Lincoln Middle Market Index

Lincoln
INTERNATIONAL

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Introduction

The Lincoln Middle Market Index ("Lincoln MMI") measures the changes in aggregate enterprise[1] fair value[2] 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 1,300 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.

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[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."

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).

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 MMI_0 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:

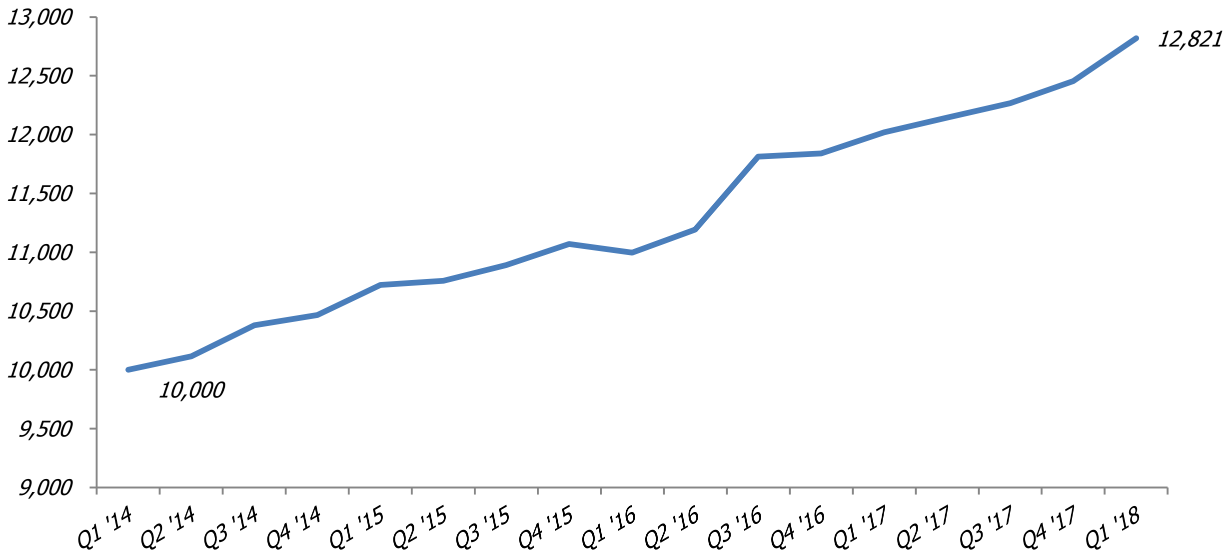
EV_i is the enterprise value of an index constituent i

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 March 31, 2018:



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

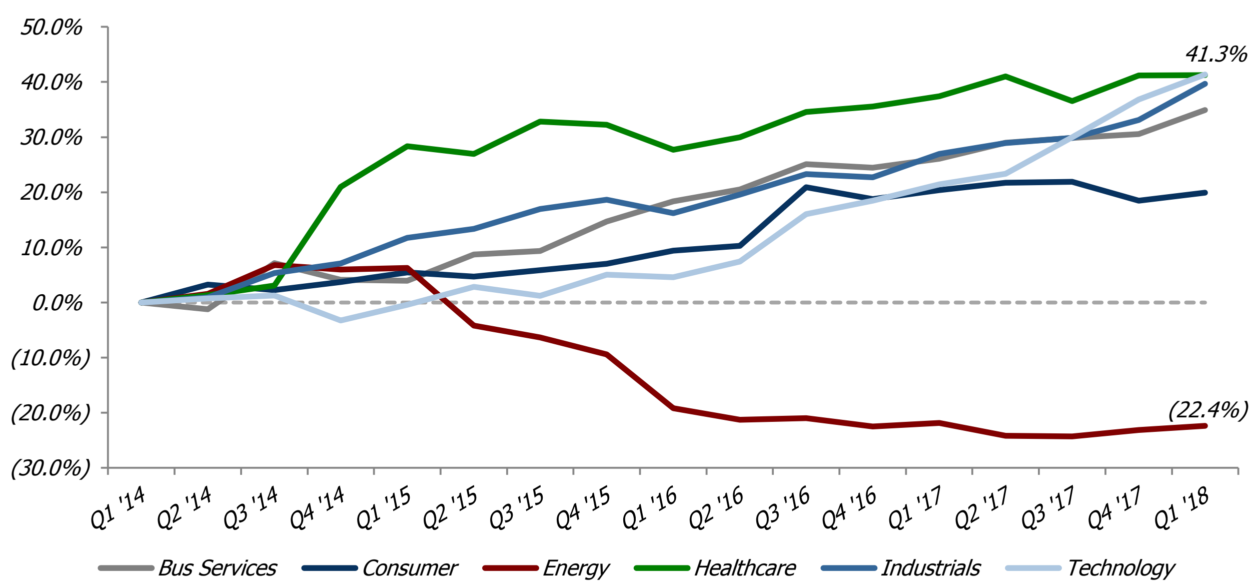
Additional Statistics

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%

(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 the Neubauer Distinguished Service Professor of Entrepreneurship and Finance at the University of Chicago Booth School of Business. Professor Kaplan conducts research on issues in private equity, venture capital, entrepreneurial finance, corporate governance and corporate finance. He has published papers in a number of academic and business journals. Kaplan is a research associate at the National Bureau of Economic Research and an associate editor of the Journal of Financial Economics. Kaplan teaches advanced MBA and executive courses in entrepreneurial finance and private equity, corporate finance, corporate governance, and wealth management. BusinessWeek named him one of the top 12 business school teachers in the country. Kaplan serves on the boards of Morningstar, Zayo Group and the Illinois Venture Capital Association. He has been a member of the faculty since 1988.

Professor Kaplan received his A.B., summa cum laude, in Applied Mathematics and Economics from Harvard College and earned a Ph.D. in Business Economics from Harvard University.

Professor Michael Minnis is an Associate Professor of Accounting at the University of Chicago Booth School of Business. Professor Minnis studies the role of accounting information in allocating investment efficiently by both management and capital providers, the use of financial reporting in mitigating information opacity issues of privately-held firms, and the interplay within management in the production and use of financial information. His research includes identifying unique data and methods to empirically examine issues in a novel way.

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 specializes in merger and acquisition advisory services, debt advisory services, private capital raising and restructuring advice on mid-market transactions. Lincoln International also provides fairness opinions, valuations and joint ventures and advisory services on a wide range of transaction sizes. With nineteen offices in the Americas, Asia and Europe, Lincoln International has strong local knowledge and contacts in key global economies. The firm provides clients with senior-level attention, in-depth industry expertise and integrated resources. By being focused and independent, Lincoln International serves its clients without conflicts of interest. More information about Lincoln International can be obtained 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 in the valuation of illiquid debt, equity and derivative securities. Additionally, they provide independent fairness and other transaction opinions for a variety of corporate transactions for both public and private companies.

Lincoln International's highly skilled professionals have extensive experience in determining and supporting fair value measurements for traditional and complex securities. They are 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.

Important Disclosure

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