	59	21.81	11.86	995	8.76	1,305	1.51	1.25	1.18	0.32	0.28	0.27
2015	58	15.29	12.09	320	8.91	637	1.23	1.18	1.13	0.09	0.09	0.09
2016	41	15.31	11.37	395	7.93	738	1.18	1.13	1.09	0.07	0.07	0.06
2017	32	3.89	10.88	-699	6.69	-281	1.02	1.06	1.04	0.03	0.03	0.03

Notes: Based on data compiled from 1,034 US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

US PRIVATE 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
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	1.70	0.90	41
1998	1.45	1.64	1.50	2.00	1.27	47
1999	1.90	1.70	1.54	2.19	1.23	43
2000	1.84	1.82	1.78	2.22	1.35	67
2001	2.23	1.87	1.86	2.24	1.51	22
2002	1.90	1.86	1.88	2.39	1.36	27
2003	1.97	1.72	1.77	2.01	1.26	26
2004	1.71	1.72	1.64	1.93	1.46	55
2005	1.66	1.74	1.64	2.20	1.27	75
2006	1.69	1.83	1.76	2.15	1.45	60
2007	1.74	1.76	1.73	2.11	1.42	75
2008	1.89	1.92	1.80	2.28	1.57	51
2009	2.32	2.11	2.25	2.49	1.61	26
2010	2.36	2.46	2.11	2.42	1.88	19
2011	1.73	1.77	1.68	1.94	1.52	55
2012	1.60	1.68	1.53	1.84	1.41	36
2013	1.48	1.55	1.48	1.66	1.30	50
2014	1.51	1.50	1.42	1.57	1.25	59
2015	1.23	1.24	1.20	1.38	1.04	58
2016	1.18	1.15	1.10	1.20	1.03	41
2017	1.02	1.02	1.01	1.10	0.94	32



Notes: Based on data compiled from 1,034 US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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.

AS OF MARCH 31, 2019

US PRIVATE 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
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	1.44	1.63	1.49	1.93	1.27	47
1999	1.89	1.68	1.54	2.11	1.23	43
2000	1.81	1.73	1.73	2.20	1.35	67
2001	2.19	1.84	1.83	2.19	1.49	22
2002	1.85	1.80	1.88	2.39	1.31	27
2003	1.92	1.65	1.72	2.01	1.15	26
2004	1.65	1.64	1.53	1.84	1.34	55
2005	1.55	1.60	1.46	2.03	1.14	75
2006	1.47	1.58	1.50	1.92	1.27	60
2007	1.33	1.41	1.41	1.90	0.98	75
2008	1.48	1.46	1.44	1.79	1.13	51
2009	1.39	1.34	1.38	1.94	0.80	26
2010	1.46	1.54	1.44	1.69	1.03	19
2011	0.82	0.81	0.79	1.11	0.36	55
2012	0.45	0.68	0.48	0.98	0.29	36
2013	0.32	0.40	0.31	0.51	0.12	50
2014	0.32	0.33	0.22	0.49	0.08	59
2015	0.09	0.11	0.03	0.16	0.00	58
2016	0.07	0.04	0.00	0.01	0.00	41
2017	0.03	0.06	0.00	0.00	0.00	32

AS OF MARCH 31, 2019

US PRIVATE EQUITY

RESIDUAL VALUE TO PAID IN CAPITAL MULTIPLE (RVPI)

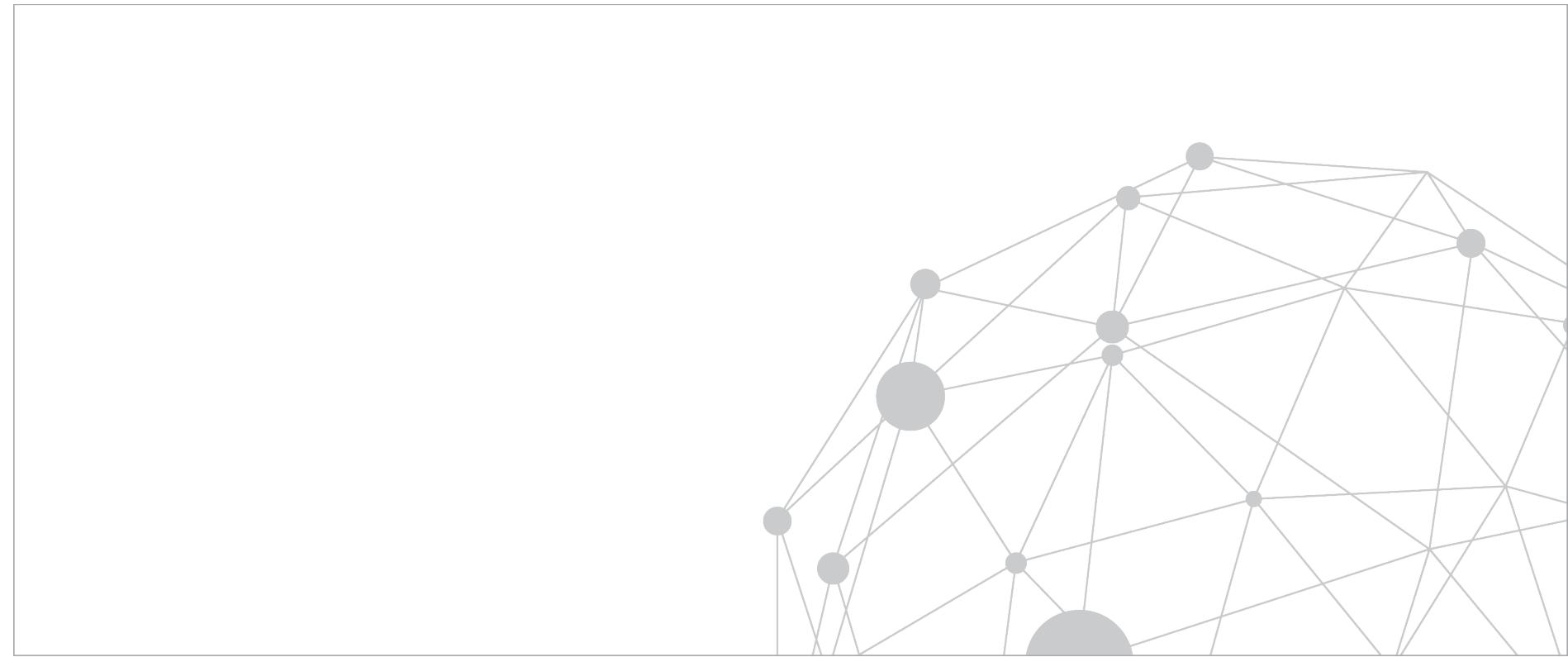
Net to Limited Partners

VINTAGE YEAR	POOLED RETURN	ARITHMETIC MEAN	MEDIAN	UPPER QUARTILE	LOWER QUARTILE	NUMBER OF FUNDS
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	0.02	0.01	0.00	0.00	0.00	47
1999	0.01	0.01	0.00	0.00	0.00	43
2000	0.02	0.10	0.00	0.02	0.00	67
2001	0.04	0.03	0.00	0.05	0.00	22
2002	0.05	0.06	0.00	0.12	0.00	27
2003	0.05	0.08	0.01	0.04	0.00	26
2004	0.06	0.08	0.03	0.12	0.00	55
2005	0.11	0.13	0.05	0.16	0.01	75
2006	0.22	0.24	0.18	0.37	0.06	60
2007	0.41	0.35	0.27	0.53	0.09	75
2008	0.41	0.46	0.39	0.59	0.21	51
2009	0.93	0.76	0.75	1.10	0.40	26
2010	0.90	0.93	0.81	1.23	0.48	19
2011	0.91	0.95	0.88	1.23	0.64	55
2012	1.15	1.00	1.04	1.21	0.84	36
2013	1.17	1.15	1.16	1.34	0.99	50
2014	1.19	1.18	1.15	1.37	1.01	59
2015	1.14	1.14	1.08	1.25	1.01	58
2016	1.11	1.10	1.08	1.14	1.02	41
2017	0.99	0.96	0.97	1.08	0.91	32



Notes: Based on data compiled from 1,034 US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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 PRIVATE EQUITY: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

AS OF MARCH 31, 2019

EX US PRIVATE EQUITY

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
EX US PRIVATE EQUITY INDEX¹	4.03	7.68	13.93	10.12	13.55	13.21	12.70	12.82
Bloomberg Barclays Capital Government/Credit Bond Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones Industrial Average Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US Small Cap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Dow Jones US TopCap Index	9.95	-7.06	11.09	4.06	9.31	8.28	8.73	5.76
MSCI Emerging Markets Index (gross)	10.84	-3.72	6.56	1.04	8.95	5.24	3.86	6.72
MSCI Europe Index (US\$) (net)	12.84	5.45	7.08	5.27	10.79	5.88	3.66	6.92
MSCI Europe Index (€) (net)	8.53	-3.86	8.82	4.96	9.12	4.83	4.15	2.55
MSCI Pacific Index (net)	10.45	-3.14	7.29	2.20	8.82	5.18	4.11	5.05
MSCI World Ex US Index (net)	12.48	4.01	10.68	6.78	12.38	6.82	4.82	7.03
MSCI World Index (net)	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Nasdaq Composite Index*	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 1000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
Russell 2000® Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
S&P 500 Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36

The index is a horizon calculation based on data compiled from 1,032 Ex US private equity funds, including fully liquidated partnerships, formed between 1987 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets Indices are gross of dividend taxes. Total Returns for MSCI Developed Markets Indices are net of dividend taxes.

AS OF MARCH 31, 2019

EX US PRIVATE 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
EX US PRIVATE EQUITY INDEX¹	7.68	13.93	10.12	13.55	13.21	12.70	12.82

MPME ANALYSIS ²							
MSCI EAFE Index (net)	-3.54	7.41	2.06	8.44	4.39	4.24	4.35
Value-Add (bps)	1,122	652	805	510	882	846	846
MSCI Europe Index (net)	-3.51	6.67	0.71	8.45	4.35	4.13	4.46
Value-Add (bps)	1,120	726	941	510	885	857	835
S&P 500 Index	9.60	13.71	10.75	16.08	9.56	8.49	9.08
Value-Add (bps)	-192	21	-63	-253	365	421	374
Constructed Index: Global Financial Data Emerging Markets/MSCI Emerging Markets (gross) ³	-6.88	11.34	3.82	8.82	6.63	7.37	6.99
Value-Add (bps)	1,456	259	630	473	658	533	582
Constructed Index: MSCI World/MSCI All Country World Index ⁴ (gross)	3.28	11.50	6.75	12.31	7.22	6.64	6.90
Value-Add (bps)	441	243	337	123	598	606	592

The index is a horizon calculation based on data compiled from 1,032 Ex US private equity funds, including fully liquidated partnerships, formed between 1987 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ 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.

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

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

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

EX US PRIVATE EQUITY

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	8.04
1994 Q2	0.15
1994 Q3	3.48
1994 Q4	1.53
1995 Q1	4.59
1995 Q2	3.32
1995 Q3	3.35
1995 Q4	0.98
1996 Q1	1.06
1996 Q2	5.16
1996 Q3	4.87
1996 Q4	19.50
1997 Q1	-0.52
1997 Q2	4.32
1997 Q3	1.79
1997 Q4	5.97
1998 Q1	2.38
1998 Q2	8.69
1998 Q3	2.14
1998 Q4	1.78
1999 Q1	-0.31
1999 Q2	6.75
1999 Q3	6.15
1999 Q4	10.50
2000 Q1	4.44
2000 Q2	1.65

QUARTER ENDING	HORIZON RETURN
2000 Q3	-2.51
2000 Q4	1.38
2001 Q1	-5.13
2001 Q2	-0.55
2001 Q3	0.33
2001 Q4	-3.62
2002 Q1	-0.23
2002 Q2	6.97
2002 Q3	-3.00
2002 Q4	5.06
2003 Q1	0.53
2003 Q2	7.27
2003 Q3	2.46
2003 Q4	13.54
2004 Q1	1.85
2004 Q2	5.85
2004 Q3	5.01
2004 Q4	19.07
2005 Q1	1.44
2005 Q2	6.25
2005 Q3	5.63
2005 Q4	11.48
2006 Q1	7.58
2006 Q2	16.05
2006 Q3	3.90
2006 Q4	21.69

QUARTER ENDING	HORIZON RETURN
2007 Q1	4.45
2007 Q2	14.97
2007 Q3	6.60
2007 Q4	6.63
2008 Q1	2.72
2008 Q2	-3.73
2008 Q3	-15.61
2008 Q4	-22.17
2009 Q1	-7.24
2009 Q2	10.17
2009 Q3	9.33
2009 Q4	8.59
2010 Q1	-0.43
2010 Q2	-2.64
2010 Q3	11.33
2010 Q4	9.07
2011 Q1	5.19
2011 Q2	5.99
2011 Q3	-9.27
2011 Q4	0.50
2012 Q1	7.41
2012 Q2	-2.04
2012 Q3	3.63
2012 Q4	4.84
2013 Q1	1.04
2013 Q2	1.47

QUARTER ENDING	HORIZON RETURN
2013 Q3	5.99
2013 Q4	7.44
2014 Q1	2.98
2014 Q2	4.71
2014 Q3	-3.09
2014 Q4	0.60
2015 Q1	-1.21
2015 Q2	6.67
2015 Q3	-2.12
2015 Q4	3.69
2016 Q1	3.00
2016 Q2	1.13
2016 Q3	4.20
2016 Q4	1.01
2017 Q1	4.59
2017 Q2	8.18
2017 Q3	5.65
2017 Q4	5.68
2018 Q1	1.91
2018 Q2	2.30
2018 Q3	1.98
2018 Q4	-0.80
2019 Q1	4.03

AS OF MARCH 31, 2019

EX US PRIVATE EQUITY

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	7.68	14 Years	12.11
2 Years	15.47	15 Years	13.21
3 Years	13.93	16 Years	13.89
4 Years	13.25	17 Years	13.69
5 Years	10.12	18 Years	12.94
6 Years	11.91	19 Years	12.26
7 Years	11.10	20 Years	12.70
8 Years	9.94	21 Years	12.67
9 Years	11.75	22 Years	12.70
10 Years	13.55	23 Years	12.86
11 Years	7.12	24 Years	12.83
12 Years	8.74	25 Years	12.82
13 Years	10.94		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	7.68	3/31/2006	34.44
3/31/2018	23.29	3/31/2005	34.31
3/31/2017	11.24	3/31/2004	27.10
3/31/2016	11.58	3/31/2003	9.43
3/31/2015	1.02	3/31/2002	-4.08
3/31/2014	18.92	3/31/2001	-4.96
3/31/2013	7.50	3/31/2000	30.46
3/31/2012	3.74	3/31/1999	11.18
3/31/2011	24.61	3/31/1998	15.11
3/31/2010	29.68	3/31/1997	30.74
3/31/2009	-41.83	3/31/1996	8.68
3/31/2008	33.67	3/31/1995	10.42
3/31/2007	53.29		

EX US BUYOUT & GROWTH EQUITY: FUND SINCE INCEPTION ANALYSIS



AS OF MARCH 31, 2019

EX US PRIVATE 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
1994	22.57	17.53	10.71	15.78	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	11.83	12.51	11.06	13.07	18.88	4.81	22.37	1.77	0.00	1.77	43
1998	14.40	13.39	14.11	16.36	20.91	6.28	12.40	2.03	0.01	2.03	33
1999	15.71	16.42	14.51	15.18	22.90	3.97	18.38	1.88	0.01	1.89	33
2000	26.29	21.29	19.39	22.17	35.31	9.23	18.82	2.45	0.02	2.47	45
2001	28.70	22.30	20.55	23.16	31.55	11.49	18.61	2.08	0.00	2.09	24
2002	22.91	19.37	20.10	21.16	32.25	11.76	31.40	2.08	0.02	2.10	26
2003	19.56	20.75	17.58	22.38	33.37	10.78	20.78	1.69	0.01	1.70	24
2004	12.94	23.37	9.15	18.63	27.75	2.84	42.25	1.64	0.09	1.73	45
2005	5.54	7.24	6.26	7.84	12.85	-0.69	14.03	1.28	0.06	1.34	72
2006	5.88	5.70	5.68	8.32	11.89	0.78	12.77	1.23	0.14	1.38	75
2007	9.31	5.18	6.69	6.99	11.65	-0.86	14.50	1.33	0.26	1.58	93
2008	10.32	5.67	7.09	7.78	11.92	3.53	16.77	1.19	0.39	1.58	55
2009	9.66	9.89	9.05	10.61	14.31	4.08	10.48	0.78	0.79	1.56	26
2010	10.84	9.05	9.96	10.34	16.53	0.61	10.88	0.71	0.80	1.51	38
2011	12.47	10.59	11.15	10.76	14.96	3.95	9.89	0.68	0.88	1.56	45
2012	14.95	11.68	12.30	12.35	16.70	7.60	8.78	0.62	0.99	1.61	53
2013	15.89	14.43	13.04	15.89	20.00	7.34	9.93	0.30	1.12	1.42	39
2014	18.01	16.29	14.78	19.61	19.37	11.21	11.62	0.15	1.24	1.39	40
2015	12.51	5.26	10.63	12.00	18.25	-4.85	22.76	0.08	1.13	1.21	40
2016	14.31	7.39	7.72	13.89	20.86	1.22	24.15	0.02	1.14	1.16	38
2017	-7.38	-8.43	-7.45	-2.20	3.21	-20.07	31.18	0.00	0.96	0.96	21

AS OF MARCH 31, 2019

EX US PRIVATE 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 INDEX	MSCI EAFE INDEX (NET)			MSCI EUROPE INDEX (NET)		CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)	CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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	43	11.83	2.75	907	2.93	890	1.77	1.14	1.15	1.77	1.14	1.15	
1998	33	14.40	3.75	1,065	4.04	1,036	2.03	1.18	1.19	2.03	1.17	1.19	
1999	33	15.71	6.21	950	6.81	890	1.89	1.28	1.31	1.88	1.27	1.30	
2000	45	26.29	11.00	1,529	11.46	1,483	2.47	1.40	1.42	2.45	1.39	1.41	
2001	24	28.70	13.93	1,477	14.36	1,434	2.09	1.41	1.42	2.08	1.40	1.42	
2002	26	22.91	8.29	1,461	8.72	1,419	2.10	1.31	1.32	2.08	1.30	1.31	
2003	24	19.56	6.13	1,343	6.72	1,285	1.70	1.22	1.24	1.69	1.21	1.23	
2004	45	12.94	2.97	997	3.12	982	1.73	1.14	1.15	1.64	1.09	1.09	
2005	72	5.54	1.40	414	1.29	426	1.34	1.08	1.07	1.28	1.03	1.02	
2006	75	5.88	2.65	323	2.46	342	1.38	1.16	1.14	1.23	1.03	1.02	
2007	93	9.31	4.49	482	4.38	493	1.58	1.24	1.23	1.33	1.08	1.08	
2008	55	10.32	5.96	437	5.90	443	1.58	1.30	1.29	1.19	1.00	1.00	
2009	26	9.66	5.41	425	5.13	453	1.56	1.28	1.26	0.78	0.68	0.67	
2010	38	10.84	5.36	548	5.00	584	1.51	1.22	1.21	0.71	0.60	0.60	
2011	45	12.47	4.79	768	4.21	826	1.56	1.19	1.16	0.68	0.54	0.53	
2012	53	14.95	4.08	1,087	3.32	1,162	1.61	1.14	1.11	0.62	0.48	0.47	
2013	39	15.89	4.18	1,171	3.45	1,244	1.42	1.10	1.08	0.30	0.25	0.24	
2014	40	18.01	4.81	1,321	4.30	1,371	1.39	1.09	1.08	0.15	0.13	0.13	
2015	40	12.51	4.07	844	3.68	883	1.21	1.06	1.06	0.08	0.08	0.08	
2016	38	14.31	1.75	1,256	1.41	1,291	1.16	1.02	1.02	0.02	0.02	0.02	
2017	21	-7.38	0.76	-814	1.22	-860	0.96	1.00	1.01	0.00	0.00	0.00	

Notes: Based on data compiled from 973 Ex US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI, Inc., and Thomson Returns Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

EX US PRIVATE 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 INDEX	S&P 500 INDEX		MSCI EMERGING MARKETS INDEX (GROSS)		CA BENCHMARK INDEX	S&P 500 INDEX	MSCI EMERGING MARKETS INDEX (GROSS)	CA BENCHMARK INDEX	S&P 500 INDEX	MSCI EMERGING MARKETS INDEX (GROSS)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD					
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	43	11.83	1.82	1,001	9.54	228	1.77	1.09	1.60	1.77	1.09	1.60
1998	33	14.40	1.14	1,326	12.41	200	2.03	1.05	1.75	2.03	1.05	1.74
1999	33	15.71	2.97	1,275	15.11	61	1.89	1.13	1.85	1.88	1.12	1.84
2000	45	26.29	5.87	2,042	21.81	447	2.47	1.22	1.98	2.45	1.20	1.97
2001	24	28.70	8.06	2,065	26.14	257	2.09	1.25	1.89	2.08	1.25	1.89
2002	26	22.91	6.90	1,601	18.21	470	2.10	1.31	1.72	2.08	1.30	1.71
2003	24	19.56	6.70	1,286	14.70	486	1.70	1.30	1.53	1.69	1.29	1.52
2004	45	12.94	6.16	678	8.54	440	1.73	1.36	1.42	1.64	1.26	1.35
2005	72	5.54	6.59	-104	4.23	132	1.34	1.46	1.24	1.28	1.36	1.18
2006	75	5.88	9.13	-325	2.83	304	1.38	1.67	1.16	1.23	1.44	1.04
2007	93	9.31	11.83	-253	2.61	670	1.58	1.77	1.13	1.33	1.50	0.99
2008	55	10.32	13.85	-352	3.56	676	1.58	1.86	1.17	1.19	1.36	0.89
2009	26	9.66	13.36	-370	3.31	635	1.56	1.84	1.17	0.78	0.91	0.60
2010	38	10.84	13.23	-239	3.85	699	1.51	1.65	1.16	0.71	0.76	0.55
2011	45	12.47	12.46	1	4.56	791	1.56	1.56	1.18	0.68	0.67	0.53
2012	53	14.95	11.85	310	4.82	1,013	1.61	1.46	1.17	0.62	0.58	0.48
2013	39	15.89	11.69	420	6.89	899	1.42	1.30	1.17	0.30	0.28	0.26
2014	40	18.01	12.20	581	8.03	999	1.39	1.25	1.16	0.15	0.15	0.14
2015	40	12.51	12.07	44	7.15	536	1.21	1.20	1.11	0.08	0.08	0.08
2016	38	14.31	11.14	317	4.13	1,018	1.16	1.12	1.04	0.02	0.02	0.02
2017	21	-7.38	11.49	-1,888	3.46	-1,085	0.96	1.06	1.02	0.00	0.00	0.00

Notes: Based on data compiled from 973 Ex US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI, Inc., and Thomson Returns Datastream.

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AS OF MARCH 31, 2019

EX US PRIVATE 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 INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX
			IRR	MPME IRR		TVPI	MPME TVPI	
1994	21	22.57	11.48	1,109	2.26	1.41	2.26	1.41
1995	20	19.32	8.47	1,085	1.88	1.27	1.88	1.27
1996	24	15.24	6.71	853	1.76	1.25	1.76	1.25
1997	43	11.83	2.57	926	1.77	1.13	1.77	1.13
1998	33	14.40	2.90	1,150	2.03	1.14	2.03	1.13
1999	33	15.71	5.15	1,056	1.89	1.23	1.88	1.22
2000	45	26.29	9.19	1,709	2.47	1.34	2.45	1.33
2001	24	28.70	11.90	1,681	2.09	1.36	2.08	1.36
2002	26	22.91	8.36	1,454	2.10	1.34	2.08	1.33
2003	24	19.56	7.17	1,239	1.70	1.29	1.69	1.28
2004	45	12.94	5.17	776	1.73	1.27	1.64	1.20
2005	72	5.54	4.32	123	1.34	1.27	1.28	1.20
2006	75	5.88	5.85	3	1.38	1.38	1.23	1.21
2007	93	9.31	7.82	148	1.58	1.45	1.33	1.25
2008	55	10.32	9.49	83	1.58	1.53	1.19	1.14
2009	26	9.66	9.09	57	1.56	1.52	0.78	0.77
2010	38	10.84	9.11	173	1.51	1.41	0.71	0.67
2011	45	12.47	8.68	379	1.56	1.36	0.68	0.60
2012	53	14.95	8.20	674	1.61	1.30	0.62	0.53
2013	39	15.89	8.55	734	1.42	1.21	0.30	0.26
2014	40	18.01	9.26	875	1.39	1.18	0.15	0.14
2015	40	12.51	8.88	363	1.21	1.14	0.08	0.08
2016	38	14.31	7.25	707	1.16	1.08	0.02	0.02
2017	21	-7.38	7.12	-1,451	0.96	1.04	0.00	0.00

Notes: Based on data compiled from 973 Ex US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI, Inc., and Thomson Returns Datastream.

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EX US PRIVATE EQUITY

AS OF MARCH 31, 2019

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
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	1.77	1.77	1.80	2.09	1.24	43
1998	2.03	2.24	1.74	2.22	1.48	33
1999	1.89	1.89	1.82	2.23	1.13	33
2000	2.47	2.17	2.01	2.84	1.60	45
2001	2.09	2.09	2.09	2.60	1.62	24
2002	2.10	2.15	1.99	2.44	1.52	26
2003	1.70	2.01	1.86	2.47	1.52	24
2004	1.73	1.83	1.50	2.15	1.14	45
2005	1.34	1.47	1.38	1.79	0.95	72
2006	1.38	1.56	1.38	1.73	1.04	75
2007	1.58	1.42	1.44	1.77	0.96	93
2008	1.58	1.46	1.42	1.72	1.16	55
2009	1.56	1.66	1.53	1.91	1.19	26
2010	1.51	1.51	1.41	1.81	1.02	38
2011	1.56	1.50	1.43	1.75	1.18	45
2012	1.61	1.48	1.46	1.77	1.28	53
2013	1.42	1.50	1.33	1.71	1.20	39
2014	1.39	1.43	1.30	1.49	1.21	40
2015	1.21	1.15	1.18	1.36	0.94	40
2016	1.16	1.11	1.10	1.20	1.02	38
2017	0.96	0.94	0.95	1.02	0.88	21

EX US PRIVATE EQUITY

AS OF MARCH 31, 2019

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
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	1.77	1.76	1.80	2.09	1.24	43
1998	2.03	2.23	1.74	2.22	1.48	33
1999	1.88	1.88	1.81	2.23	1.12	33
2000	2.45	2.15	2.00	2.82	1.60	45
2001	2.08	2.08	2.09	2.59	1.62	24
2002	2.08	2.13	1.98	2.43	1.52	26
2003	1.69	2.00	1.86	2.47	1.52	24
2004	1.64	1.69	1.46	1.93	1.01	45
2005	1.28	1.36	1.33	1.70	0.82	72
2006	1.23	1.39	1.21	1.57	0.83	75
2007	1.33	1.09	1.09	1.47	0.70	93
2008	1.19	0.99	0.88	1.34	0.50	55
2009	0.78	0.85	0.63	1.19	0.40	26
2010	0.71	0.72	0.65	1.16	0.24	38
2011	0.68	0.63	0.45	1.06	0.17	45
2012	0.62	0.49	0.46	0.79	0.13	53
2013	0.30	0.42	0.27	0.63	0.06	39
2014	0.15	0.20	0.14	0.25	0.03	40
2015	0.08	0.09	0.00	0.10	0.00	40
2016	0.02	0.04	0.00	0.05	0.00	38
2017	0.00	0.00	0.00	0.00	0.00	21



Notes: Based on data compiled from 973 Ex US private equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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.

AS OF MARCH 31, 2019

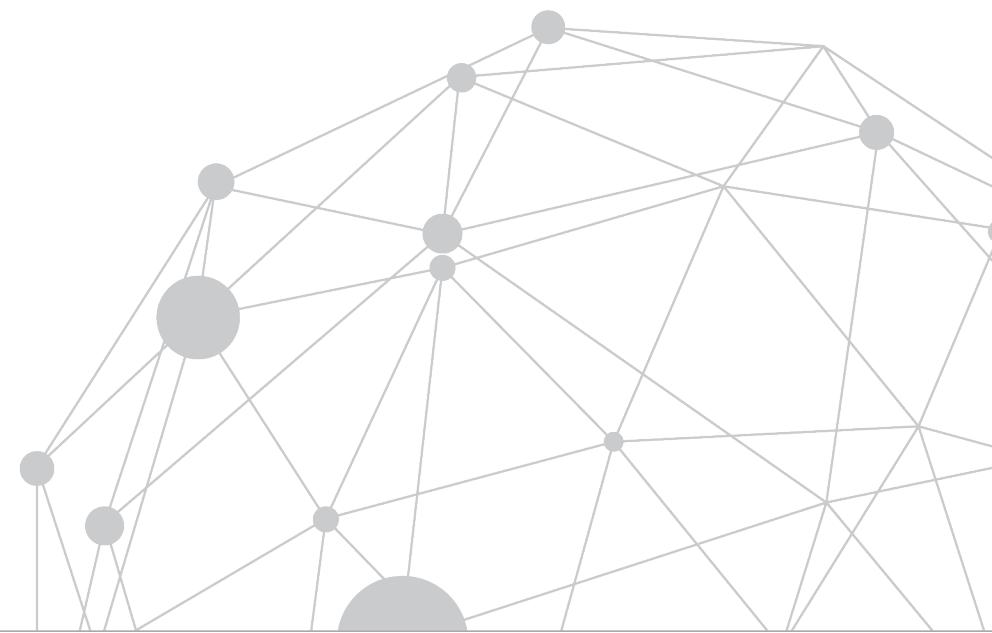
EX US PRIVATE EQUITY

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
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	0.00	0.00	0.00	0.00	43
1998	0.01	0.01	0.00	0.00	0.00	33
1999	0.01	0.01	0.00	0.00	0.00	33
2000	0.02	0.02	0.00	0.01	0.00	45
2001	0.00	0.01	0.00	0.00	0.00	24
2002	0.02	0.02	0.00	0.01	0.00	26
2003	0.01	0.01	0.00	0.00	0.00	24
2004	0.09	0.15	0.02	0.06	0.00	45
2005	0.06	0.11	0.03	0.12	0.00	72
2006	0.14	0.16	0.10	0.26	0.02	75
2007	0.26	0.32	0.15	0.42	0.05	93
2008	0.39	0.48	0.40	0.69	0.16	55
2009	0.79	0.81	0.80	1.10	0.27	26
2010	0.80	0.79	0.75	0.89	0.54	38
2011	0.88	0.88	0.86	1.14	0.56	45
2012	0.99	1.00	0.98	1.20	0.81	53
2013	1.12	1.08	1.01	1.27	0.89	39
2014	1.24	1.24	1.14	1.26	0.99	40
2015	1.13	1.06	1.08	1.31	0.92	40
2016	1.14	1.08	1.07	1.19	0.95	38
2017	0.96	0.94	0.95	1.02	0.88	21

BUYOUT: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

BUYOUT

AS OF MARCH 31, 2019

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
BUYOUT INDEX¹	4.52	10.65	15.56	12.25	15.63	13.78	12.23	13.25
Bloomberg Barclays Capital Government/Credit Bond Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones Industrial Average Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US Small Cap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Dow Jones US TopCap Index	9.95	-7.06	11.09	4.06	9.31	8.28	8.73	5.76
MSCI Emerging Markets Index (gross)	10.84	-3.72	6.56	1.04	8.95	5.24	3.86	6.72
MSCI Europe Index (US\$) (net)	12.84	5.45	7.08	5.27	10.79	5.88	3.66	6.92
MSCI Europe Index (€) (net)	8.53	-3.86	8.82	4.96	9.12	4.83	4.15	2.55
MSCI Pacific Index (net)	10.45	-3.14	7.29	2.20	8.82	5.18	4.11	5.05
MSCI World Ex US Index (net)	12.48	4.01	10.68	6.78	12.38	6.82	4.82	7.03
MSCI World Index (net)	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Nasdaq Composite Index*	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 1000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
Russell 2000® Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
S&P 500 Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36

The index is a horizon calculation based on data compiled from 1,560 buyout funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

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BUYOUT

AS OF MARCH 31, 2019

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
BUYOUT INDEX¹	10.65	15.56	12.25	15.63	13.78	12.23	13.25
MPME ANALYSIS²							
MSCI EAFE Index (net)	-3.56	7.45	2.13	9.20	4.46	4.15	4.34
Value-Add (bps)	1,420	812	1,012	643	932	808	890
MSCI Europe Index (net)	-3.53	6.71	0.78	9.29	4.52	4.09	4.76
Value-Add (bps)	1,418	885	1,146	634	926	814	849
S&P 500 Index	9.58	13.73	10.78	16.63	9.04	7.59	8.72
Value-Add (bps)	107	183	146	-100	474	463	453
Russell 2000® Index	2.33	13.76	6.78	16.88	8.69	8.90	8.97
Value-Add (bps)	832	180	547	-126	509	333	428
Russell 3000® Index	8.87	13.77	10.19	16.85	9.15	7.86	8.84
Value-Add (bps)	178	179	206	-122	463	437	441
Constructed Index: MSCI World/MSCI All Country World Index ³ (gross)	3.25	11.53	6.80	13.03	7.07	6.20	6.68
Value-Add (bps)	740	403	545	259	671	603	657

The index is a horizon calculation based on data compiled from 1,560 buyout funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ Constructed Index: MSCI World/MSCI All Country World Index: Data rom 1/1/1986 to 12/31/1987 represented by MSCI 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.

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BUYOUT

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	1.75
1994 Q2	3.09
1994 Q3	1.64
1994 Q4	6.29
1995 Q1	3.41
1995 Q2	3.66
1995 Q3	3.82
1995 Q4	10.07
1996 Q1	5.23
1996 Q2	6.22
1996 Q3	6.49
1996 Q4	9.25
1997 Q1	0.52
1997 Q2	8.59
1997 Q3	5.79
1997 Q4	10.54
1998 Q1	8.59
1998 Q2	7.18
1998 Q3	-4.99
1998 Q4	6.67
1999 Q1	3.98
1999 Q2	8.88
1999 Q3	3.62
1999 Q4	11.29
2000 Q1	11.26
2000 Q2	-1.50

QUARTER ENDING	HORIZON RETURN
2000 Q3	-2.35
2000 Q4	-4.55
2001 Q1	-5.38
2001 Q2	2.14
2001 Q3	-5.93
2001 Q4	-1.58
2002 Q1	-0.22
2002 Q2	0.37
2002 Q3	-3.73
2002 Q4	1.72
2003 Q1	0.41
2003 Q2	7.27
2003 Q3	4.32
2003 Q4	11.27
2004 Q1	2.43
2004 Q2	4.72
2004 Q3	3.43
2004 Q4	17.33
2005 Q1	0.79
2005 Q2	7.61
2005 Q3	6.66
2005 Q4	9.88
2006 Q1	6.12
2006 Q2	8.85
2006 Q3	3.62
2006 Q4	16.60

QUARTER ENDING	HORIZON RETURN
2007 Q1	4.84
2007 Q2	10.54
2007 Q3	3.03
2007 Q4	3.84
2008 Q1	0.18
2008 Q2	-1.85
2008 Q3	-10.98
2008 Q4	-19.41
2009 Q1	-5.30
2009 Q2	6.58
2009 Q3	7.72
2009 Q4	7.35
2010 Q1	2.40
2010 Q2	0.24
2010 Q3	7.50
2010 Q4	9.02
2011 Q1	5.48
2011 Q2	5.45
2011 Q3	-6.64
2011 Q4	3.11
2012 Q1	6.34
2012 Q2	-0.57
2012 Q3	4.06
2012 Q4	4.34
2013 Q1	3.41
2013 Q2	2.78

QUARTER ENDING	HORIZON RETURN
2013 Q3	5.79
2013 Q4	7.31
2014 Q1	3.11
2014 Q2	4.93
2014 Q3	-0.83
2014 Q4	2.36
2015 Q1	1.12
2015 Q2	5.38
2015 Q3	-0.55
2015 Q4	2.50
2016 Q1	1.92
2016 Q2	2.82
2016 Q3	4.08
2016 Q4	2.86
2017 Q1	4.43
2017 Q2	6.58
2017 Q3	4.90
2017 Q4	5.68
2018 Q1	2.26
2018 Q2	3.77
2018 Q3	3.21
2018 Q4	-1.21
2019 Q1	4.52

AS OF MARCH 31, 2019

BUYOUT

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	10.65	14 Years	12.88
2 Years	15.95	15 Years	13.78
3 Years	15.56	16 Years	14.62
4 Years	13.79	17 Years	13.68
5 Years	12.25	18 Years	12.64
6 Years	14.02	19 Years	11.31
7 Years	13.50	20 Years	12.23
8 Years	12.49	21 Years	12.25
9 Years	14.18	22 Years	12.77
10 Years	15.63	23 Years	13.00
11 Years	9.22	24 Years	13.21
12 Years	9.88	25 Years	13.25
13 Years	11.60		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	10.65	3/31/2006	33.84
3/31/2018	21.00	3/31/2005	28.15
3/31/2017	14.90	3/31/2004	27.57
3/31/2016	9.63	3/31/2003	-1.15
3/31/2015	7.85	3/31/2002	-5.64
3/31/2014	20.26	3/31/2001	-13.33
3/31/2013	11.49	3/31/2000	40.28
3/31/2012	7.90	3/31/1999	13.03
3/31/2011	24.07	3/31/1998	38.00
3/31/2010	26.08	3/31/1997	24.37
3/31/2009	-33.74	3/31/1996	24.63
3/31/2008	17.86	3/31/1995	15.20
3/31/2007	37.88		



The index is a horizon calculation based on data compiled from 1,560 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



CAMBRIDGE
ASSOCIATES

BOUYOUT

AS OF MARCH 31, 2019

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
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	10.27	8.60	9.21	13.00	-0.85	21.37	1.63	0.00	1.63	39
1997	8.84	8.12	8.20	8.18	14.44	0.51	18.71	1.56	0.00	1.56	72
1998	8.34	11.88	11.66	13.64	19.87	5.77	11.41	1.53	0.02	1.55	67
1999	16.47	14.38	12.30	14.18	22.52	5.07	15.13	1.95	0.01	1.96	64
2000	20.90	19.69	18.63	20.49	28.04	10.70	16.01	2.08	0.02	2.10	83
2001	26.40	23.07	20.84	23.55	32.20	11.81	17.14	2.13	0.02	2.15	39
2002	19.34	14.64	18.40	18.11	26.95	8.42	28.21	1.97	0.03	2.00	45
2003	16.36	16.14	14.25	16.18	26.53	4.29	17.51	1.80	0.03	1.83	43
2004	11.15	13.54	9.65	13.47	14.47	7.36	16.30	1.67	0.06	1.73	80
2005	6.52	6.78	7.49	8.04	13.06	2.13	13.99	1.37	0.07	1.44	109
2006	7.79	8.82	9.45	9.36	14.42	4.07	14.46	1.36	0.19	1.55	105
2007	11.49	9.59	10.22	10.06	15.71	4.85	14.15	1.34	0.33	1.68	117
2008	14.13	12.50	12.76	13.59	18.23	8.09	17.55	1.42	0.34	1.76	70
2009	18.74	16.24	17.11	16.51	23.67	8.63	14.04	1.29	0.83	2.12	34
2010	13.20	12.96	13.94	16.02	22.20	-0.52	13.86	0.90	0.72	1.61	28
2011	15.73	14.57	14.10	14.97	19.24	6.52	11.31	0.81	0.84	1.65	65
2012	16.79	15.82	15.84	16.68	19.89	9.70	9.08	0.55	1.06	1.61	59
2013	15.34	15.46	16.28	17.58	20.97	9.10	10.10	0.31	1.10	1.41	55
2014	18.43	16.58	16.58	17.44	23.07	10.70	9.28	0.25	1.13	1.38	61
2015	12.57	6.09	8.27	11.19	19.56	0.65	22.47	0.09	1.10	1.18	61
2016	14.02	10.62	8.83	12.90	20.17	2.36	28.43	0.05	1.11	1.16	46
2017	-5.92	-6.71	-6.28	-0.23	9.08	-12.35	30.69	0.01	0.96	0.97	37

AS OF MARCH 31, 2019

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 INDEX	MSCI EAFE INDEX (NET)		MSCI EUROPE INDEX (NET)		CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)	CA BENCHMARK INDEX	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
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	72	8.84	3.30	554	3.59	525	1.56	1.18	1.20	1.56	1.18	1.20
1998	67	8.34	4.18	416	4.49	385	1.55	1.23	1.25	1.53	1.22	1.24
1999	64	16.47	6.89	958	7.45	902	1.96	1.31	1.34	1.95	1.30	1.33
2000	83	20.90	10.35	1,056	10.82	1,009	2.10	1.39	1.41	2.08	1.38	1.40
2001	39	26.40	11.48	1,492	11.98	1,442	2.15	1.37	1.39	2.13	1.36	1.38
2002	45	19.34	7.90	1,144	8.37	1,098	2.00	1.32	1.34	1.97	1.30	1.32
2003	43	16.36	5.10	1,126	5.52	1,085	1.83	1.22	1.23	1.80	1.20	1.21
2004	80	11.15	2.44	871	2.55	860	1.73	1.13	1.13	1.67	1.09	1.09
2005	109	6.52	1.62	490	1.48	503	1.44	1.10	1.09	1.37	1.04	1.03
2006	105	7.79	2.24	555	2.05	574	1.55	1.13	1.12	1.36	1.01	1.00
2007	117	11.49	4.76	673	4.64	685	1.68	1.23	1.22	1.34	1.02	1.02
2008	70	14.13	6.11	802	6.08	805	1.76	1.26	1.26	1.42	1.06	1.06
2009	34	18.74	5.66	1,309	5.33	1,341	2.12	1.24	1.23	1.29	0.85	0.85
2010	28	13.20	5.50	770	5.12	807	1.61	1.22	1.20	0.90	0.71	0.71
2011	65	15.73	4.88	1,085	4.29	1,144	1.65	1.17	1.14	0.81	0.61	0.60
2012	59	16.79	4.14	1,265	3.38	1,341	1.61	1.13	1.10	0.55	0.42	0.41
2013	55	15.34	4.17	1,116	3.45	1,188	1.41	1.10	1.08	0.31	0.26	0.25
2014	61	18.43	4.36	1,407	3.79	1,464	1.38	1.08	1.07	0.25	0.21	0.20
2015	61	12.57	4.02	855	3.70	886	1.18	1.06	1.05	0.09	0.08	0.08
2016	46	14.02	2.57	1,145	2.32	1,171	1.16	1.03	1.03	0.05	0.05	0.05
2017	37	-5.92	1.39	-730	1.90	-781	0.97	1.01	1.01	0.01	0.01	0.01

Notes: Based on data compiled from 1,439 buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI Inc., and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

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 INDEX	S&P 500 INDEX		RUSSELL 2000® INDEX		CA BENCHMARK INDEX	S&P 500 INDEX	RUSSELL 2000® INDEX	CA BENCHMARK INDEX	S&P 500 INDEX	RUSSELL 2000® INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD	TVPI	MPME TVPI	MPME TVPI	DPI	MPME DPI
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	72	8.84	1.68	716	7.13	171	1.56	1.09	1.42	1.56	1.09	1.42
1998	67	8.34	2.05	629	7.48	86	1.55	1.11	1.45	1.53	1.09	1.43
1999	64	16.47	3.20	1,327	8.51	796	1.96	1.14	1.39	1.95	1.13	1.38
2000	83	20.90	5.99	1,491	10.19	1,071	2.10	1.23	1.40	2.08	1.22	1.39
2001	39	26.40	7.65	1,875	10.47	1,593	2.15	1.29	1.39	2.13	1.28	1.38
2002	45	19.34	6.83	1,252	8.22	1,113	2.00	1.33	1.40	1.97	1.30	1.37
2003	43	16.36	6.09	1,027	6.61	975	1.83	1.31	1.34	1.80	1.28	1.31
2004	80	11.15	5.89	526	6.19	496	1.73	1.37	1.39	1.67	1.30	1.32
2005	109	6.52	7.09	-57	7.28	-76	1.44	1.52	1.53	1.37	1.41	1.43
2006	105	7.79	8.50	-72	8.53	-74	1.55	1.63	1.61	1.36	1.41	1.42
2007	117	11.49	12.15	-66	11.52	-3	1.68	1.72	1.65	1.34	1.38	1.35
2008	70	14.13	13.92	21	13.02	111	1.76	1.73	1.65	1.42	1.40	1.36
2009	34	18.74	13.55	520	11.71	703	2.12	1.69	1.57	1.29	1.11	1.05
2010	28	13.20	13.32	-12	11.12	208	1.61	1.61	1.49	0.90	0.89	0.85
2011	65	15.73	12.51	322	10.15	558	1.65	1.48	1.37	0.81	0.74	0.71
2012	59	16.79	11.82	497	9.17	762	1.61	1.40	1.30	0.55	0.50	0.48
2013	55	15.34	11.65	369	8.59	674	1.41	1.30	1.21	0.31	0.29	0.28
2014	61	18.43	11.94	648	8.38	1,005	1.38	1.23	1.16	0.25	0.23	0.22
2015	61	12.57	12.07	50	7.44	513	1.18	1.18	1.11	0.09	0.09	0.09
2016	46	14.02	11.32	270	5.23	880	1.16	1.13	1.06	0.05	0.05	0.05
2017	37	-5.92	12.00	-1,792	3.22	-914	0.97	1.06	1.02	0.01	0.01	0.01

Notes: Based on data compiled from 1,439 buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, Standard & Poor's, and Thomson Reuters Datastream.

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 INDEX	RUSSELL 3000® INDEX		MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	RUSSELL 3000® INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)	CA BENCHMARK INDEX	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
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	72	8.84	2.47	636	2.85	599	1.56	1.13	1.15	1.56	1.13	1.15
1998	67	8.34	2.81	553	3.56	478	1.55	1.16	1.20	1.53	1.14	1.19
1999	64	16.47	3.98	1,249	5.66	1,081	1.96	1.17	1.25	1.95	1.17	1.25
2000	83	20.90	6.70	1,420	8.94	1,196	2.10	1.26	1.35	2.08	1.25	1.34
2001	39	26.40	8.27	1,812	10.36	1,604	2.15	1.31	1.37	2.13	1.30	1.36
2002	45	19.34	7.26	1,208	8.17	1,118	2.00	1.35	1.36	1.97	1.32	1.34
2003	43	16.36	6.38	998	6.38	998	1.83	1.33	1.30	1.80	1.29	1.27
2004	80	11.15	6.10	505	4.79	636	1.73	1.39	1.28	1.67	1.31	1.22
2005	109	6.52	7.27	-75	4.60	192	1.44	1.53	1.30	1.37	1.43	1.23
2006	105	7.79	8.64	-86	5.39	239	1.55	1.64	1.35	1.36	1.42	1.19
2007	117	11.49	12.18	-69	8.14	334	1.68	1.72	1.43	1.34	1.38	1.17
2008	70	14.13	13.92	21	9.60	453	1.76	1.72	1.45	1.42	1.40	1.20
2009	34	18.74	13.35	539	9.31	943	2.12	1.67	1.43	1.29	1.10	0.96
2010	28	13.20	13.06	14	9.20	400	1.61	1.60	1.39	0.90	0.89	0.79
2011	65	15.73	12.20	353	8.78	695	1.65	1.47	1.32	0.81	0.74	0.67
2012	59	16.79	11.45	534	8.32	847	1.61	1.39	1.27	0.55	0.49	0.46
2013	55	15.34	11.26	408	8.51	683	1.41	1.28	1.21	0.31	0.29	0.28
2014	61	18.43	11.54	688	8.86	956	1.38	1.22	1.17	0.25	0.22	0.22
2015	61	12.57	11.64	93	8.86	371	1.18	1.17	1.13	0.09	0.09	0.09
2016	46	14.02	10.79	324	7.76	626	1.16	1.12	1.09	0.05	0.05	0.05
2017	37	-5.92	11.33	-1,725	7.72	-1,363	0.97	1.06	1.04	0.01	0.01	0.01

Notes: Based on data compiled from 1,439 buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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., and Thomson Reuters Datastream.

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BUYOUT

AS OF MARCH 31, 2019

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
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	1.56	1.45	1.48	1.90	1.00	72
1998	1.55	1.97	1.62	2.20	1.38	67
1999	1.96	1.82	1.61	2.23	1.27	64
2000	2.10	2.13	2.05	2.62	1.61	83
2001	2.15	2.08	1.97	2.50	1.62	39
2002	2.00	1.95	1.96	2.39	1.50	45
2003	1.83	1.80	1.80	2.14	1.24	43
2004	1.73	1.78	1.64	1.96	1.37	80
2005	1.44	1.51	1.49	1.80	1.12	109
2006	1.55	1.61	1.60	2.02	1.22	105
2007	1.68	1.59	1.61	1.92	1.32	117
2008	1.76	1.72	1.71	2.00	1.36	70
2009	2.12	1.92	2.02	2.41	1.46	34
2010	1.61	1.80	1.63	2.11	0.97	28
2011	1.65	1.62	1.58	1.79	1.31	65
2012	1.61	1.61	1.58	1.78	1.34	59
2013	1.41	1.50	1.44	1.64	1.25	55
2014	1.38	1.37	1.30	1.48	1.22	61
2015	1.18	1.13	1.10	1.34	1.01	61
2016	1.16	1.11	1.10	1.21	1.02	46
2017	0.97	0.95	0.95	1.08	0.90	37

BUYOUT

AS OF MARCH 31, 2019

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
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	1.56	1.45	1.48	1.90	0.99	72
1998	1.53	1.96	1.61	2.20	1.38	67
1999	1.95	1.81	1.60	2.23	1.27	64
2000	2.08	2.06	2.00	2.57	1.61	83
2001	2.13	2.06	1.97	2.48	1.60	39
2002	1.97	1.91	1.95	2.39	1.36	45
2003	1.80	1.75	1.72	2.11	1.18	43
2004	1.67	1.69	1.52	1.91	1.31	80
2005	1.37	1.42	1.37	1.72	1.00	109
2006	1.36	1.42	1.43	1.80	1.04	105
2007	1.34	1.32	1.34	1.70	0.92	117
2008	1.42	1.36	1.34	1.63	1.03	70
2009	1.29	1.31	1.29	1.94	0.58	34
2010	0.90	1.01	0.86	1.33	0.30	28
2011	0.81	0.81	0.79	1.08	0.35	65
2012	0.55	0.66	0.56	0.83	0.32	59
2013	0.31	0.43	0.31	0.54	0.11	55
2014	0.25	0.26	0.16	0.38	0.05	61
2015	0.09	0.11	0.03	0.13	0.00	61
2016	0.05	0.05	0.00	0.03	0.00	46
2017	0.01	0.03	0.00	0.00	0.00	37

BUYOUT

AS OF MARCH 31, 2019

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
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	72
1998	0.02	0.01	0.00	0.00	0.00	67
1999	0.01	0.01	0.00	0.00	0.00	64
2000	0.02	0.07	0.00	0.01	0.00	83
2001	0.02	0.02	0.00	0.00	0.00	39
2002	0.03	0.04	0.00	0.03	0.00	45
2003	0.03	0.05	0.00	0.02	0.00	43
2004	0.06	0.09	0.03	0.09	0.00	80
2005	0.07	0.08	0.02	0.11	0.00	109
2006	0.19	0.19	0.12	0.28	0.02	105
2007	0.33	0.27	0.20	0.37	0.06	117
2008	0.34	0.37	0.30	0.54	0.12	70
2009	0.83	0.61	0.51	0.89	0.27	34
2010	0.72	0.79	0.75	0.85	0.54	28
2011	0.84	0.82	0.77	1.04	0.55	65
2012	1.06	0.95	0.98	1.13	0.81	59
2013	1.10	1.07	1.04	1.20	0.93	55
2014	1.13	1.11	1.12	1.26	1.01	61
2015	1.10	1.02	1.03	1.14	0.93	61
2016	1.11	1.07	1.06	1.17	1.01	46
2017	0.96	0.92	0.95	1.05	0.88	37

US BUYOUT: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

AS OF MARCH 31, 2019

US BUYOUT

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
US BUYOUT INDEX¹	5.23	13.59	16.22	13.78	16.84	13.93	11.77	13.11
US BUYOUT SMALL CAP INDEX¹	2.91	8.63	13.41	13.28	16.35	16.45	13.22	13.26
US BUYOUT MID CAP INDEX¹	4.94	13.04	15.04	13.85	14.45	14.93	12.22	14.90
US BUYOUT LARGE CAP INDEX¹	4.23	13.38	16.70	13.44	16.24	14.76	11.95	15.36
US BUYOUT MEGA CAP INDEX¹	5.83	14.11	16.51	13.92	17.75	13.20	11.46	—
Bloomberg Barclays Capital Government/Credit Bond Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36
Dow Jones Industrial Average Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones US Small Cap Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US TopCap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Nasdaq Composite Index*	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Russell 1000® Index	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 2000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
S&P 500 Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
Wilshire 5000 Total Market Index	14.11	8.93	13.59	10.52	15.99	8.77	6.56	9.77

The index is a horizon calculation based on data compiled from 866 US buyout funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, Standard & Poor's and Thomson Reuters Datastream, and Wilshire Associates.

*Capital change only

US BUYOUT

AS OF MARCH 31, 2019

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
US BUYOUT INDEX¹	13.59	16.22	13.78	16.84	13.93	11.77	13.11
MPME ANALYSIS²							
Russell 2000® Index	2.21	13.59	6.87	17.22	8.48	8.70	8.83
Value-Add (bps)	1,138	263	691	-38	546	307	428
Russell 2500™ Index	4.59	13.02	7.59	18.31	9.28	9.72	10.01
Value-Add (bps)	900	319	619	-147	465	205	310
Russell 3000® Index	8.81	13.71	10.26	17.06	8.91	7.40	8.69
Value-Add (bps)	478	250	352	-22	503	437	442
Russell Midcap® Index	6.49	12.08	8.75	18.93	9.89	9.60	10.36
Value-Add (bps)	710	414	503	-209	405	217	275
S&P 500 Index	9.53	13.69	10.84	16.81	8.79	7.11	8.57
Value-Add (bps)	406	253	294	3	514	466	454
Constructed Index: MSCI World/MSCI All Country World Index ³ (gross)	3.21	11.46	6.91	13.32	7.02	5.94	6.56
Value-Add (bps)	1,038	476	687	352	692	583	655

The index is a horizon calculation based on data compiled from 866 US buyout funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ Constructed Index: MSCI World/MSCI All Country World Index: Data rom 1/1/1986 to 12/31/1987 represented by MSCI 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. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

US BUYOUT

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	0.87
1994 Q2	3.41
1994 Q3	1.43
1994 Q4	6.77
1995 Q1	3.11
1995 Q2	3.60
1995 Q3	3.82
1995 Q4	11.10
1996 Q1	5.80
1996 Q2	6.18
1996 Q3	6.57
1996 Q4	7.02
1997 Q1	0.98
1997 Q2	9.15
1997 Q3	6.32
1997 Q4	10.68
1998 Q1	9.91
1998 Q2	6.12
1998 Q3	-6.85
1998 Q4	8.24
1999 Q1	5.22
1999 Q2	9.56
1999 Q3	2.54
1999 Q4	11.58
2000 Q1	13.52
2000 Q2	-2.69

QUARTER ENDING	HORIZON RETURN
2000 Q3	-2.36
2000 Q4	-6.86
2001 Q1	-5.28
2001 Q2	3.02
2001 Q3	-8.31
2001 Q4	-0.59
2002 Q1	-0.04
2002 Q2	-2.57
2002 Q3	-4.47
2002 Q4	-0.05
2003 Q1	0.12
2003 Q2	7.19
2003 Q3	5.47
2003 Q4	9.79
2004 Q1	2.99
2004 Q2	3.76
2004 Q3	2.51
2004 Q4	15.84
2005 Q1	0.73
2005 Q2	8.36
2005 Q3	7.32
2005 Q4	8.79
2006 Q1	5.41
2006 Q2	4.09
2006 Q3	3.63
2006 Q4	13.26

QUARTER ENDING	HORIZON RETURN
2007 Q1	5.54
2007 Q2	7.64
2007 Q3	0.66
2007 Q4	2.58
2008 Q1	-2.50
2008 Q2	-0.26
2008 Q3	-7.25
2008 Q4	-17.24
2009 Q1	-3.72
2009 Q2	4.62
2009 Q3	6.67
2009 Q4	6.67
2010 Q1	4.98
2010 Q2	2.26
2010 Q3	4.90
2010 Q4	9.09
2011 Q1	5.45
2011 Q2	4.69
2011 Q3	-4.66
2011 Q4	4.77
2012 Q1	5.53
2012 Q2	0.33
2012 Q3	4.09
2012 Q4	3.94
2013 Q1	5.16
2013 Q2	3.49

QUARTER ENDING	HORIZON RETURN
2013 Q3	5.31
2013 Q4	7.43
2014 Q1	3.32
2014 Q2	4.92
2014 Q3	1.69
2014 Q4	3.66
2015 Q1	3.47
2015 Q2	4.43
2015 Q3	0.00
2015 Q4	2.02
2016 Q1	0.47
2016 Q2	3.80
2016 Q3	3.69
2016 Q4	4.11
2017 Q1	4.17
2017 Q2	4.65
2017 Q3	4.11
2017 Q4	5.65
2018 Q1	2.56
2018 Q2	5.21
2018 Q3	3.81
2018 Q4	-1.22
2019 Q1	5.23

AS OF MARCH 31, 2019

US BUYOUT

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	13.59	14 Years	13.25
2 Years	15.93	15 Years	13.93
3 Years	16.22	16 Years	14.85
4 Years	13.55	17 Years	13.42
5 Years	13.78	18 Years	12.27
6 Years	15.39	19 Years	10.66
7 Years	15.07	20 Years	11.77
8 Years	14.19	21 Years	11.80
9 Years	15.62	22 Years	12.50
10 Years	16.84	23 Years	12.74
11 Years	11.04	24 Years	13.06
12 Years	10.75	25 Years	13.11
13 Years	11.97		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	13.59	3/31/2006	33.40
3/31/2018	18.12	3/31/2005	24.13
3/31/2017	16.72	3/31/2004	27.89
3/31/2016	7.20	3/31/2003	-6.58
3/31/2015	14.47	3/31/2002	-6.12
3/31/2014	20.95	3/31/2001	-16.34
3/31/2013	13.90	3/31/2000	43.00
3/31/2012	10.33	3/31/1999	12.80
3/31/2011	23.46	3/31/1998	41.28
3/31/2010	24.99	3/31/1997	22.52
3/31/2009	-26.65	3/31/1996	26.40
3/31/2008	7.67	3/31/1995	15.49
3/31/2007	28.99		

US BUYOUT: FUND SINCE INCEPTION ANALYSIS



CAMBRIDGE
ASSOCIATES

AS OF MARCH 31, 2019

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
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	8.64	7.94	8.38	11.80	0.64	20.04	1.60	0.00	1.60	23
1997	6.78	5.96	6.78	5.12	12.38	-1.25	14.92	1.43	0.00	1.43	40
1998	6.50	10.14	9.65	10.39	14.68	5.13	10.50	1.40	0.02	1.42	39
1999	16.08	12.01	12.05	12.37	19.16	7.40	11.78	1.96	0.01	1.97	36
2000	16.79	15.64	14.09	15.45	22.57	9.90	11.42	1.88	0.02	1.90	51
2001	23.06	20.23	18.24	19.19	31.68	11.38	16.26	2.18	0.04	2.22	19
2002	16.84	12.45	17.57	15.69	25.85	5.34	27.92	1.88	0.04	1.92	22
2003	14.61	12.31	11.62	12.29	15.93	3.09	10.97	1.93	0.05	1.98	24
2004	10.55	10.52	9.91	10.48	13.10	7.70	7.09	1.68	0.05	1.73	49
2005	7.84	6.86	7.99	9.13	13.89	3.24	15.09	1.50	0.09	1.59	54
2006	9.40	12.92	12.97	12.48	17.33	7.74	15.08	1.49	0.22	1.72	51
2007	12.80	12.62	13.26	12.32	18.15	7.96	11.13	1.32	0.41	1.73	58
2008	15.95	17.80	15.64	16.99	22.78	11.47	10.82	1.48	0.37	1.84	40
2009	22.06	21.02	21.82	21.46	26.22	12.60	13.52	1.44	0.94	2.38	19
2010	22.20	21.45	16.78	24.12	25.33	14.68	10.52	1.43	0.81	2.24	11
2011	17.15	16.99	15.65	17.20	20.84	12.64	10.74	0.84	0.85	1.68	37
2012	18.64	19.00	16.83	20.53	25.47	13.02	9.70	0.46	1.14	1.60	28
2013	14.92	15.67	16.28	17.31	21.30	11.00	9.33	0.29	1.14	1.43	33
2014	19.66	18.15	18.20	18.83	25.20	10.58	9.69	0.29	1.12	1.41	35
2015	13.08	9.10	8.27	12.27	19.59	1.76	17.87	0.07	1.11	1.19	39
2016	15.11	15.39	8.83	16.16	14.13	2.51	29.92	0.07	1.10	1.18	22
2017	-3.73	-1.80	0.01	5.29	10.88	-9.70	28.16	0.01	0.97	0.98	23

AS OF MARCH 31, 2019

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 INDEX	RUSSELL 2000® INDEX			RUSSELL 2500™ INDEX		CA BENCHMARK INDEX	RUSSELL 2000® INDEX	RUSSELL 2500™ INDEX	CA BENCHMARK INDEX	RUSSELL 2000® INDEX	RUSSELL 2500™ INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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	6.78	7.28	-50	9.04	-226	1.43	1.45	1.58	1.43	1.45	1.58	
1998	39	6.50	7.60	-110	9.09	-258	1.42	1.48	1.60	1.40	1.45	1.56	
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	9.73	706	10.61	618	1.90	1.42	1.47	1.88	1.40	1.45	
2001	19	23.06	8.78	1,429	9.63	1,343	2.22	1.40	1.45	2.18	1.38	1.43	
2002	22	16.84	8.02	882	8.94	791	1.92	1.42	1.48	1.88	1.37	1.43	
2003	24	14.61	6.24	836	7.08	753	1.98	1.37	1.43	1.93	1.33	1.38	
2004	49	10.55	6.09	447	6.93	362	1.73	1.40	1.46	1.68	1.34	1.40	
2005	54	7.84	7.62	22	8.46	-62	1.59	1.58	1.66	1.50	1.47	1.54	
2006	51	9.40	8.08	132	8.81	58	1.72	1.59	1.65	1.49	1.39	1.45	
2007	58	12.80	11.61	119	12.37	44	1.73	1.63	1.68	1.32	1.26	1.29	
2008	40	15.95	13.01	294	13.75	220	1.84	1.61	1.65	1.48	1.33	1.36	
2009	19	22.06	11.83	1,023	12.35	971	2.38	1.55	1.58	1.44	1.06	1.07	
2010	11	22.20	11.52	1,068	11.91	1,029	2.24	1.51	1.53	1.43	1.03	1.03	
2011	37	17.15	10.18	697	10.58	657	1.68	1.36	1.37	0.84	0.72	0.72	
2012	28	18.64	8.74	990	9.22	942	1.60	1.25	1.26	0.46	0.39	0.39	
2013	33	14.92	8.52	639	9.07	585	1.43	1.23	1.24	0.29	0.28	0.27	
2014	35	19.66	8.17	1,148	9.05	1,060	1.41	1.15	1.17	0.29	0.25	0.25	
2015	39	13.08	7.48	560	8.98	410	1.19	1.10	1.13	0.07	0.07	0.07	
2016	22	15.11	5.51	959	7.60	750	1.18	1.06	1.09	0.07	0.07	0.07	
2017	23	-3.73	2.48	-621	6.49	-1,022	0.98	1.01	1.04	0.01	0.01	0.01	

Notes: Based on data compiled from 786 US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, and Thomson Reuters Datastream.

AS OF MARCH 31, 2019

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 INDEX	RUSSELL 3000® INDEX			RUSSELL MIDCAP® INDEX		CA BENCHMARK INDEX	RUSSELL 3000® INDEX	RUSSELL MIDCAP® INDEX	CA BENCHMARK INDEX	RUSSELL 3000® INDEX	RUSSELL MIDCAP® INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
1994	11	7.50	7.46	4	10.38	-288	1.51	1.45	1.76	1.51	1.45	1.75	
1995	22	13.54	10.31	323	11.36	218	1.66	1.43	1.55	1.66	1.43	1.55	
1996	23	10.25	4.91	533	9.07	118	1.60	1.25	1.55	1.60	1.25	1.55	
1997	40	6.78	2.46	432	8.52	-173	1.43	1.14	1.55	1.43	1.13	1.54	
1998	39	6.50	3.13	337	8.67	-216	1.42	1.19	1.58	1.40	1.16	1.54	
1999	36	16.08	4.02	1,206	9.54	654	1.97	1.18	1.46	1.96	1.17	1.45	
2000	51	16.79	6.58	1,021	10.84	595	1.90	1.29	1.49	1.88	1.27	1.47	
2001	19	23.06	7.56	1,550	10.24	1,282	2.22	1.35	1.48	2.18	1.33	1.46	
2002	22	16.84	7.16	968	9.59	726	1.92	1.38	1.51	1.88	1.33	1.46	
2003	24	14.61	5.87	874	7.47	713	1.98	1.35	1.46	1.93	1.30	1.41	
2004	49	10.55	5.96	459	7.19	337	1.73	1.39	1.48	1.68	1.33	1.42	
2005	54	7.84	7.67	17	8.67	-83	1.59	1.59	1.69	1.50	1.47	1.56	
2006	51	9.40	8.19	121	8.94	46	1.72	1.61	1.67	1.49	1.39	1.46	
2007	58	12.80	12.33	48	12.76	4	1.73	1.69	1.71	1.32	1.29	1.31	
2008	40	15.95	13.87	208	14.23	172	1.84	1.68	1.68	1.48	1.36	1.38	
2009	19	22.06	13.43	863	12.90	916	2.38	1.66	1.62	1.44	1.10	1.09	
2010	11	22.20	13.23	897	12.41	979	2.24	1.61	1.56	1.43	1.07	1.05	
2011	37	17.15	12.23	492	11.10	605	1.68	1.44	1.39	0.84	0.74	0.72	
2012	28	18.64	11.24	741	9.61	903	1.60	1.33	1.28	0.46	0.40	0.39	
2013	33	14.92	11.15	376	9.42	550	1.43	1.31	1.25	0.29	0.28	0.27	
2014	35	19.66	11.37	828	9.62	1,004	1.41	1.22	1.18	0.29	0.26	0.25	
2015	39	13.08	11.64	144	10.06	302	1.19	1.17	1.14	0.07	0.07	0.07	
2016	22	15.11	10.91	420	9.33	577	1.18	1.13	1.11	0.07	0.07	0.07	
2017	23	-3.73	10.60	-1,432	10.71	-1,444	0.98	1.06	1.06	0.01	0.01	0.01	

Notes: Based on data compiled from 786 US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, and Thomson Reuters Datastream.

AS OF MARCH 31, 2019

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 INDEX	S&P 500 INDEX		MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	S&P 500 INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)	CA BENCHMARK INDEX	S&P 500 INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD	TVPI	MPME TVPI	MPME TVPI	DPI	MPME DPI
1994	11	7.50	7.46	4	5.50	200	1.51	1.44	1.34	1.51	1.44	1.34
1995	22	13.54	10.77	276	6.88	666	1.66	1.44	1.29	1.66	1.44	1.29
1996	23	10.25	4.50	574	4.13	611	1.60	1.23	1.22	1.60	1.23	1.22
1997	40	6.78	1.64	515	3.09	370	1.43	1.09	1.18	1.43	1.09	1.17
1998	39	6.50	2.39	411	3.82	269	1.42	1.14	1.23	1.40	1.12	1.21
1999	36	16.08	3.25	1,283	5.82	1,025	1.97	1.14	1.27	1.96	1.14	1.26
2000	51	16.79	5.93	1,086	8.49	830	1.90	1.26	1.36	1.88	1.24	1.35
2001	19	23.06	7.11	1,596	8.60	1,446	2.22	1.33	1.36	2.18	1.31	1.35
2002	22	16.84	6.74	1,010	7.96	889	1.92	1.35	1.38	1.88	1.30	1.34
2003	24	14.61	5.57	904	5.63	897	1.98	1.33	1.31	1.93	1.28	1.27
2004	49	10.55	5.74	481	4.59	597	1.73	1.38	1.28	1.68	1.31	1.23
2005	54	7.84	7.50	35	4.85	300	1.59	1.58	1.34	1.50	1.46	1.25
2006	51	9.40	8.05	135	5.05	435	1.72	1.60	1.33	1.49	1.38	1.17
2007	58	12.80	12.30	50	8.33	447	1.73	1.69	1.42	1.32	1.28	1.10
2008	40	15.95	13.87	208	9.62	633	1.84	1.68	1.43	1.48	1.36	1.18
2009	19	22.06	13.62	844	9.40	1,266	2.38	1.67	1.43	1.44	1.11	0.97
2010	11	22.20	13.48	871	9.42	1,278	2.24	1.63	1.41	1.43	1.08	0.95
2011	37	17.15	12.54	460	8.83	832	1.68	1.46	1.31	0.84	0.75	0.68
2012	28	18.64	11.63	702	8.33	1,032	1.60	1.34	1.24	0.46	0.40	0.38
2013	33	14.92	11.55	336	8.43	649	1.43	1.32	1.22	0.29	0.28	0.27
2014	35	19.66	11.80	786	8.64	1,102	1.41	1.23	1.16	0.29	0.26	0.25
2015	39	13.08	12.06	102	8.80	427	1.19	1.17	1.12	0.07	0.08	0.07
2016	22	15.11	11.44	367	8.06	705	1.18	1.13	1.09	0.07	0.07	0.07
2017	23	-3.73	11.29	-1,502	6.93	-1,066	0.98	1.06	1.04	0.01	0.01	0.01

Notes: Based on data compiled from 786 US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. 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

AS OF MARCH 31, 2019

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
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	1.67	1.60	2.04	1.33	39
1999	1.97	1.73	1.54	2.22	1.29	36
2000	1.90	1.94	1.92	2.27	1.48	51
2001	2.22	1.92	1.78	2.22	1.52	19
2002	1.92	1.87	1.92	2.40	1.39	22
2003	1.98	1.74	1.80	2.06	1.22	24
2004	1.73	1.70	1.64	1.90	1.46	49
2005	1.59	1.63	1.59	1.94	1.27	54
2006	1.72	1.87	1.80	2.16	1.57	51
2007	1.73	1.74	1.76	2.10	1.45	58
2008	1.84	1.92	1.80	2.07	1.63	40
2009	2.38	2.17	2.39	2.59	1.82	19
2010	2.24	2.50	2.03	2.37	1.68	11
2011	1.68	1.70	1.63	1.90	1.44	37
2012	1.60	1.71	1.57	1.84	1.38	28
2013	1.43	1.49	1.46	1.61	1.30	33
2014	1.41	1.42	1.39	1.50	1.22	35
2015	1.19	1.17	1.10	1.32	1.03	39
2016	1.18	1.14	1.10	1.20	1.02	22
2017	0.98	0.99	1.00	1.08	0.94	23

US BUYOUT

AS OF MARCH 31, 2019

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
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	1.40	1.65	1.49	1.97	1.32	39
1999	1.96	1.72	1.54	2.11	1.28	36
2000	1.88	1.83	1.88	2.21	1.48	51
2001	2.18	1.89	1.78	2.18	1.49	19
2002	1.88	1.81	1.92	2.40	1.30	22
2003	1.93	1.66	1.73	2.05	1.16	24
2004	1.68	1.62	1.53	1.82	1.37	49
2005	1.50	1.53	1.44	1.81	1.02	54
2006	1.49	1.63	1.59	1.95	1.33	51
2007	1.32	1.42	1.39	1.80	1.05	58
2008	1.48	1.49	1.45	1.71	1.22	40
2009	1.44	1.50	1.89	2.11	0.82	19
2010	1.43	1.52	1.25	1.53	0.86	11
2011	0.84	0.86	0.84	1.13	0.48	37
2012	0.46	0.76	0.54	0.99	0.39	28
2013	0.29	0.37	0.32	0.48	0.10	33
2014	0.29	0.29	0.22	0.41	0.08	35
2015	0.07	0.09	0.02	0.15	0.00	39
2016	0.07	0.06	0.00	0.01	0.00	22
2017	0.01	0.05	0.00	0.00	0.00	23



Notes: Based on data compiled from 786 US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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

AS OF MARCH 31, 2019

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
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	0.02	0.02	0.00	0.00	0.00	39
1999	0.01	0.01	0.00	0.00	0.00	36
2000	0.02	0.11	0.00	0.01	0.00	51
2001	0.04	0.03	0.00	0.03	0.00	19
2002	0.04	0.06	0.01	0.09	0.00	22
2003	0.05	0.08	0.01	0.03	0.00	24
2004	0.05	0.08	0.03	0.11	0.00	49
2005	0.09	0.10	0.03	0.12	0.01	54
2006	0.22	0.24	0.18	0.38	0.07	51
2007	0.41	0.32	0.27	0.52	0.08	58
2008	0.37	0.43	0.34	0.57	0.20	40
2009	0.94	0.67	0.63	0.90	0.35	19
2010	0.81	0.98	0.81	1.14	0.70	11
2011	0.85	0.84	0.77	1.04	0.56	37
2012	1.14	0.95	1.01	1.15	0.80	28
2013	1.14	1.12	1.13	1.27	0.97	33
2014	1.12	1.12	1.14	1.28	1.02	35
2015	1.11	1.08	1.05	1.23	0.96	39
2016	1.10	1.08	1.06	1.11	1.02	22
2017	0.97	0.94	0.96	1.08	0.92	23



Notes: Based on data compiled from 786 US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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



CAMBRIDGE
ASSOCIATES

EX US BUYOUT

AS OF MARCH 31, 2019

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
EX US BUYOUT INDEX¹	3.34	5.99	14.50	10.01	13.80	13.51	13.24	13.55
Bloomberg Barclays Capital Government/Credit Bond Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones Industrial Average Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US Small Cap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Dow Jones US TopCap Index	9.95	-7.06	11.09	4.06	9.31	8.28	8.73	5.76
MSCI Emerging Markets Index (gross)	10.84	-3.72	6.56	1.04	8.95	5.24	3.86	6.72
MSCI Europe Index (US\$) (net)	12.84	5.45	7.08	5.27	10.79	5.88	3.66	6.92
MSCI Europe Index (€) (net)	8.53	-3.86	8.82	4.96	9.12	4.83	4.15	2.55
MSCI Pacific Index (net)	10.45	-3.14	7.29	2.20	8.82	5.18	4.11	5.05
MSCI World Ex US Index (net)	12.48	4.01	10.68	6.78	12.38	6.82	4.82	7.03
MSCI World Index (net)	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Nasdaq Composite Index*	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 1000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
Russell 2000® Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
S&P 500 Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36

The index is a horizon calculation based on data compiled from 694 Ex US buyout funds, including fully liquidated partnerships, formed between 1987 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets Indices are gross of dividend taxes. Total Returns for MSCI Developed Markets Indices are net of dividend taxes.

EX US BUYOUT

AS OF MARCH 31, 2019

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
EX US BUYOUT INDEX¹	5.99	14.50	10.01	13.80	13.51	13.24	13.55

MPME ANALYSIS ²							
MSCI EAFE Index (net)	-3.50	7.57	1.93	8.84	4.38	4.28	4.39
Value-Add (bps)	949	693	808	495	913	896	916
MSCI Europe Index (net)	-3.48	6.81	0.53	8.89	4.37	4.20	4.50
Value-Add (bps)	946	769	948	490	914	904	905
S&P 500 Index	9.66	13.80	10.70	16.39	9.39	8.42	8.95
Value-Add (bps)	-367	70	-69	-260	411	482	460
Constructed Index: Global Financial Data Emerging Markets/MSCI Emerging Markets (gross) ³	-6.96	11.57	3.63	9.25	6.78	7.61	7.24
Value-Add (bps)	1,295	293	638	455	673	563	631
Constructed Index: MSCI World/MSCI All Country World Index ⁴ (gross)	3.31	11.63	6.64	12.66	7.13	6.61	6.86
Value-Add (bps)	268	287	337	114	637	663	669

The index is a horizon calculation based on data compiled from 694 Ex US buyout funds, including fully liquidated partnerships, formed between 1987 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ 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.

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

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

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EX US BUYOUT

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
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	9.83
1998 Q1	2.36
1998 Q2	12.24
1998 Q3	3.11
1998 Q4	0.96
1999 Q1	-0.53
1999 Q2	6.32
1999 Q3	7.83
1999 Q4	10.28
2000 Q1	3.63
2000 Q2	2.91

QUARTER ENDING	HORIZON RETURN
2000 Q3	-2.32
2000 Q4	3.32
2001 Q1	-5.71
2001 Q2	-0.55
2001 Q3	1.52
2001 Q4	-4.36
2002 Q1	-0.73
2002 Q2	8.79
2002 Q3	-1.85
2002 Q4	6.08
2003 Q1	1.09
2003 Q2	7.43
2003 Q3	1.82
2003 Q4	14.50
2004 Q1	1.28
2004 Q2	6.67
2004 Q3	5.25
2004 Q4	20.11
2005 Q1	0.90
2005 Q2	6.29
2005 Q3	5.47
2005 Q4	11.92
2006 Q1	7.43
2006 Q2	17.68
2006 Q3	3.59
2006 Q4	22.15

QUARTER ENDING	HORIZON RETURN
2007 Q1	3.75
2007 Q2	15.19
2007 Q3	6.72
2007 Q4	5.75
2008 Q1	4.15
2008 Q2	-4.03
2008 Q3	-16.12
2008 Q4	-22.66
2009 Q1	-7.83
2009 Q2	9.79
2009 Q3	9.33
2009 Q4	8.36
2010 Q1	-1.29
2010 Q2	-2.84
2010 Q3	11.69
2010 Q4	8.92
2011 Q1	5.53
2011 Q2	6.52
2011 Q3	-9.36
2011 Q4	0.66
2012 Q1	7.60
2012 Q2	-1.90
2012 Q3	4.02
2012 Q4	4.92
2013 Q1	0.99
2013 Q2	1.77

QUARTER ENDING	HORIZON RETURN
2013 Q3	6.47
2013 Q4	7.14
2014 Q1	2.82
2014 Q2	4.94
2014 Q3	-4.21
2014 Q4	0.52
2015 Q1	-2.30
2015 Q2	6.85
2015 Q3	-1.37
2015 Q4	3.25
2016 Q1	4.22
2016 Q2	1.31
2016 Q3	4.70
2016 Q4	0.84
2017 Q1	4.86
2017 Q2	9.79
2017 Q3	6.15
2017 Q4	5.74
2018 Q1	1.80
2018 Q2	1.52
2018 Q3	2.21
2018 Q4	-1.18
2019 Q1	3.34

AS OF MARCH 31, 2019

EX US BUYOUT

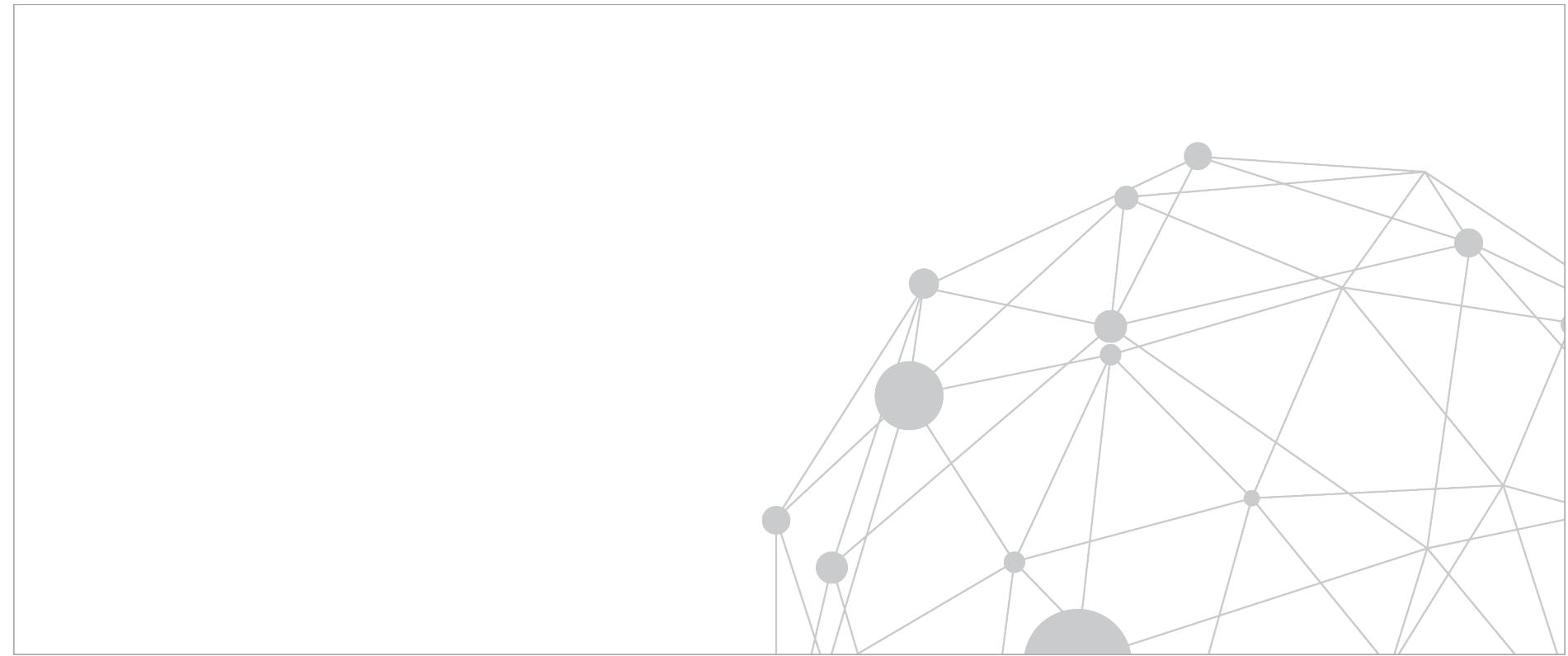
FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	5.99	14 Years	12.24
2 Years	15.98	15 Years	13.51
3 Years	14.50	16 Years	14.22
4 Years	14.19	17 Years	14.22
5 Years	10.01	18 Years	13.41
6 Years	12.04	19 Years	12.79
7 Years	11.25	20 Years	13.24
8 Years	10.09	21 Years	13.25
9 Years	12.08	22 Years	13.37
10 Years	13.80	23 Years	13.57
11 Years	6.71	24 Years	13.55
12 Years	8.53	25 Years	13.55
13 Years	10.97		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	5.99	3/31/2006	34.62
3/31/2018	25.79	3/31/2005	36.12
3/31/2017	12.07	3/31/2004	26.88
3/31/2016	13.45	3/31/2003	14.21
3/31/2015	-1.00	3/31/2002	-4.20
3/31/2014	19.30	3/31/2001	-2.39
3/31/2013	8.05	3/31/2000	30.44
3/31/2012	4.45	3/31/1999	14.02
3/31/2011	25.00	3/31/1998	22.33
3/31/2010	27.84	3/31/1997	36.70
3/31/2009	-43.12	3/31/1996	11.91
3/31/2008	34.99	3/31/1995	12.85
3/31/2007	54.59		

EX US BUYOUT: FUND SINCE INCEPTION ANALYSIS



CAMBRIDGE
ASSOCIATES

AS OF MARCH 31, 2019

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
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	16.92	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	11.96	10.74	10.83	12.12	18.86	4.26	22.47	1.77	0.00	1.77	32
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	17.43	16.02	16.61	22.95	4.90	18.35	1.93	0.01	1.94	28
2000	29.50	26.16	27.12	28.06	38.18	17.38	19.93	2.58	0.02	2.60	32
2001	29.05	25.77	26.00	26.48	33.50	15.14	17.93	2.09	0.00	2.09	20
2002	22.48	16.75	19.94	20.00	30.40	12.22	28.95	2.07	0.02	2.09	23
2003	19.83	20.98	25.96	22.22	33.98	9.71	22.74	1.66	0.01	1.67	19
2004	12.64	18.47	9.35	19.63	23.68	5.76	24.30	1.65	0.09	1.74	31
2005	5.00	6.70	7.11	6.85	12.34	0.71	12.94	1.25	0.05	1.30	55
2006	5.32	4.96	5.70	6.14	10.92	1.63	12.82	1.19	0.14	1.34	54
2007	9.72	6.61	7.65	7.77	13.39	3.95	16.14	1.38	0.22	1.59	59
2008	11.87	5.43	9.04	8.98	15.08	3.74	22.02	1.35	0.30	1.64	30
2009	8.29	10.19	10.08	10.07	16.54	2.61	12.64	0.88	0.55	1.43	15
2010	9.66	7.47	10.33	8.79	16.99	-1.79	13.17	0.73	0.69	1.42	17
2011	13.56	11.38	10.23	11.80	15.29	4.12	11.43	0.77	0.82	1.59	28
2012	15.32	12.96	14.66	13.28	16.67	8.87	7.54	0.65	0.98	1.63	31
2013	15.78	15.13	14.72	17.97	19.36	6.74	11.38	0.32	1.06	1.39	22
2014	15.38	14.47	13.64	15.07	19.02	10.87	8.41	0.15	1.16	1.30	26
2015	11.67	0.74	8.71	9.34	18.53	-6.14	28.61	0.11	1.06	1.18	22
2016	11.73	6.24	9.48	9.59	21.43	1.36	26.88	0.02	1.11	1.12	24
2017	-11.78	-14.78	-12.08	-11.60	-5.59	-23.77	33.96	0.00	0.95	0.95	14

AS OF MARCH 31, 2019

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 INDEX	MSCI EAFE INDEX (NET)			MSCI EUROPE INDEX (NET)		CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)	CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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	32	11.96	2.72	924	2.87	909	1.77	1.14	1.14	1.77	1.14	1.14	
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	28	17.15	6.51	1,064	7.11	1,004	1.94	1.28	1.31	1.93	1.27	1.30	
2000	32	29.50	11.79	1,772	12.26	1,724	2.60	1.40	1.41	2.58	1.39	1.41	
2001	20	29.05	14.03	1,502	14.46	1,459	2.09	1.41	1.42	2.09	1.40	1.42	
2002	23	22.48	8.27	1,421	8.69	1,379	2.09	1.31	1.32	2.07	1.30	1.32	
2003	19	19.83	6.32	1,351	6.93	1,290	1.67	1.22	1.24	1.66	1.22	1.24	
2004	31	12.64	3.01	963	3.16	948	1.74	1.15	1.15	1.65	1.10	1.10	
2005	55	5.00	1.41	359	1.28	372	1.30	1.08	1.07	1.25	1.03	1.03	
2006	54	5.32	2.66	265	2.48	283	1.34	1.16	1.14	1.19	1.03	1.03	
2007	59	9.72	4.57	515	4.47	525	1.59	1.23	1.23	1.38	1.11	1.10	
2008	30	11.87	6.09	579	6.08	580	1.64	1.28	1.28	1.35	1.07	1.08	
2009	15	8.29	5.43	286	5.10	319	1.43	1.26	1.24	0.88	0.82	0.81	
2010	17	9.66	5.38	428	5.02	464	1.42	1.21	1.20	0.73	0.65	0.64	
2011	28	13.56	4.84	873	4.25	931	1.59	1.18	1.15	0.77	0.60	0.59	
2012	31	15.32	4.22	1,111	3.47	1,185	1.63	1.15	1.12	0.65	0.49	0.48	
2013	22	15.78	4.16	1,162	3.44	1,233	1.39	1.09	1.07	0.32	0.27	0.26	
2014	26	15.38	4.95	1,043	4.46	1,091	1.30	1.09	1.08	0.15	0.13	0.13	
2015	22	11.67	4.22	745	3.91	776	1.18	1.06	1.06	0.11	0.11	0.11	
2016	24	11.73	1.61	1,012	1.24	1,049	1.12	1.02	1.01	0.02	0.02	0.02	
2017	14	-11.78	3.44	-1,522	4.21	-1,599	0.95	1.01	1.02	0.00	0.00	0.00	

Notes: Based on data compiled from 653 Ex US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI, Inc., and Thomson Returns Datastream.

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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 INDEX	S&P 500 INDEX		MSCI EMERGING MARKETS INDEX (GROSS)		CA BENCHMARK INDEX	S&P 500 INDEX	MSCI EMERGING MARKETS INDEX (GROSS)	CA BENCHMARK INDEX	S&P 500 INDEX	MSCI EMERGING MARKETS INDEX (GROSS)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD					
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	32	11.96	1.90	1,007	9.41	255	1.77	1.09	1.59	1.77	1.09	1.58
1998	28	15.01	0.89	1,412	12.11	289	2.15	1.04	1.75	2.14	1.04	1.74
1999	28	17.15	3.16	1,399	15.47	168	1.94	1.13	1.84	1.93	1.13	1.83
2000	32	29.50	6.10	2,340	22.70	680	2.60	1.20	1.93	2.58	1.19	1.92
2001	20	29.05	8.11	2,094	26.25	280	2.09	1.25	1.88	2.09	1.25	1.88
2002	23	22.48	6.91	1,557	18.14	434	2.09	1.31	1.72	2.07	1.30	1.71
2003	19	19.83	6.85	1,298	14.99	484	1.67	1.30	1.53	1.66	1.29	1.52
2004	31	12.64	6.20	645	8.55	410	1.74	1.37	1.43	1.65	1.27	1.37
2005	55	5.00	6.66	-166	4.10	89	1.30	1.46	1.23	1.25	1.38	1.18
2006	54	5.32	9.13	-382	2.85	246	1.34	1.66	1.16	1.19	1.44	1.04
2007	59	9.72	11.95	-223	2.54	718	1.59	1.75	1.12	1.38	1.53	1.00
2008	30	11.87	13.98	-210	3.48	839	1.64	1.79	1.16	1.35	1.45	0.96
2009	15	8.29	13.34	-505	3.40	489	1.43	1.75	1.16	0.88	1.09	0.74
2010	17	9.66	13.23	-357	3.68	598	1.42	1.61	1.15	0.73	0.80	0.59
2011	28	13.56	12.45	112	4.63	893	1.59	1.52	1.17	0.77	0.73	0.58
2012	31	15.32	11.97	335	4.87	1,045	1.63	1.46	1.17	0.65	0.60	0.49
2013	22	15.78	11.74	403	6.98	880	1.39	1.28	1.16	0.32	0.30	0.28
2014	26	15.38	12.29	309	8.19	719	1.30	1.24	1.15	0.15	0.14	0.14
2015	22	11.67	12.09	-42	7.25	442	1.18	1.18	1.11	0.11	0.11	0.11
2016	24	11.73	11.08	65	4.03	770	1.12	1.12	1.04	0.02	0.02	0.02
2017	14	-11.78	13.96	-2,574	6.83	-1,861	0.95	1.06	1.03	0.00	0.00	0.00

Notes: Based on data compiled from 653 Ex US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI, Inc., Standard & Poor's, and Thomson Returns Datastream.

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AS OF MARCH 31, 2019

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 INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX
			IRR	MPME IRR		TVPI	MPME TVPI	
1994	14	31.62	12.17	1,945	2.75	1.38	2.75	1.38
1995	13	27.62	9.54	1,808	2.14	1.27	2.14	1.26
1996	16	20.29	8.17	1,213	1.86	1.28	1.86	1.28
1997	32	11.96	2.58	938	1.77	1.13	1.77	1.13
1998	28	15.01	2.61	1,240	2.15	1.12	2.14	1.12
1999	28	17.15	5.41	1,174	1.94	1.23	1.93	1.23
2000	32	29.50	9.74	1,976	2.60	1.33	2.58	1.32
2001	20	29.05	11.97	1,708	2.09	1.36	2.09	1.36
2002	23	22.48	8.36	1,412	2.09	1.35	2.07	1.34
2003	19	19.83	7.34	1,249	1.67	1.29	1.66	1.28
2004	31	12.64	5.21	743	1.74	1.28	1.65	1.21
2005	55	5.00	4.34	66	1.30	1.27	1.25	1.21
2006	54	5.32	5.86	-54	1.34	1.38	1.19	1.21
2007	59	9.72	7.89	183	1.59	1.44	1.38	1.28
2008	30	11.87	9.58	230	1.64	1.49	1.35	1.22
2009	15	8.29	9.09	-80	1.43	1.47	0.88	0.93
2010	17	9.66	9.09	57	1.42	1.39	0.73	0.71
2011	28	13.56	8.70	486	1.59	1.34	0.77	0.66
2012	31	15.32	8.31	701	1.63	1.31	0.65	0.55
2013	22	15.78	8.59	718	1.39	1.20	0.32	0.28
2014	26	15.38	9.39	599	1.30	1.18	0.15	0.14
2015	22	11.67	8.95	272	1.18	1.13	0.11	0.11
2016	24	11.73	7.16	458	1.12	1.08	0.02	0.02
2017	14	-11.78	9.87	-2,165	0.95	1.04	0.00	0.00

Notes: Based on data compiled from 653 Ex US buyout funds, including fully liquidated partnerships, formed between 1994 and 2017. 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).

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EX US BUYOUT

AS OF MARCH 31, 2019

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
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	1.77	1.64	1.76	2.08	1.18	32
1998	2.15	2.39	1.78	2.42	1.48	28
1999	1.94	1.94	1.93	2.27	1.23	28
2000	2.60	2.44	2.35	2.98	1.92	32
2001	2.09	2.22	2.15	2.81	1.73	20
2002	2.09	2.02	1.98	2.25	1.52	23
2003	1.67	1.87	1.77	2.40	1.37	19
2004	1.74	1.89	1.52	2.23	1.24	31
2005	1.30	1.39	1.46	1.68	1.03	55
2006	1.34	1.36	1.37	1.70	1.09	54
2007	1.59	1.43	1.47	1.78	1.19	59
2008	1.64	1.47	1.42	1.82	1.16	30
2009	1.43	1.60	1.57	1.90	1.13	15
2010	1.42	1.35	1.42	1.74	0.91	17
2011	1.59	1.53	1.37	1.76	1.17	28
2012	1.63	1.52	1.58	1.77	1.33	31
2013	1.39	1.51	1.36	1.74	1.18	22
2014	1.30	1.31	1.28	1.42	1.21	26
2015	1.18	1.07	1.11	1.32	0.92	22
2016	1.12	1.09	1.11	1.20	1.02	24
2017	0.95	0.89	0.89	0.97	0.84	14

EX US BUYOUT

AS OF MARCH 31, 2019

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
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	1.77	1.64	1.76	2.08	1.18	32
1998	2.14	2.38	1.78	2.42	1.48	28
1999	1.93	1.93	1.93	2.27	1.16	28
2000	2.58	2.42	2.35	2.98	1.84	32
2001	2.09	2.22	2.15	2.81	1.73	20
2002	2.07	2.00	1.95	2.23	1.52	23
2003	1.66	1.86	1.72	2.40	1.37	19
2004	1.65	1.80	1.48	2.16	1.21	31
2005	1.25	1.32	1.36	1.63	0.92	55
2006	1.19	1.21	1.23	1.51	0.87	54
2007	1.38	1.22	1.32	1.49	0.83	59
2008	1.35	1.18	1.13	1.49	0.70	30
2009	0.88	1.07	0.95	1.44	0.56	15
2010	0.73	0.68	0.66	1.14	0.19	17
2011	0.77	0.73	0.64	1.06	0.23	28
2012	0.65	0.57	0.61	0.79	0.25	31
2013	0.32	0.52	0.30	0.75	0.14	22
2014	0.15	0.21	0.15	0.27	0.01	26
2015	0.11	0.15	0.07	0.13	0.00	22
2016	0.02	0.04	0.00	0.03	0.00	24
2017	0.00	0.00	0.00	0.00	0.00	14

EX US BUYOUT

AS OF MARCH 31, 2019

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
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	32
1998	0.01	0.01	0.00	0.00	0.00	28
1999	0.01	0.01	0.00	0.00	0.00	28
2000	0.02	0.01	0.00	0.00	0.00	32
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	0.01	0.01	0.00	0.00	0.00	19
2004	0.09	0.10	0.02	0.06	0.00	31
2005	0.05	0.07	0.02	0.10	0.00	55
2006	0.14	0.15	0.09	0.19	0.01	54
2007	0.22	0.22	0.13	0.32	0.05	59
2008	0.30	0.29	0.19	0.52	0.02	30
2009	0.55	0.53	0.33	0.85	0.25	15
2010	0.69	0.67	0.73	0.76	0.52	17
2011	0.82	0.79	0.78	1.02	0.51	28
2012	0.98	0.95	0.97	1.11	0.81	31
2013	1.06	1.00	1.00	1.09	0.91	22
2014	1.16	1.10	1.12	1.24	1.00	26
2015	1.06	0.92	0.96	1.13	0.83	22
2016	1.11	1.05	1.08	1.20	0.93	24
2017	0.95	0.89	0.89	0.97	0.84	14

GROWTH EQUITY: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

GROWTH EQUITY

AS OF MARCH 31, 2019

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
GROWTH EQUITY INDEX¹	6.14	16.87	16.41	13.05	15.05	13.23	13.76	14.76
Bloomberg Barclays Capital Government/Credit Bond Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones Industrial Average Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US Small Cap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Dow Jones US TopCap Index	9.95	-7.06	11.09	4.06	9.31	8.28	8.73	5.76
MSCI Emerging Markets Index (gross)	10.84	-3.72	6.56	1.04	8.95	5.24	3.86	6.72
MSCI Europe Index (US\$) (net)	12.84	5.45	7.08	5.27	10.79	5.88	3.66	6.92
MSCI Europe Index (€) (net)	8.53	-3.86	8.82	4.96	9.12	4.83	4.15	2.55
MSCI Pacific Index (net)	10.45	-3.14	7.29	2.20	8.82	5.18	4.11	5.05
MSCI World Ex US Index (net)	12.48	4.01	10.68	6.78	12.38	6.82	4.82	7.03
MSCI World Index (net)	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Nasdaq Composite Index*	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 1000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
Russell 2000® Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
S&P 500 Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36

The index is a horizon calculation based on data compiled from 607 growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

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GROWTH EQUITY

AS OF MARCH 31, 2019

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
GROWTH EQUITY INDEX¹	16.87	16.41	13.05	15.05	13.23	13.76	14.76
MPME ANALYSIS²							
MSCI EAFE Index (net)	-3.57	7.05	2.59	7.54	4.53	4.31	4.46
Value-Add (bps)	2,043	935	1,046	750	870	945	1,030
MSCI Europe Index (net)	-3.53	6.38	1.40	7.43	4.44	4.14	4.62
Value-Add (bps)	2,040	1,003	1,164	762	879	962	1,014
S&P 500 Index	9.45	13.51	10.94	15.29	9.84	8.60	9.45
Value-Add (bps)	742	290	211	-24	339	516	531
Russell 2000® Index	1.94	12.86	7.10	14.52	8.92	9.07	9.06
Value-Add (bps)	1,493	354	595	52	431	469	570
Russell 3000® Index	8.72	13.48	10.39	15.33	9.84	8.76	9.49
Value-Add (bps)	815	292	266	-28	338	500	527
Constructed Index: MSCI World/MSCI All Country World Index ³ (gross)	3.22	11.21	7.18	11.56	7.50	6.81	7.17
Value-Add (bps)	1,365	520	587	349	572	695	759

The index is a horizon calculation based on data compiled from 607 growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ Constructed Index: MSCI World/MSCI All Country World Index: Data rom 1/1/1986 to 12/31/1987 represented by MSCI 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.

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AS OF MARCH 31, 2019

GROWTH EQUITY

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	6.02
1994 Q2	-0.63
1994 Q3	6.56
1994 Q4	5.65
1995 Q1	10.13
1995 Q2	7.02
1995 Q3	7.49
1995 Q4	7.33
1996 Q1	6.61
1996 Q2	10.10
1996 Q3	5.72
1996 Q4	4.17
1997 Q1	1.24
1997 Q2	21.00
1997 Q3	9.74
1997 Q4	-1.66
1998 Q1	12.15
1998 Q2	-3.77
1998 Q3	-5.76
1998 Q4	7.21
1999 Q1	7.72
1999 Q2	14.35
1999 Q3	6.61
1999 Q4	53.09
2000 Q1	18.53
2000 Q2	2.88

QUARTER ENDING	HORIZON RETURN
2000 Q3	8.15
2000 Q4	-7.63
2001 Q1	-9.75
2001 Q2	2.23
2001 Q3	-10.91
2001 Q4	2.31
2002 Q1	-2.38
2002 Q2	-4.15
2002 Q3	-8.70
2002 Q4	-0.99
2003 Q1	-3.69
2003 Q2	6.37
2003 Q3	6.20
2003 Q4	6.96
2004 Q1	4.42
2004 Q2	0.88
2004 Q3	0.77
2004 Q4	10.45
2005 Q1	1.59
2005 Q2	7.56
2005 Q3	8.03
2005 Q4	3.58
2006 Q1	8.08
2006 Q2	-0.16
2006 Q3	5.19
2006 Q4	10.31

QUARTER ENDING	HORIZON RETURN
2007 Q1	8.39
2007 Q2	10.18
2007 Q3	4.36
2007 Q4	7.51
2008 Q1	-5.27
2008 Q2	-0.42
2008 Q3	-6.03
2008 Q4	-14.76
2009 Q1	-3.43
2009 Q2	8.20
2009 Q3	6.58
2009 Q4	6.02
2010 Q1	4.91
2010 Q2	0.01
2010 Q3	6.17
2010 Q4	10.46
2011 Q1	3.70
2011 Q2	4.01
2011 Q3	-5.42
2011 Q4	3.70
2012 Q1	6.27
2012 Q2	-1.20
2012 Q3	2.90
2012 Q4	3.65
2013 Q1	2.77
2013 Q2	1.88

QUARTER ENDING	HORIZON RETURN
2013 Q3	6.18
2013 Q4	8.72
2014 Q1	3.45
2014 Q2	4.24
2014 Q3	1.61
2014 Q4	1.40
2015 Q1	3.03
2015 Q2	5.45
2015 Q3	-2.66
2015 Q4	3.24
2016 Q1	-0.09
2016 Q2	1.72
2016 Q3	3.92
2016 Q4	2.26
2017 Q1	4.07
2017 Q2	3.99
2017 Q3	4.79
2017 Q4	5.89
2018 Q1	4.04
2018 Q2	6.23
2018 Q3	3.37
2018 Q4	0.29
2019 Q1	6.14

AS OF MARCH 31, 2019

GROWTH EQUITY

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	16.87	14 Years	13.18
2 Years	18.45	15 Years	13.23
3 Years	16.41	16 Years	13.74
4 Years	13.66	17 Years	12.35
5 Years	13.05	18 Years	11.45
6 Years	14.44	19 Years	10.74
7 Years	13.49	20 Years	13.76
8 Years	12.85	21 Years	13.52
9 Years	13.79	22 Years	14.24
10 Years	15.05	23 Years	14.40
11 Years	11.45	24 Years	14.65
12 Years	11.72	25 Years	14.76
13 Years	12.42		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	16.87	3/31/2006	30.17
3/31/2018	20.05	3/31/2005	14.15
3/31/2017	12.49	3/31/2004	26.11
3/31/2016	5.85	3/31/2003	-16.50
3/31/2015	10.66	3/31/2002	-8.94
3/31/2014	21.56	3/31/2001	-6.65
3/31/2013	8.31	3/31/2000	121.18
3/31/2012	8.59	3/31/1999	6.16
3/31/2011	21.74	3/31/1998	45.83
3/31/2010	28.14	3/31/1997	22.40
3/31/2009	-23.31	3/31/1996	31.45
3/31/2008	15.90	3/31/1995	24.08
3/31/2007	26.19		

GROWTH EQUITY: FUND SINCE INCEPTION ANALYSIS



CAMBRIDGE
ASSOCIATES

AS OF MARCH 31, 2019

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
1994	35.13	10.09	0.22	10.75	9.89	-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	13.32	19.03	14.45	16.51	26.88	9.24	21.82	1.82	0.00	1.83	12
1998	10.14	8.61	9.74	9.49	15.18	2.01	9.48	1.58	0.00	1.58	13
1999	3.12	6.96	0.75	7.68	17.17	-3.82	15.53	1.21	0.02	1.23	12
2000	9.10	7.18	7.51	7.44	14.70	2.40	10.43	1.57	0.03	1.61	29
2001	14.49	5.21	10.58	6.93	—	—	—	2.21	0.05	2.26	7
2002	10.28	21.35	12.39	16.89	20.64	5.09	30.76	1.63	0.08	1.71	8
2003	16.55	23.09	14.49	24.09	—	—	—	1.90	0.04	1.94	7
2004	8.37	26.57	7.88	13.32	23.96	0.91	56.24	1.37	0.13	1.50	20
2005	11.77	10.18	9.85	12.06	17.17	1.33	14.82	1.71	0.16	1.87	38
2006	8.06	7.54	5.93	11.23	12.19	1.05	10.87	1.40	0.16	1.56	30
2007	9.66	5.26	6.36	7.65	11.25	-2.46	12.25	1.25	0.44	1.70	51
2008	10.68	8.34	6.88	8.99	12.47	3.53	8.77	1.03	0.68	1.71	36
2009	14.87	11.17	9.71	12.23	16.07	7.44	7.21	0.98	0.98	1.96	18
2010	15.39	15.63	14.66	14.88	20.25	6.17	16.62	0.87	1.01	1.88	29
2011	15.10	12.88	13.54	13.27	16.94	7.00	8.22	0.68	1.07	1.75	35
2012	13.61	11.18	11.75	12.18	17.51	6.85	9.35	0.45	1.10	1.55	30
2013	16.28	15.22	13.14	16.57	19.88	8.45	11.24	0.31	1.30	1.61	34
2014	24.68	19.81	15.43	22.00	25.06	11.89	15.44	0.32	1.37	1.69	38
2015	17.05	15.28	13.54	18.19	25.00	5.26	16.72	0.09	1.20	1.29	37
2016	19.18	11.38	11.41	18.13	22.09	5.25	17.73	0.04	1.18	1.22	33
2017	9.14	7.74	0.65	15.98	17.15	-8.66	37.66	0.04	1.01	1.05	16

AS OF MARCH 31, 2019

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 INDEX	MSCI EAFE INDEX (NET)			MSCI EUROPE INDEX (NET)		CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)	CA BENCHMARK INDEX	MSCI EAFE INDEX (NET)	MSCI EUROPE INDEX (NET)
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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	496	1.60	1.19	1.25	1.59	1.19	1.24
1997	12	13.32	3.36	996		3.60	972	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	3.12	3.97	-86		4.61	-149	1.23	1.24	1.28	1.21	1.23	1.28
2000	29	9.10	7.47	162		7.84	126	1.61	1.41	1.44	1.57	1.39	1.41
2001	7	14.49	8.25	624		8.64	585	2.26	1.53	1.56	2.21	1.50	1.53
2002	8	10.28	11.23	-95		11.66	-137	1.71	1.70	1.73	1.63	1.64	1.67
2003	7	16.55	3.97	1,258		4.19	1,236	1.94	1.17	1.18	1.90	1.15	1.16
2004	20	8.37	2.73	565		2.79	558	1.50	1.15	1.15	1.37	1.06	1.06
2005	38	11.77	1.40	1,037		1.35	1,042	1.87	1.08	1.07	1.71	1.00	1.00
2006	30	8.06	2.37	569		2.15	591	1.56	1.15	1.13	1.40	1.00	0.99
2007	51	9.66	4.64	502		4.54	511	1.70	1.28	1.27	1.25	1.01	1.01
2008	36	10.68	5.64	504		5.49	520	1.71	1.32	1.31	1.03	0.85	0.84
2009	18	14.87	5.50	937		5.29	958	1.96	1.28	1.26	0.98	0.71	0.71
2010	29	15.39	5.46	992		5.14	1,024	1.88	1.24	1.23	0.87	0.65	0.64
2011	35	15.10	4.76	1,034		4.16	1,094	1.75	1.20	1.17	0.68	0.51	0.50
2012	30	13.61	3.63	997		2.86	1,075	1.55	1.12	1.10	0.45	0.36	0.36
2013	34	16.28	4.01	1,228		3.23	1,305	1.61	1.13	1.10	0.31	0.24	0.24
2014	38	24.68	4.66	2,002		4.01	2,067	1.69	1.11	1.09	0.32	0.24	0.24
2015	37	17.05	4.17	1,289		3.75	1,330	1.29	1.07	1.06	0.09	0.08	0.08
2016	33	19.18	1.99	1,719		1.72	1,745	1.22	1.02	1.02	0.04	0.03	0.03
2017	16	9.14	-0.59	973		-0.19	933	1.05	1.00	1.00	0.04	0.04	0.04

Notes: Based on data compiled from 568 growth equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, MSCI Inc., and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

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 INDEX	S&P 500 INDEX			RUSSELL 2000® INDEX		CA BENCHMARK INDEX	S&P 500 INDEX	RUSSELL 2000® INDEX	CA BENCHMARK INDEX	S&P 500 INDEX	RUSSELL 2000® INDEX
			IRR	MPME IRR	VALUE-ADD	MPME IRR	VALUE-ADD						
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		7.07	297	1.60	1.21	1.37	1.59	1.20	1.36
1997	12	13.32	1.73	1,159		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	3.12	1.20	192		6.92	-380	1.23	1.07	1.45	1.21	1.06	1.43
2000	29	9.10	5.06	404		8.01	109	1.61	1.31	1.49	1.57	1.26	1.45
2001	7	14.49	6.49	800		8.29	620	2.26	1.48	1.62	2.21	1.43	1.57
2002	8	10.28	7.43	286		10.22	7	1.71	1.51	1.72	1.63	1.41	1.62
2003	7	16.55	5.97	1,058		6.98	958	1.94	1.31	1.36	1.90	1.26	1.32
2004	20	8.37	6.10	227		6.25	212	1.50	1.42	1.42	1.37	1.24	1.26
2005	38	11.77	5.95	581		6.18	558	1.87	1.41	1.42	1.71	1.25	1.28
2006	30	8.06	8.82	-75		8.58	-52	1.56	1.68	1.65	1.40	1.42	1.41
2007	51	9.66	11.84	-218		11.40	-175	1.70	1.91	1.84	1.25	1.42	1.40
2008	36	10.68	13.51	-283		12.23	-154	1.71	1.98	1.83	1.03	1.16	1.12
2009	18	14.87	13.54	133		11.47	340	1.96	1.83	1.66	0.98	0.95	0.90
2010	29	15.39	13.34	204		11.18	421	1.88	1.71	1.56	0.87	0.83	0.79
2011	35	15.10	12.52	258		10.02	508	1.75	1.59	1.45	0.68	0.64	0.60
2012	30	13.61	11.42	219		8.36	525	1.55	1.44	1.31	0.45	0.44	0.41
2013	34	16.28	11.49	479		8.57	771	1.61	1.40	1.28	0.31	0.29	0.28
2014	38	24.68	12.01	1,266		8.81	1,587	1.69	1.29	1.21	0.32	0.27	0.26
2015	37	17.05	12.09	496		7.73	932	1.29	1.20	1.12	0.09	0.09	0.08
2016	33	19.18	11.13	804		4.51	1,467	1.22	1.13	1.05	0.04	0.04	0.03
2017	16	9.14	9.76	-62		-0.04	918	1.05	1.06	1.00	0.04	0.04	0.04

Notes: Based on data compiled from 568 growth equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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, Standard & Poor's, and Thomson Reuters Datastream.

AS OF MARCH 31, 2019

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 INDEX	RUSSELL 3000® INDEX		MSCI ALL COUNTRY WORLD INDEX (GROSS)		CA BENCHMARK INDEX	RUSSELL 3000® INDEX	MSCI ALL COUNTRY WORLD INDEX (GROSS)	CA BENCHMARK INDEX	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
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	498	4.33	571	1.60	1.23	1.20	1.59	1.23	1.20
1997	12	13.32	2.58	1,074	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	3.12	2.00	112	3.10	2	1.23	1.12	1.19	1.21	1.10	1.18
2000	29	9.10	5.61	348	7.00	210	1.61	1.35	1.42	1.57	1.30	1.38
2001	7	14.49	6.97	752	8.14	635	2.26	1.52	1.57	2.21	1.46	1.53
2002	8	10.28	8.08	221	10.04	25	1.71	1.56	1.67	1.63	1.46	1.58
2003	7	16.55	6.32	1,023	5.64	1,091	1.94	1.33	1.27	1.90	1.28	1.23
2004	20	8.37	6.30	207	5.03	334	1.50	1.43	1.31	1.37	1.26	1.17
2005	38	11.77	6.14	563	4.15	762	1.87	1.42	1.26	1.71	1.27	1.14
2006	30	8.06	8.92	-86	5.64	243	1.56	1.69	1.39	1.40	1.43	1.19
2007	51	9.66	11.90	-225	7.97	169	1.70	1.91	1.54	1.25	1.42	1.17
2008	36	10.68	13.44	-275	9.26	143	1.71	1.97	1.59	1.03	1.16	0.97
2009	18	14.87	13.31	156	9.17	570	1.96	1.81	1.51	0.98	0.94	0.81
2010	29	15.39	13.11	228	9.19	620	1.88	1.69	1.45	0.87	0.83	0.72
2011	35	15.10	12.20	291	8.74	636	1.75	1.57	1.39	0.68	0.63	0.57
2012	30	13.61	10.99	262	7.86	575	1.55	1.42	1.29	0.45	0.43	0.40
2013	34	16.28	11.09	519	8.25	803	1.61	1.38	1.27	0.31	0.28	0.27
2014	38	24.68	11.62	1,306	9.03	1,565	1.69	1.28	1.22	0.32	0.27	0.26
2015	37	17.05	11.69	536	8.97	809	1.29	1.19	1.15	0.09	0.09	0.08
2016	33	19.18	10.54	864	7.35	1,183	1.22	1.12	1.08	0.04	0.04	0.03
2017	16	9.14	8.94	20	5.59	355	1.05	1.05	1.03	0.04	0.04	0.04

Notes: Based on data compiled from 568 growth equity funds, including fully liquidated partnerships, formed between 1994 and 2017. 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., and Thomson Reuters Datastream.

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GROWTH EQUITY

AS OF MARCH 31, 2019

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
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	1.43	2.02	0.77	13
1997	1.83	2.17	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	1.48	1.44	1.88	1.14	29
2001	2.26	1.48	1.51	—	—	7
2002	1.71	2.31	1.95	2.86	1.32	8
2003	1.94	2.25	1.77	—	—	7
2004	1.50	1.75	1.42	1.89	1.05	20
2005	1.87	1.89	1.65	2.35	1.11	38
2006	1.56	1.91	1.42	1.85	1.07	30
2007	1.70	1.53	1.41	1.75	0.89	51
2008	1.71	1.61	1.47	1.86	1.18	36
2009	1.96	1.81	1.68	2.12	1.43	18
2010	1.88	1.85	1.81	2.16	1.33	29
2011	1.75	1.69	1.62	2.01	1.36	35
2012	1.55	1.48	1.42	1.75	1.29	30
2013	1.61	1.57	1.41	1.72	1.28	34
2014	1.69	1.64	1.43	1.71	1.30	38
2015	1.29	1.32	1.24	1.54	1.09	37
2016	1.22	1.16	1.11	1.20	1.05	33
2017	1.05	1.06	1.00	1.10	0.94	16

GROWTH EQUITY

AS OF MARCH 31, 2019

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
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	1.43	1.98	0.77	13
1997	1.82	2.16	1.88	2.52	1.58	12
1998	1.58	1.48	1.50	1.78	1.14	13
1999	1.21	1.56	1.06	2.08	0.72	12
2000	1.57	1.43	1.44	1.87	1.14	29
2001	2.21	1.44	1.51	—	—	7
2002	1.63	2.25	1.95	2.69	1.27	8
2003	1.90	2.22	1.77	—	—	7
2004	1.37	1.53	1.26	1.67	0.86	20
2005	1.71	1.66	1.39	2.14	0.61	38
2006	1.40	1.70	1.18	1.61	0.94	30
2007	1.25	1.05	0.93	1.49	0.52	51
2008	1.03	0.94	0.85	1.21	0.49	36
2009	0.98	0.70	0.67	0.95	0.37	18
2010	0.87	0.97	0.90	1.44	0.48	29
2011	0.68	0.59	0.38	1.06	0.19	35
2012	0.45	0.39	0.35	0.50	0.09	30
2013	0.31	0.37	0.22	0.47	0.09	34
2014	0.32	0.30	0.17	0.47	0.06	38
2015	0.09	0.08	0.00	0.08	0.00	37
2016	0.04	0.03	0.00	0.04	0.00	33
2017	0.04	0.05	0.00	0.00	0.00	16

GROWTH EQUITY

AS OF MARCH 31, 2019

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
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	0.00	0.00	0.00	0.00	13
1997	0.00	0.01	0.00	0.00	0.00	12
1998	0.00	0.00	0.00	0.00	0.00	13
1999	0.02	0.02	0.00	0.02	0.00	12
2000	0.03	0.05	0.00	0.04	0.00	29
2001	0.05	0.04	0.02	—	—	7
2002	0.08	0.05	0.00	0.05	0.00	8
2003	0.04	0.03	0.00	—	—	7
2004	0.13	0.21	0.02	0.16	0.00	20
2005	0.16	0.23	0.16	0.29	0.02	38
2006	0.16	0.21	0.14	0.27	0.02	30
2007	0.44	0.48	0.26	0.61	0.10	51
2008	0.68	0.67	0.58	0.93	0.32	36
2009	0.98	1.11	1.12	1.21	0.75	18
2010	1.01	0.88	0.80	1.14	0.48	29
2011	1.07	1.10	1.06	1.33	0.81	35
2012	1.10	1.09	1.13	1.34	0.82	30
2013	1.30	1.20	1.25	1.40	0.99	34
2014	1.37	1.34	1.22	1.46	1.00	38
2015	1.20	1.24	1.18	1.44	1.06	37
2016	1.18	1.13	1.09	1.15	0.98	33
2017	1.01	1.01	0.98	1.07	0.94	16

US GROWTH EQUITY: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

US GROWTH EQUITY

AS OF MARCH 31, 2019

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
US GROWTH EQUITY INDEX¹	6.46	20.65	19.64	15.06	16.80	14.05	16.42	20.02
Bloomberg Barclays Capital Government/Credit Bond Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36
Dow Jones Industrial Average Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones US Small Cap Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US TopCap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Nasdaq Composite Index*	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Russell 1000® Index	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 2000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
S&P 500 Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
Wilshire 5000 Total Market Index	14.11	8.93	13.59	10.52	15.99	8.77	6.56	9.77

The index is a horizon calculation based on data compiled from 269 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, Standard & Poor's and Thomson Reuters Datastream, and Wilshire Associates.

*Capital change only

US GROWTH EQUITY

AS OF MARCH 31, 2019

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
US GROWTH EQUITY INDEX¹	20.65	19.64	15.06	16.80	14.05	16.42	20.02
MPME ANALYSIS²							
Russell 2000® Index	1.97	12.92	7.16	15.41	8.75	9.00	8.97
Value-Add (bps)	1,868	672	790	139	530	742	1,104
Russell 2500™ Index	4.45	12.59	7.87	16.44	9.54	9.94	9.99
Value-Add (bps)	1,620	704	719	36	451	648	1,003
Russell 3000® Index	8.73	13.53	10.44	15.88	9.50	8.49	9.21
Value-Add (bps)	1,193	611	462	91	455	793	1,080
Russell Midcap® Index	6.52	11.87	8.89	17.07	10.14	10.02	10.39
Value-Add (bps)	1,414	776	617	-27	391	640	963
S&P 500 Index	9.46	13.55	10.98	15.77	9.45	8.30	9.14
Value-Add (bps)	1,120	608	407	102	460	812	1,088
Constructed Index: MSCI World/MSCI All Country World Index ³ (gross)	3.25	11.28	7.25	12.17	7.41	6.76	7.13
Value-Add (bps)	1,741	836	781	463	664	966	1,289

The index is a horizon calculation based on data compiled from 269 US growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ Constructed Index: MSCI World/MSCI All Country World Index: Data rom 1/1/1986 to 12/31/1987 represented by MSCI 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. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

US GROWTH EQUITY

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	9.23
1994 Q2	-0.54
1994 Q3	7.92
1994 Q4	9.70
1995 Q1	15.18
1995 Q2	10.30
1995 Q3	10.45
1995 Q4	13.30
1996 Q1	9.30
1996 Q2	14.17
1996 Q3	7.58
1996 Q4	3.56
1997 Q1	-0.19
1997 Q2	31.44
1997 Q3	14.58
1997 Q4	0.49
1998 Q1	15.49
1998 Q2	-2.94
1998 Q3	-6.77
1998 Q4	7.59
1999 Q1	10.45
1999 Q2	16.48
1999 Q3	9.55
1999 Q4	70.40
2000 Q1	22.17
2000 Q2	5.26

QUARTER ENDING	HORIZON RETURN
2000 Q3	12.48
2000 Q4	-7.72
2001 Q1	-12.53
2001 Q2	3.35
2001 Q3	-13.01
2001 Q4	3.18
2002 Q1	-4.20
2002 Q2	-5.12
2002 Q3	-8.40
2002 Q4	-0.83
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	-0.26
2005 Q2	8.19
2005 Q3	8.35
2005 Q4	2.20
2006 Q1	7.70
2006 Q2	-0.36
2006 Q3	4.45
2006 Q4	7.80

QUARTER ENDING	HORIZON RETURN
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	-3.31
2008 Q4	-13.02
2009 Q1	-3.76
2009 Q2	5.92
2009 Q3	5.21
2009 Q4	3.76
2010 Q1	4.46
2010 Q2	0.82
2010 Q3	4.47
2010 Q4	10.73
2011 Q1	4.12
2011 Q2	4.98
2011 Q3	-3.35
2011 Q4	6.22
2012 Q1	6.27
2012 Q2	-0.18
2012 Q3	3.83
2012 Q4	3.17
2013 Q1	3.76
2013 Q2	3.29

QUARTER ENDING	HORIZON RETURN
2013 Q3	8.14
2013 Q4	8.51
2014 Q1	3.24
2014 Q2	4.73
2014 Q3	1.33
2014 Q4	1.80
2015 Q1	3.01
2015 Q2	4.95
2015 Q3	-1.01
2015 Q4	1.73
2016 Q1	0.47
2016 Q2	2.66
2016 Q3	4.94
2016 Q4	2.85
2017 Q1	4.28
2017 Q2	4.30
2017 Q3	5.27
2017 Q4	6.20
2018 Q1	5.46
2018 Q2	7.64
2018 Q3	4.89
2018 Q4	0.39
2019 Q1	6.46

AS OF MARCH 31, 2019

US GROWTH EQUITY

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	20.65	14 Years	14.18
2 Years	21.81	15 Years	14.05
3 Years	19.64	16 Years	14.55
4 Years	16.06	17 Years	12.92
5 Years	15.06	18 Years	11.79
6 Years	16.80	19 Years	11.17
7 Years	15.74	20 Years	16.42
8 Years	15.58	21 Years	16.01
9 Years	16.32	22 Years	18.19
10 Years	16.80	23 Years	18.53
11 Years	12.92	24 Years	19.52
12 Years	12.91	25 Years	20.02
13 Years	13.36		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	20.65	3/31/2006	29.22
3/31/2018	22.94	3/31/2005	11.71
3/31/2017	15.54	3/31/2004	24.98
3/31/2016	6.15	3/31/2003	-17.03
3/31/2015	11.29	3/31/2002	-11.10
3/31/2014	25.04	3/31/2001	-2.73
3/31/2013	10.83	3/31/2000	163.05
3/31/2012	14.65	3/31/1999	8.73
3/31/2011	21.54	3/31/1998	74.29
3/31/2010	20.74	3/31/1997	26.73
3/31/2009	-19.44	3/31/1996	50.56
3/31/2008	12.72	3/31/1995	36.41
3/31/2007	20.55		

EX US GROWTH EQUITY: FUND INDEX ANALYSIS



CAMBRIDGE
ASSOCIATES

EX US GROWTH EQUITY

AS OF MARCH 31, 2019

FUND INDEX SUMMARY: HORIZON POOLED RETURN

Net to Limited Partners

INDEX	1-QUARTER	1-YEAR	3-YEAR	5-YEAR	10-YEAR	15-YEAR	20-YEAR	25-YEAR
EX US GROWTH EQUITY INDEX¹	5.70	12.11	12.35	10.46	12.40	11.72	10.29	9.85
Bloomberg Barclays Capital Government/Credit Bond Index	11.81	10.09	16.37	12.21	15.97	9.02	7.50	10.72
Dow Jones Industrial Average Index	16.70	4.86	11.98	7.06	16.48	8.83	9.87	10.26
Dow Jones US Small Cap Index	13.70	9.50	13.65	10.79	16.01	8.82	6.27	9.80
Dow Jones US TopCap Index	9.95	-7.06	11.09	4.06	9.31	8.28	8.73	5.76
MSCI Emerging Markets Index (gross)	10.84	-3.72	6.56	1.04	8.95	5.24	3.86	6.72
MSCI Europe Index (US\$) (net)	12.84	5.45	7.08	5.27	10.79	5.88	3.66	6.92
MSCI Europe Index (€) (net)	8.53	-3.86	8.82	4.96	9.12	4.83	4.15	2.55
MSCI Pacific Index (net)	10.45	-3.14	7.29	2.20	8.82	5.18	4.11	5.05
MSCI World Ex US Index (net)	12.48	4.01	10.68	6.78	12.38	6.82	4.82	7.03
MSCI World Index (net)	16.49	9.43	16.65	12.98	17.59	9.45	5.89	9.82
Nasdaq Composite Index*	14.00	9.30	13.52	10.63	16.05	8.74	6.33	9.89
Russell 1000® Index	14.58	2.05	12.92	7.05	15.36	8.04	8.44	8.99
Russell 2000® Index	13.65	9.50	13.51	10.91	15.92	8.57	6.04	9.80
S&P 500 Index	3.26	4.48	2.12	2.78	3.92	3.86	4.78	5.36

The index is a horizon calculation based on data compiled from 338 Ex US growth equity funds, including fully liquidated partnerships, formed between 1989 and 2018.

¹ 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, Dow Jones Indices, Frank Russell Company, MSCI Inc., Standard & Poor's and Thomson Reuters Datastream.

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets Indices are gross of dividend taxes. Total Returns for MSCI Developed Markets Indices are net of dividend taxes.

EX US GROWTH EQUITY

AS OF MARCH 31, 2019

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
EX US GROWTH EQUITY INDEX¹	12.11	12.35	10.46	12.40	11.72	10.29	9.85

MPME ANALYSIS ²							
MSCI EAFE Index (net)	-3.61	6.94	2.47	6.78	4.44	4.03	4.17
Value-Add (bps)	1,572	541	800	561	728	626	568
MSCI Europe Index (net)	-3.59	6.26	1.27	6.59	4.28	3.82	4.29
Value-Add (bps)	1,570	609	920	581	744	648	556
S&P 500 Index	9.46	13.47	10.89	14.68	10.37	8.73	9.62
Value-Add (bps)	265	-112	-43	-228	135	156	24
Constructed Index: Global Financial Data Emerging Markets/MSCI Emerging Markets (gross) ³	-6.68	10.69	4.40	7.06	5.94	6.34	5.90
Value-Add (bps)	1,879	166	607	534	578	396	395
Constructed Index: MSCI World/MSCI All Country World Index ⁴ (gross)	3.20	11.12	7.09	10.81	7.66	6.70	7.06
Value-Add (bps)	891	123	337	159	406	359	279

The index is a horizon calculation based on data compiled from 338 Ex US growth equity funds, including fully liquidated partnerships, formed between 1989 and 2018.

¹ Pooled horizon return, net of fees, expenses, and carried interest.

² 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.

³ 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.

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

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

MSCI data provided "as is" without any express or implied warranties. Total returns for MSCI Emerging Markets indexes are gross of dividend taxes. Total returns for MSCI Developed Markets indexes are net of dividend taxes.

AS OF MARCH 31, 2019

EX US GROWTH EQUITY

FUND INDEX DETAILS: ONE QUARTER HORIZON POOLED RETURN

Net to Limited Partners

QUARTER ENDING	HORIZON RETURN
1994 Q1	-0.74
1994 Q2	-0.84
1994 Q3	3.95
1994 Q4	-2.00
1995 Q1	0.07
1995 Q2	0.48
1995 Q3	1.53
1995 Q4	-4.38
1996 Q1	0.92
1996 Q2	1.13
1996 Q3	1.39
1996 Q4	5.62
1997 Q1	4.46
1997 Q2	-0.42
1997 Q3	-2.78
1997 Q4	-7.75
1998 Q1	2.50
1998 Q2	-6.37
1998 Q3	-2.76
1998 Q4	6.18
1999 Q1	0.78
1999 Q2	8.71
1999 Q3	-1.07
1999 Q4	11.47
2000 Q1	8.17
2000 Q2	-3.72

QUARTER ENDING	HORIZON RETURN
2000 Q3	-3.37
2000 Q4	-7.39
2001 Q1	-2.21
2001 Q2	-0.52
2001 Q3	-5.47
2001 Q4	0.18
2002 Q1	2.18
2002 Q2	-1.86
2002 Q3	-9.39
2002 Q4	-1.35
2003 Q1	-3.42
2003 Q2	6.03
2003 Q3	7.57
2003 Q4	5.97
2004 Q1	6.68
2004 Q2	-0.51
2004 Q3	3.07
2004 Q4	10.36
2005 Q1	6.43
2005 Q2	5.90
2005 Q3	7.14
2005 Q4	7.40
2006 Q1	9.11
2006 Q2	0.36
2006 Q3	7.21
2006 Q4	16.92

QUARTER ENDING	HORIZON RETURN
2007 Q1	11.60
2007 Q2	13.02
2007 Q3	5.61
2007 Q4	14.04
2008 Q1	-8.35
2008 Q2	-1.09
2008 Q3	-11.16
2008 Q4	-18.19
2009 Q1	-2.75
2009 Q2	12.96
2009 Q3	9.27
2009 Q4	10.23
2010 Q1	5.68
2010 Q2	-1.33
2010 Q3	9.02
2010 Q4	10.03
2011 Q1	3.03
2011 Q2	2.50
2011 Q3	-8.69
2011 Q4	-0.50
2012 Q1	6.27
2012 Q2	-2.90
2012 Q3	1.38
2012 Q4	4.41
2013 Q1	1.32
2013 Q2	-0.17

QUARTER ENDING	HORIZON RETURN
2013 Q3	3.43
2013 Q4	9.01
2014 Q1	3.71
2014 Q2	3.62
2014 Q3	1.95
2014 Q4	0.90
2015 Q1	3.07
2015 Q2	6.06
2015 Q3	-4.65
2015 Q4	5.12
2016 Q1	-0.75
2016 Q2	0.57
2016 Q3	2.66
2016 Q4	1.50
2017 Q1	3.79
2017 Q2	3.59
2017 Q3	4.16
2017 Q4	5.49
2018 Q1	2.24
2018 Q2	4.43
2018 Q3	1.42
2018 Q4	0.16
2019 Q1	5.70

AS OF MARCH 31, 2019

EX US GROWTH EQUITY

FUND INDEX DETAILS: HORIZON POOLED RETURN

Net to Limited Partners

MULTI-YEAR RETURNS			
YEARS	HORIZON RETURN (%)	YEARS	HORIZON RETURN (%)
1 Year	12.11	14 Years	11.43
2 Years	14.17	15 Years	11.72
3 Years	12.35	16 Years	12.22
4 Years	10.61	17 Years	11.25
5 Years	10.46	18 Years	10.77
6 Years	11.45	19 Years	9.90
7 Years	10.53	20 Years	10.29
8 Years	9.33	21 Years	10.14
9 Years	10.37	22 Years	9.93
10 Years	12.40	23 Years	9.96
11 Years	9.23	24 Years	9.89
12 Years	9.83	25 Years	9.85
13 Years	10.81		

ONE YEAR ROLLING RETURNS			
ONE YEAR ENDED	HORIZON RETURN (%)	ONE YEAR ENDED	HORIZON RETURN (%)
3/31/2019	12.11	3/31/2006	32.72
3/31/2018	16.35	3/31/2005	20.37
3/31/2017	8.77	3/31/2004	28.87
3/31/2016	5.48	3/31/2003	-15.25
3/31/2015	9.87	3/31/2002	-3.52
3/31/2014	16.97	3/31/2001	-15.78
3/31/2013	4.42	3/31/2000	30.54
3/31/2012	-0.71	3/31/1999	-1.05
3/31/2011	22.08	3/31/1998	-8.25
3/31/2010	43.41	3/31/1997	13.56
3/31/2009	-30.41	3/31/1996	-1.72
3/31/2008	22.63	3/31/1995	0.93
3/31/2007	41.48		

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 March 31, 2019, 2,167 private equity funds (buyout & growth equity only) from the years 1986 through 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:

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.

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.

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.

CA uses both the since inception internal rate of return and the end-to-end or horizon performance calculation in its benchmark reports:

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.

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

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.

Pooled return aggregates all cash flows and ending NAVs in a sample to calculate a dollar-weighted return. (minimum 3 funds)

Arithmetic mean averages the individual fund IRRs included in a vintage year. (minimum 3 funds)

Median is the middle fund IRR of the group of individual fund IRRs included in a vintage year. (minimum 5 funds)

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)

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)

Top 5 percent/ bottom 5 percent are the thresholds for the upper and lower 5th percentiles based on the individual fund IRRs included in a vintage year. (minimum 8 funds)

Standard deviation is a 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)

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.

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.

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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