

Lincoln Private Market Index



2023 November 3

Introduction

The Lincoln Private Market Index (“Lincoln PMI”), formerly known as the Lincoln Middle Market Index, measures the changes in aggregate enterprise¹ fair value² of sponsored (i.e., private equity owned) private companies in the United States. While the private market continues to emerge as a distinct asset class, there remains little visibility into the performance, specifically enterprise values, of the sponsored private market. Lincoln International’s (“Lincoln”) Valuations & Opinions Group (“VOG”) compiles the Lincoln PMI 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 companies. Other indices assessing U.S. private companies are either based on changes in accounting data, such as revenue and/or earnings, or based on survey data. The Lincoln PMI is the first index that is based on fair value accounting and valuation principles. Therefore, we believe the Lincoln PMI is comparable to major U.S. indices while being reflective of U.S. private companies, 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 4,500+ 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 \$250.0 million; (b) non-operating companies such as passive real estate or specialty finance companies; (c) early stage venture businesses, (d) companies in financial distress, and (e) public companies.

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

$$Lincoln\ PMI_t = Lincoln\ PMI_{t-1} \times (1 + Lincoln\ PMI_\Delta)$$

Where:

Lincoln PMI_Δ is the quarterly change of the Lincoln PMI

Lincoln PMI₀ is the initial index value which is arbitrarily set to 10,000

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

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

Where:

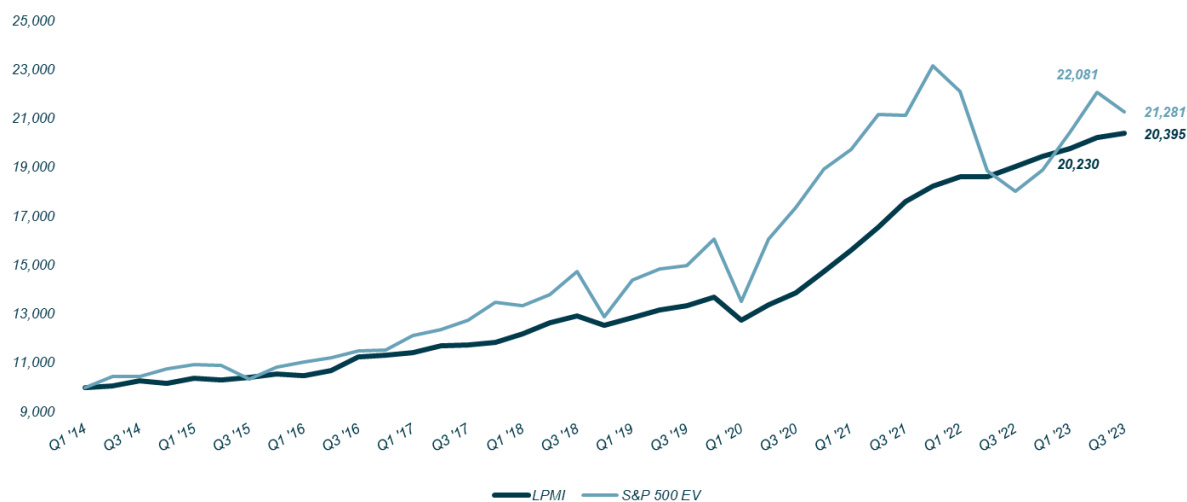
EV_i is the enterprise value of an index constituent *i*

This can also be simplified as follows:

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

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 2014 March 30 through 2023 September 30:



Quarter	Quarterly Change	Lincoln PMI
Q1 '14	NA	10,000
Q2 '14	0.4%	10,044
Q3 '14	2.3%	10,274
Q4 '14	(1.1%)	10,160
Q1 '15	2.1%	10,371
Q2 '15	(0.6%)	10,307
Q3 '15	1.0%	10,415
Q4 '15	1.3%	10,551
Q1 '16	(0.6%)	10,488
Q2 '16	1.9%	10,684
Q3 '16	5.1%	11,232
Q4 '16	0.6%	11,303
Q1 '17	1.2%	11,436
Q2 '17	2.2%	11,693
Q3 '17	0.3%	11,729
Q4 '17	1.0%	11,847
Q1 '18	3.0%	12,206
Q2 '18	3.6%	12,650
Q3 '18	2.1%	12,912
Q4 '18	(2.8%)	12,549
Q1 '19	2.4%	12,849
Q2 '19	2.4%	13,160
Q3 '19	1.4%	13,349
Q4 '19	2.6%	13,701
Q1 '20	(6.8%)	12,768
Q2 '20	4.7%	13,364
Q3 '20	3.8%	13,877
Q4 '20	6.3%	14,750
Q1 '21	5.9%	15,613
Q2 '21	6.1%	16,570
Q3 '21	6.2%	17,603
Q4 '21	3.6%	18,234
Q1 '22	2.2%	18,634
Q2 '22	(0.1%)	18,618
Q3 '22	2.2%	19,031
Q4 '22	2.2%	19,454
Q1 '23	1.7%	19,779
Q2 '23	2.3%	20,225
Q3 '23	0.8%	20,395

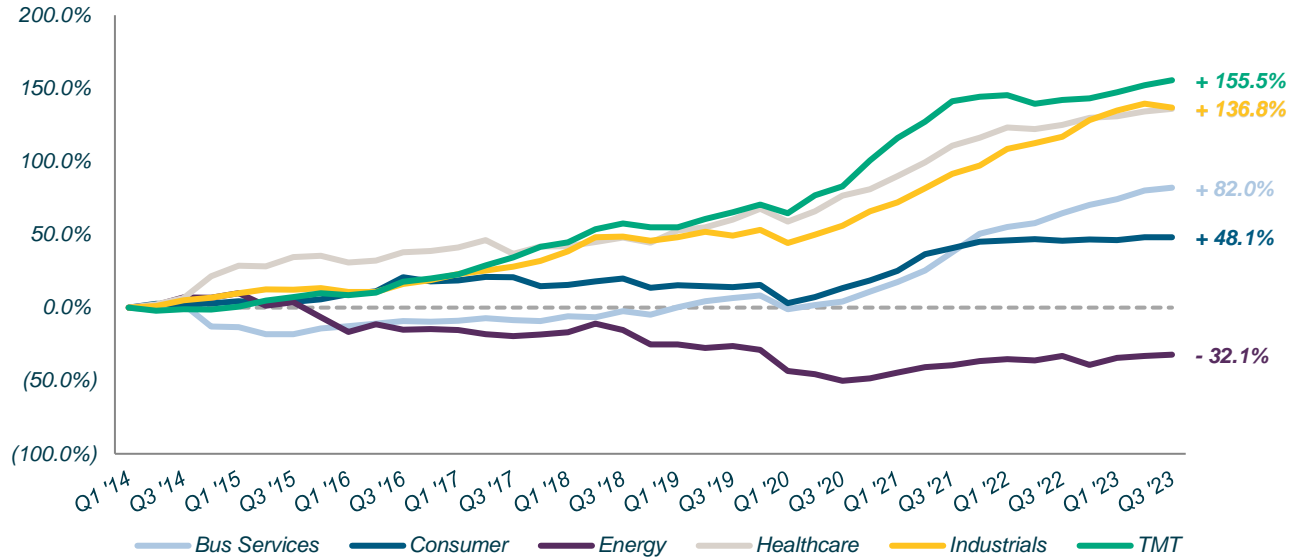
Additional Statistics

Quarter	Lincoln PMI	Constituents	Median EV	Concentration ⁽¹⁾
Q1 '14	10,000	NA	NA	NA
Q2 '14	10,044	235	173,333	12.5%
Q3 '14	10,274	233	175,000	12.7%
Q4 '14	10,160	234	186,954	12.9%
Q1 '15	10,371	221	177,496	11.1%
Q2 '15	10,307	264	190,062	11.4%
Q3 '15	10,415	268	189,544	8.6%
Q4 '15	10,551	281	185,280	9.0%
Q1 '16	10,488	301	169,596	7.7%
Q2 '16	10,684	321	200,286	8.1%
Q3 '16	11,232	347	224,992	8.2%
Q4 '16	11,303	345	203,363	9.3%
Q1 '17	11,436	366	192,012	7.5%
Q2 '17	11,693	372	197,252	9.8%
Q3 '17	11,729	351	205,000	8.4%
Q4 '17	11,847	362	220,580	7.9%
Q1 '18	12,206	370	219,114	6.9%
Q2 '18	12,650	411	241,737	6.3%
Q3 '18	12,912	434	216,021	7.2%
Q4 '18	12,549	462	202,309	6.9%
Q1 '19	12,849	474	226,195	6.9%
Q2 '19	13,160	504	260,718	6.3%
Q3 '19	13,349	493	259,109	7.0%
Q4 '19	13,701	508	267,765	6.4%
Q1 '20	12,768	557	224,909	6.7%
Q2 '20	13,364	576	275,193	5.4%
Q3 '20	13,877	573	303,564	5.4%
Q4 '20	14,750	641	309,150	4.8%
Q1 '21	15,613	547	271,891	7.0%
Q2 '21	16,570	683	323,400	5.2%
Q3 '21	17,603	773	355,300	5.4%
Q4 '21	18,234	684	373,749	5.1%
Q1 '22	18,634	487	370,154	6.3%
Q2 '22	18,618	791	389,795	4.4%
Q3 '22	19,031	1,042	384,685	3.6%
Q4 '22	19,454	1,105	399,105	4.5%
Q1 '23	19,779	1,132	396,816	4.2%
Q2 '23	20,225	1,391	420,930	3.3%
Q3 '23	20,395	1,469	420,893	3.0%

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

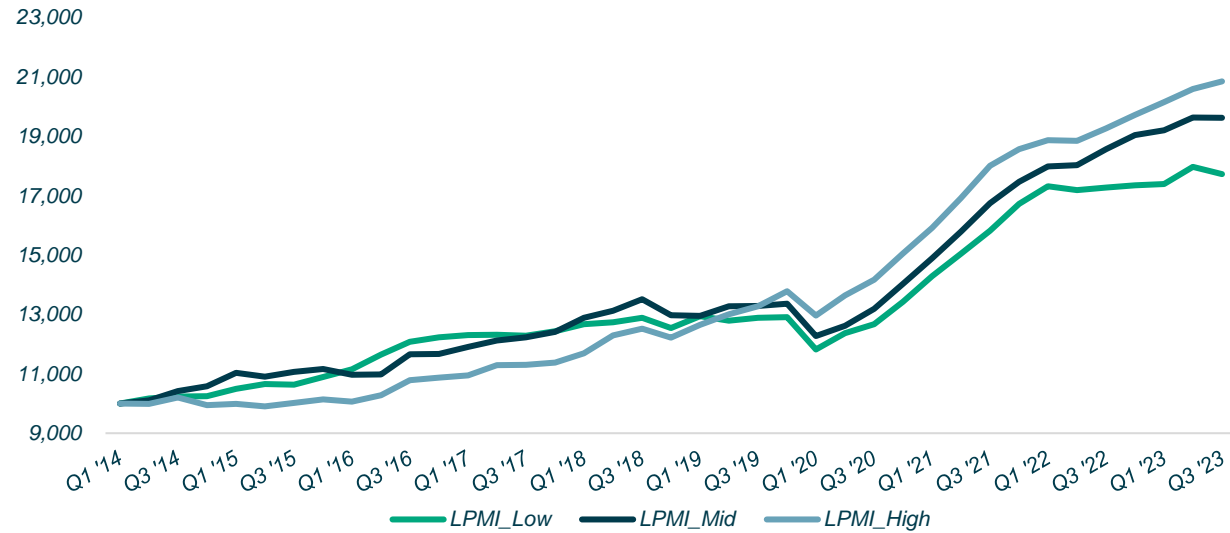
Results by Industry

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



Results by Size

Lincoln repeats its analysis for three size categories (-\$5 million to \$20 million, \$20 million to \$50 million, and \$50 million to \$250 million) 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

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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.

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