

Lincoln Middle Market Index



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Introduction

The Lincoln Middle Market Index (“Lincoln MMI”) measures the changes in aggregate enterprise¹ fair value² of sponsored (i.e., private equity owned) middle market companies in the United States. While the middle market continues to emerge as a distinct asset class, there remains little visibility into the performance, specifically enterprise values, of the sponsored middle market. Lincoln International’s (“Lincoln”) Valuations & Opinions Group (“VOG”) compiles the Lincoln MMI based on the population of companies fair valued every quarter.

VOG collaborated with Professor Steven Kaplan and Professor Michael Minnis of University of Chicago Booth School of Business to create the index. Lincoln has created the first enterprise value index of privately owned middle market companies. Other indices assessing the U.S. middle market are either based on changes in accounting data, such as revenue and/or earnings, or based on survey data. The Lincoln MMI is the first index that is based on fair value accounting and valuation principles. Therefore, we believe the Lincoln MMI is comparable to major U.S. indices while being reflective of the U.S. middle market, a key driver of aggregate economic performance and U.S. employment, while offering timely insight to stakeholders and investors.

Source of Data

On a quarterly basis, VOG determines the enterprise value for over 2,400 portfolio companies from a wide assortment of private equity investors and non-bank lenders. The portfolio companies are required to report quarterly financial results as well as other important strategic, operating and financial information. VOG reviews this information in determining each portfolio company’s quarterly enterprise value.

In assessing enterprise value, VOG relies on commonly accepted valuation methodologies such as the market approach and income approach driven by each portfolio company’s historical performance, projections, and set of selected public companies. Thus each valuation analysis is unique and conforms to fair value accounting principles. The analyses are then vetted by auditors, fund managers and their board of directors, as well as other regulators. Upon concluding each quarterly valuation cycle, VOG aggregates the underlying financial performance and enterprise value data for analysis.

Sample Size and Criteria

Every quarter, VOG begins the valuation process by computing the enterprise value for each individual portfolio company based on its underlying (i.e., historical) financial performance, expected future performance, a customized set of selected public companies and precedent M&A transactions, as well as additional relevant strategic, operating and financial information.

The next step is to exclude: (a) companies with EBITDA greater than \$100.0 million (i.e., as they are no longer considered middle market companies); (b) non-operating companies such as passive real estate or specialty finance companies; (c) early stage venture businesses, and, (d) companies in financial distress.

Given the large number of companies valued on a quarterly basis, confidentiality of all company-specific information is maintained and, similarly, no company can bias the index.

The final step is to construct the index based on those companies meeting the above criteria (i.e., the index constituents).

¹ Enterprise value is the sum of the fair value of a company’s equity and interest-bearing debt net of excess cash; for purposes of this paper, references to enterprise value refer to enterprise fair value

² Under U.S. generally accepted accounting principles (specifically, ASC 820) fair value is defined as: “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.”

Index Calculation

Based on generally accepted accounting principles and business valuation standards, Lincoln determines the enterprise value of each company. The generalized formula for determining enterprise value of any company at any moment in time, whether applying the income approach, market approach and/or asset approach is as follows:

$$Company\ Value_t = \frac{Benefit\ Stream}{Discount\ Rate - Growth\ Rate}$$

Based on the concluded enterprise value of each constituent, the index value for any given period is calculated as follows:

$$Lincoln\ MMI_t = Lincoln\ MMI_{t-1} \times (1 + Lincoln\ MMI_\Delta)$$

Where:

Lincoln MMI_Δ is the quarterly change of the Lincoln MMI

Lincoln MMI₀ is the initial index value which is arbitrarily set to 10,000

The quarterly change in the Lincoln MMI would be the sum of the changes in enterprise value of each constituent multiplied by the weight of each constituent, or:

$$Lincoln\ MMI_\Delta = \sum_i \left(\frac{EV_{i,t}}{EV_{i,t-1}} - 1 \right) \times \frac{EV_{i,t-1}}{\sum_i EV_{i,t-1}}$$

Where:

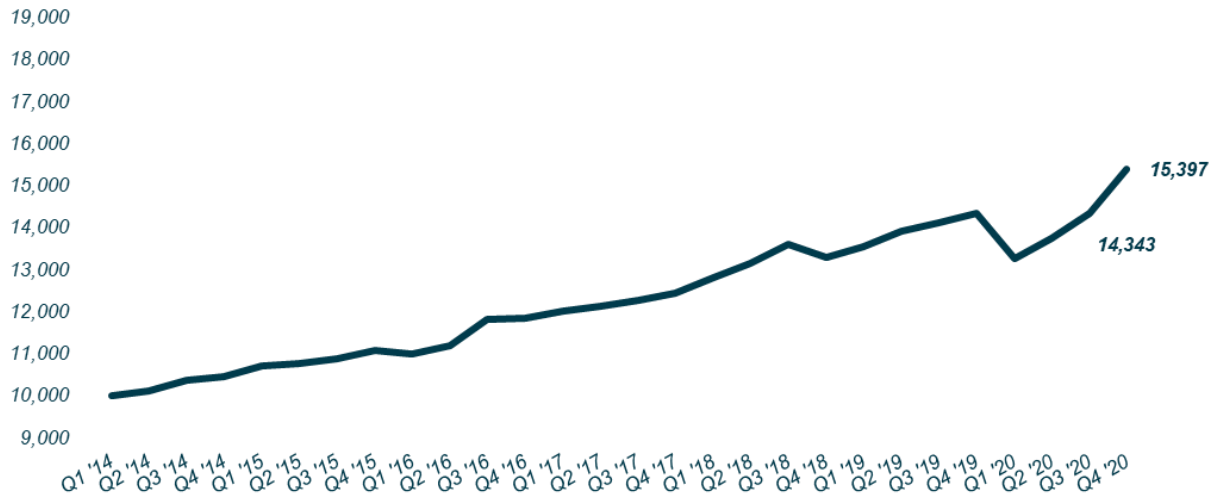
EV_i is the enterprise value of an index constituent *i*

This can also be simplified as follows:

$$Lincoln\ MMI_\Delta = \frac{\sum_i EV_{i,t}}{\sum_i EV_{i,t-1}} - 1$$

Simply, this is equal to the aggregate enterprise value of index constituents in a given quarter divided by the aggregate enterprise value of the companies in the prior quarter.

The results are as follows for the period March 30, 2014 through December 31, 2020:



Quarter	Quarterly Change	Lincoln MMI
Q1 '14	0.0%	10,000
Q2 '14	1.2%	10,115
Q3 '14	2.6%	10,380
Q4 '14	0.8%	10,468
Q1 '15	2.4%	10,722
Q2 '15	0.3%	10,757
Q3 '15	1.3%	10,892
Q4 '15	1.6%	11,070
Q1 '16	(0.7%)	10,996
Q2 '16	1.8%	11,193
Q3 '16	5.5%	11,813
Q4 '16	0.2%	11,839
Q1 '17	1.5%	12,020
Q2 '17	1.0%	12,145
Q3 '17	1.0%	12,268
Q4 '17	1.5%	12,455
Q1 '18	2.9%	12,821
Q2 '18	2.6%	13,150
Q3 '18	3.4%	13,598
Q4 '18	(2.2%)	13,292
Q1 '19	1.9%	13,544
Q2 '19	2.8%	13,921
Q3 '19	1.4%	14,114
Q4 '19	1.7%	14,355
Q1 '20	(7.5%)	13,277
Q2 '20	3.5%	13,744
Q3 '20	4.4%	14,343
Q4 '20	7.4%	15,397

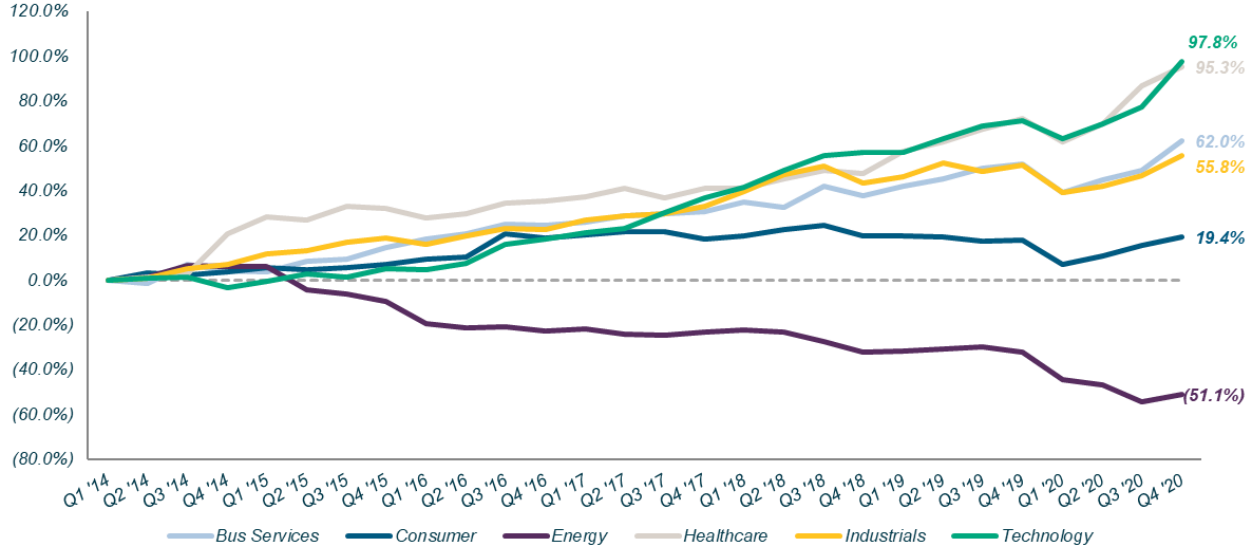
Additional Statistics

Quarter	Lincoln MMI	Constituents	Median EV	Concentration ⁽¹⁾
Q1 '14	10,000			
Q2 '14	10,115	228	170,102	9.5%
Q3 '14	10,380	224	169,017	8.8%
Q4 '14	10,468	225	176,623	7.8%
Q1 '15	10,722	217	173,915	8.7%
Q2 '15	10,757	251	168,028	7.7%
Q3 '15	10,892	255	177,550	6.9%
Q4 '15	11,070	269	170,807	7.5%
Q1 '16	10,996	293	166,151	7.7%
Q2 '16	11,193	303	181,064	7.1%
Q3 '16	11,813	333	195,300	6.5%
Q4 '16	11,839	334	190,663	6.5%
Q1 '17	12,020	349	174,506	6.2%
Q2 '17	12,145	359	181,906	6.2%
Q3 '17	12,268	339	186,709	6.6%
Q4 '17	12,455	352	201,025	6.1%
Q1 '18	12,821	355	199,790	6.1%
Q2 '18	13,150	387	216,354	6.0%
Q3 '18	13,598	406	186,699	6.8%
Q4 '18	13,292	431	176,370	6.6%
Q1 '19	13,544	446	197,512	5.5%
Q2 '19	13,921	470	219,072	5.4%
Q3 '19	14,114	456	237,765	5.8%
Q4 '19	14,355	472	233,087	5.7%
Q1 '20	13,277	509	189,961	5.3%
Q2 '20	13,744	514	221,755	5.5%
Q3 '20	14,343	512	229,881	5.7%
Q4 '20	15,397	571	251,200	4.9%

(1) Concentration reflects the percent of the Lincoln MMI comprised of the five largest index constituents

Results by Industry

Lincoln repeats its analysis for each industry so as to create industry sub-indices.



Academic Advisors

Professor Steven Kaplan is a Senior Advisor to Lincoln's Valuations and Opinions Group. He is the Neubauer Family Distinguished Service Professor of Entrepreneurship and Finance and Kessenich E.P. Faculty Director at the Polsky Center for Entrepreneurship and Innovation at the University of Chicago Booth School of Business. Among other courses, Professor Kaplan teaches advanced Master of Business Administration and executive courses in entrepreneurial finance and private equity, corporate finance, corporate governance and wealth management. Professor Kaplan conducts research on a wide array of issues in private equity, venture capital, corporate governance, boards of directors, mergers and acquisitions, and corporate finance. He has been a member of the Chicago Booth faculty since 1988.

Professor Kaplan serves on the board of Morningstar and several fund and company advisory boards. He is also a Research Associate at the National Bureau of Economic Research and an Associate Editor of the Journal of Financial Economics. Professor Kaplan received a Bachelor of Arts, summa cum laude, in applied mathematics and economics from Harvard College and earned a Doctor of Philosophy in business economics from Harvard University.

Professor Michael Minnis is a Senior Advisor to Lincoln's Valuations and Opinions Group. He is a Professor of Accounting at the University of Chicago Booth School of Business, where he researches the role of accounting information in allocating investment efficiently by both managers and capital providers. His recent research focuses on understanding the role of privately held companies in the U.S. economy and how these firms use financial reporting to access, deploy and manage capital. He particularly enjoys identifying unique data and methods to empirically examine issues in a novel way.

In January 2018, Professor Minnis became a member of the Private Company Council, the primary advisory council to the Financial Accounting Standards Board (FASB) on private company issues. Professor Minnis received his Ph.D. from the University of Michigan and his B.S. from the University of Illinois, where he graduated with Highest Honors.

About Lincoln International

Lincoln International is a trusted investment banking advisor to business owners and senior executives of leading private equity firms and public and privately held companies around the world. Our advisory services include mergers and acquisitions, debt advisory, growth equity and restructuring for the mid-market. We also provide valuations and fairness opinions and joint ventures advisory services. As one tightly integrated team of more than 600 professionals across 16 countries, we offer an unobstructed perspective, backed by superb execution and a deep commitment to client success. With extensive industry knowledge and relationships, timely market intelligence and strategic insights, we forge deep, productive client relationships that endure for decades. Connect with us to learn more at www.lincolninternational.com.

VOG is a leading independent valuation advisor to managers of illiquid assets and lenders to alternative assets funds. VOG specializes in the valuation of illiquid debt, equity and derivative securities. Additionally, they provide independent fairness, solvency and other transaction opinions for a variety of corporate transactions for both public and private companies.

VOG is widely recognized for leveraging Lincoln International's "real world" transaction experience from its M&A and debt advisory practices to assist its clients in the determination of fair value. Lincoln International's highly skilled professionals have extensive experience in determining and supporting fair value measurements for traditional and complex securities.

Important Disclosure

The Lincoln Middle Market Index is an informational indicator only, and does not constitute investment advice or an offer to sell or a solicitation to buy any security. It is not possible to directly invest in the Lincoln Middle Market Index. Some of the statements above contain opinions based upon certain assumptions regarding the data used to create the Lincoln Middle Market Index, and these opinions and assumptions may prove incorrect. Actual results could vary materially from those implied or expressed in such statements for any reason. The Lincoln Middle Market Index has been created on the basis of information provided by third-party sources that are believed to be reliable, but Lincoln International has not conducted an independent verification of such information. Lincoln International makes no warranty or representation as to the accuracy or completeness of such third-party information.