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September 2018 Logistics Manager's Index Report®

LMI® at 70.2%
Growth is INCREASING AT AN INCREASING RATE for: Warehousing Capacity, Warehousing Utilization, Warehousing Price and Transportation Utilization.
Growth is INCREASING AT A DECREASING RATE for: Inventory Levels, Inventory Cost, and Transportation Price.
Transportation Capacity is DECREASING.

(Fort Collins, Colorado) — According to a sample of North American logistics executives, economic activity across the logistics sector continued to expand through September 2018. While the rate of growth is down for some sections of the industry, we register a record-high

rate of growth for Warehouse Prices for the fourth consecutive period. This is reflective of the strain on current logistics capacity, as supply continues to struggle to keep up with demand.

The report was issued today by researchers at Arizona State University, Colorado State University, Rochester Institute of Technology, Rutgers University, and the University of Nevada, Reno, and in conjunction with the Council of Supply Chain Management Professionals (CSCMP). Throughout its two year history, the LMI® has primarily been published once every two months. However, thanks to rising response rates and increasing interest, it will now be published once every month. Thank you to those who regularly respond to this report for making this possible.

Results Overview

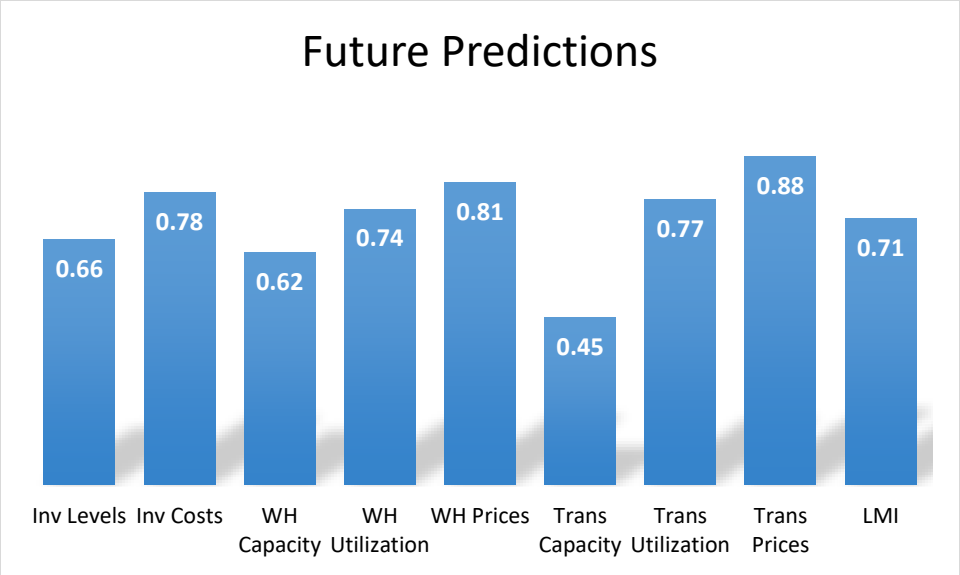
The LMI score is a combination eight unique other components that make up the logistics industry, including: inventory levels and costs, warehousing capacity, utilization, and prices, and transportation capacity, utilization, and prices. The LMI is calculated using a diffusion index, in which any reading above 50 percent indicates that logistics is expanding; a reading below 50 percent is indicative of a shrinking logistics industry. The latest results of the LMI and an overview of the findings of the first two years of the index were recently presented at CSCMP's annual conference on Tuesday, October 2nd.

The September 2018 overall LMI® index registered 70.22 percent which is up from the July/August 2018 reading of 68.79, and marks only the second time the overall index score has risen above 70.0 points. This increase was primarily driven by increasing rates of growth in both Warehousing and Transportation Utilization, as well as the fourth consecutive record high reading in Warehousing Prices. The overall index score of 70.22 suggests a robust rate of growth in the logistics industry and is up 4 points year-over-year.

Throughout 2018, the rate of growth for Transportation Prices have far outpaced the rate of growth for Warehousing Prices. The difference in growth rate between the two is at a 16 month low, with the disparity the lowest it's been since April/May 2017. Rate of growth in Price for both Transportation and Warehousing has been high throughout 2018. While this is partially due to changing patterns of consumer demand, analysis also suggests that regulatory changes have contributed to the rate of expansion in the logistics industry. Seven of the eight metrics composing the LMI® have moved significantly since the implementation of the Trump Administration's tax cut in January of 2018. We do not make any claims of causality and also acknowledge that many other factors beyond the tax cut may be at play. However, there is a clear, statistically significant difference across all of the metrics except Warehousing Capacity, were we only measure moderately significant change. This analysis is based on over 1500 unique observations, with a high level of statistical power. We have not yet measured any material difference stemming from the implementation of new tariffs, but we will continue to monitor their effect moving forward. The changes in the eight LMI metrics from before and after the tax cut are presented in the Table below:

	Inv. Levels	Inv. Cost	W.H. Capacity	W.H. Utilization	W.H. Price	Trans. Capacity	Trans. Utilization	Trans. Price
Pre-Tax Cut	62%	68%	56%	71%	70%	50%	66%	73%
Post-Tax Cut	68%	78%	53%	74%	79%	35%	73%	93%
Statistically Different?	YES (p = .004)	YES (p < 0.001)	NO (p = 0.059)	YES (p = 0.05)	YES (p < 0.001)	YES (p < 0.001)	YES (p < 0.001)	YES (p < 0.001)
Post-Tax/Pre Tax Difference	6%	9%	-3%	3%	9%	-14%	7%	21%

Both Warehousing and Transportation Capacity registered their highest index scores of 2018 in the September reading. While Transportation Capacity is still decreasing, it is at significantly slower rate than it has been at over the rest of 2018. This may indicate that more capacity is coming online to compensate for the mismatch between supply and demand for logistics capacity that we have been reading throughout the previous 12 months. The rate of growth in Inventory Levels has slowed slightly as well. If firms were adding product at a slower rate in September, it may have slightly lessened the need for additional Transportation and Warehousing Capacity. Future predictions indicate that respondents predict an increase in available Warehousing Capacity over the next 12 months, but make no such prediction for Transportation Capacity. This may indicate that relief is on the way for in regards to storing inventory, but not for moving it. It is worth noting that over the past year LMI® respondents have been very accurate in their future predictions. Future predictions for LMI components 12 months from now are displayed below:



The index scores for each of the eight components of the Logistics Managers' Index, as well as the overall index score, are presented in the table below. All three metrics regarding Warehousing: Utilization, Capacity, and Pricing, and increasing at increasing rates. The same is true for Transportation Utilization. Inventory Levels, Inventory Costs, and Transportation Prices are growing, but at lower rates than in July/August. Once again, Transportation Capacity is the only metric measured in this index that is currently contracting. The overall LMI® index score is up.

LOGISTICS AT A GLANCE

Index	September 2018 Index	July/August 2018 Index	Month-Over-Month Change	Projected Direction	Rate of Change
LMI®	70.22	68.79	+1.4	Growing	Increasing
Inventory Levels	65.69	67.27	-1.6	Growing	Decreasing
Inventory Costs	78.78	79.02	-0.2	Growing	Decreasing
Warehousing Capacity	56.64	53.50	+3.1	Growing	Increasing
Warehousing Utilization	73.08	69.90	+3.2	Growing	Increasing
Warehousing Prices	80.51	80.38	+0.1	Growing	Increasing
Transportation Capacity	41.03	38.44	+2.6	Contracting	Decreasing
Transportation Utilization	76.19	69.10	+7.1	Growing	Increasing
Transportation Prices	89.90	92.68	-2.9	Growing	Decreasing

Historic Logistics Managers' Index Scores

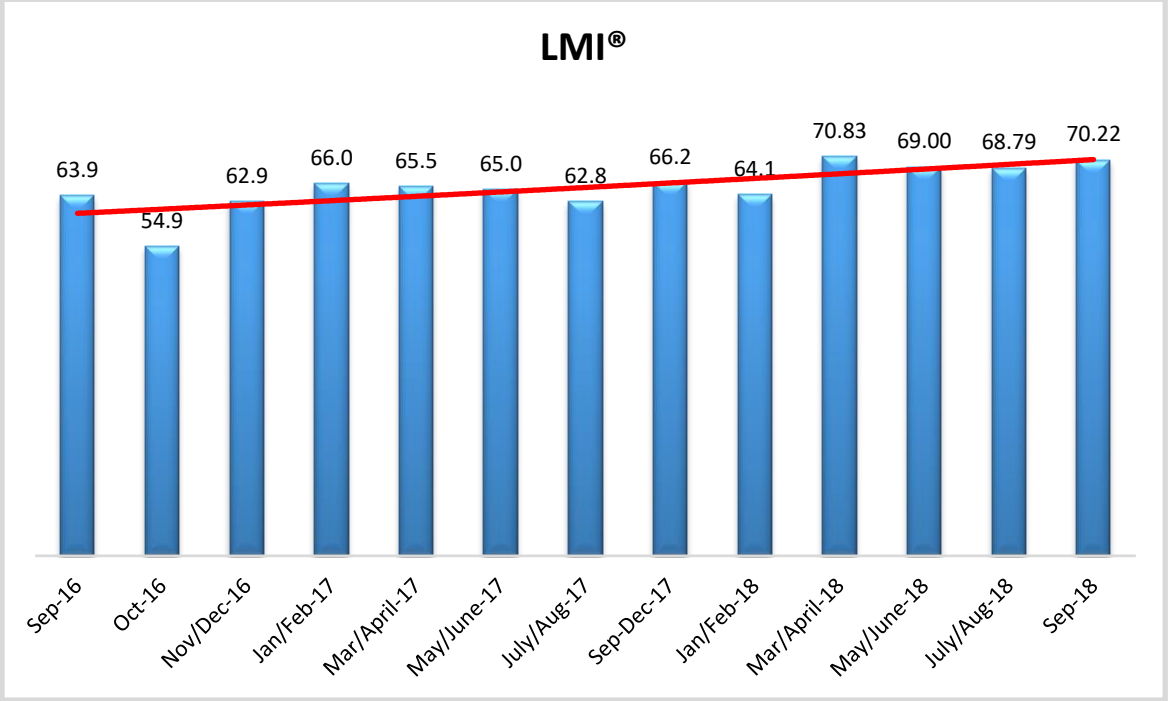
This period's along with the prior eleven readings of the LMI are presented table below:

Month	***LMI***	Average for previous readings – 65.4 High – 70.8 Low – 54.9 Std. Dev – 3.98
September 2018	70.22	
July/August '18	68.8	
May/June '18	69.0	
March/April '18	70.8	
January/February'18	64.1	
September-December '17	66.18	
July/August '17	62.78	
July/August '17	65.0	
Mar/April '17	65.5	
Jan/Feb '17	66.0	
Nov/Dec '16	62.9	
Oct '16	54.9	
Sep '16	63.9	

LMI®

The overall LMI index is 70.22 in the September 2018 reading. This is up slightly from the rate of growth in July/August 2018, when the overall index read in at 69.79. The current reading marks only the second time the overall index has registered an index score above 70.0. It is well above 65.4, which is the average LMI® over the first 24 months of the index.

This indicates that the logistics industry continues to grow at an increasingly rapid pace. As mentioned above, this growth is primarily driven by significant rates of growth across all three Warehousing metrics (including the fourth consecutive index-high in Warehousing Price), Transportation Utilization, and the continuously high rates of growth in Transportation Price. As mentioned above, the LMI is calculated using a diffusion index, in which any reading above 50 percent indicates that logistics is expanding; a reading below 50 percent is indicative of a shrinking logistics industry.



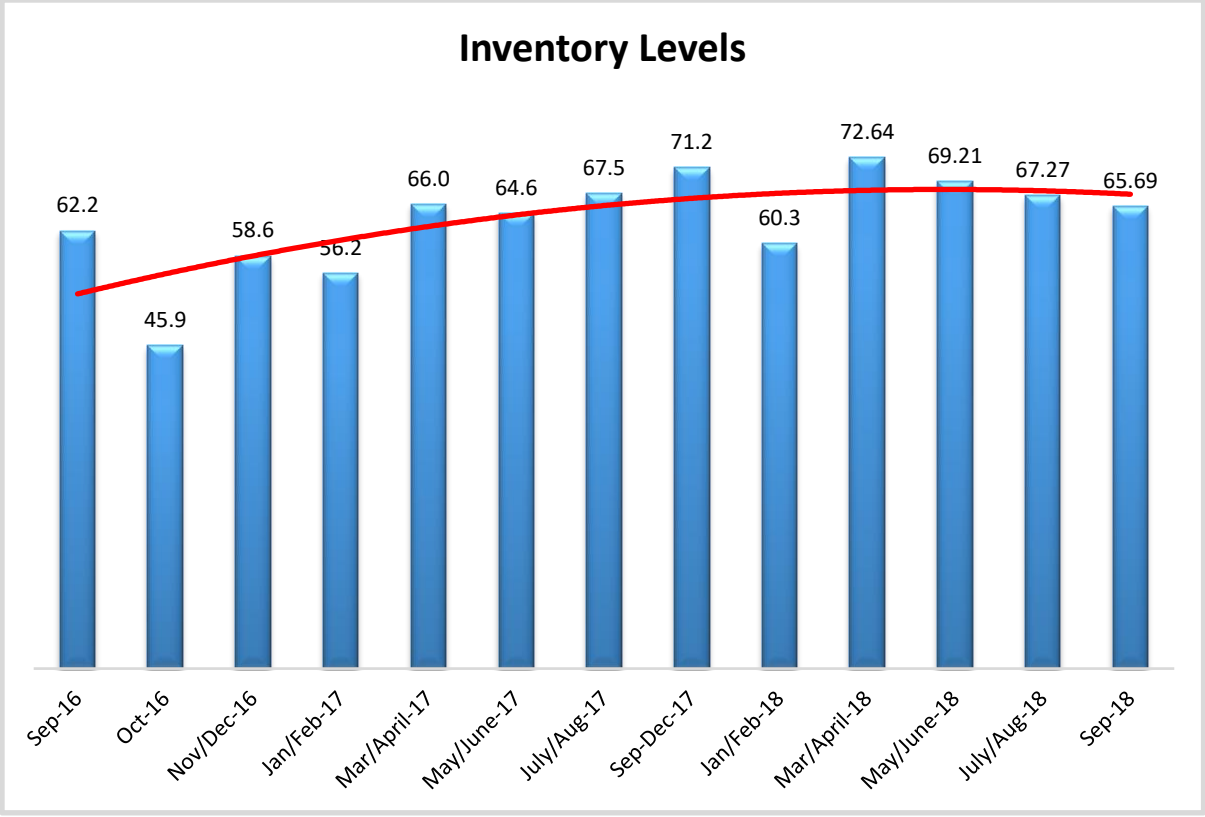
Every reading since the beginning of this project in September of 2016 has indicated growth in the logistics industry. The September 2018 reading continues that trend, with the overall index score reading at 70.22, 20.22 points above the growth/contraction threshold of 50.0. Respondents appear to be optimistic that this trend will continue, predicting an overall LMI® Index score of 71.0 12 months from now in September 2019. Preliminary analysis suggesting elements of the LMI® - Transportation Prices and Inventory Levels in particular –are leading indicators of future movement in the U.S. economy. However, more index readings are required to officially establish these relationships.

Inventory Levels

The Inventory Level index is 65.69, which indicates that inventory levels are continuing to rise. Because this is well above 50, inventory levels are still growing, but the rate of growth is slowing, and this is the fourth consecutive month of slightly lower values. This value is 5.5 points below the level a year ago at this time, of 71.2. Last month's value was equal to the previous years, and the two most recent reports, we saw levels significantly higher than the previous year. It would appear that the fast growth we were seeing before has slowed to a lower growth rate, but still significant.

The current reading of 65.69 is still above the all-time average value for this metric, which is 63.5. The recent, short-term trend is a slight decrease, but the long-term trendline shows that values are expected to stay in the growth region for the foreseeable future.

When asked to predict what will conditions will be like 12 months from now, the average value is 65.8, indicating inventory levels are expected to be higher than current levels.

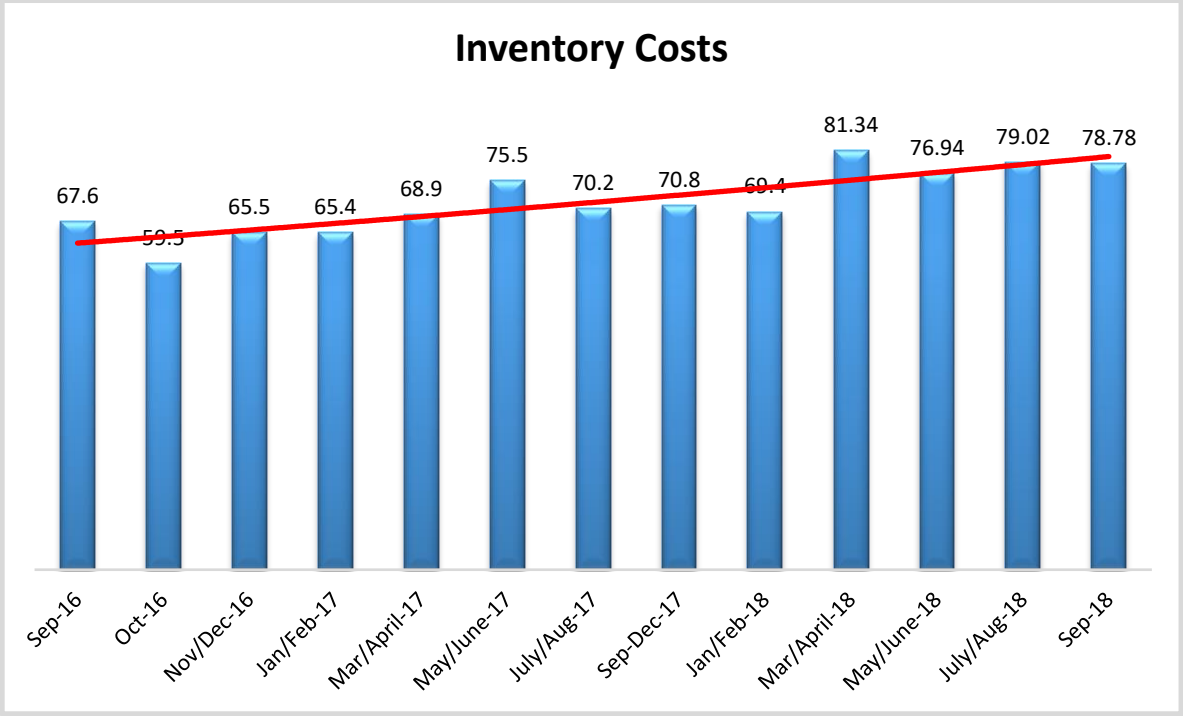


Inventory Costs

Given the high levels of inventory growth, it is not surprising that inventory costs are near their all-time highest values. The Inventory Cost index value is 78.78, and any value above 50 indicates growth, and respondents say inventory costs have continued to climb, significantly. This value is down just a little less than 2.5 points from the all-time high in March/April of 2018. The current value of 78.78 is 7.0 points higher than the value last year at this time. The growth rate may have decreased slightly in the last three periods from the all-time high, but only slightly. The current value is the third-highest in the history of the index, so costs have continued to increase significantly.

Because costs have stayed above 50 consistently, costs are expected to continue to grow, and the trendline shows that cost growth is increasing over time, so if current trends continue, inventory costs may continue to grow for the indefinite future.

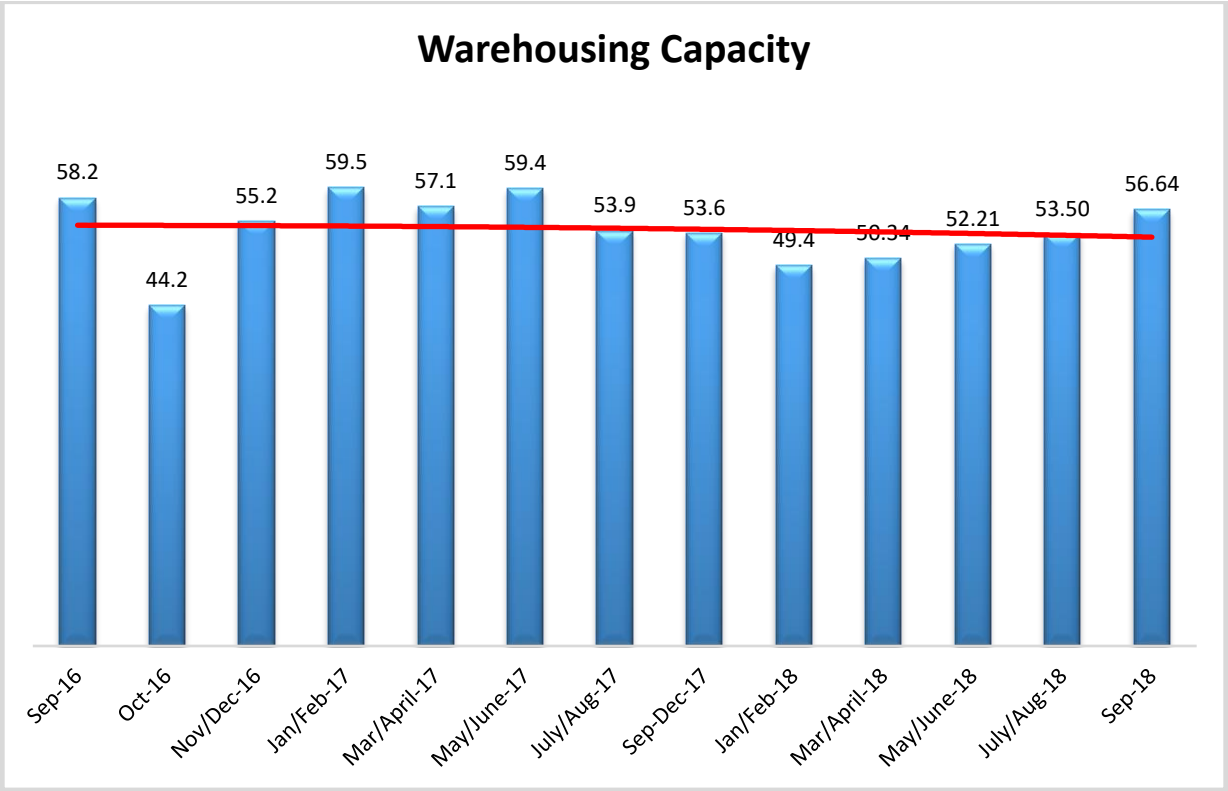
Taking this graph and the previous graph of inventory values together, it is somewhat surprising that cost growth seems to be consistently stable at high levels, while the growth of inventory levels seems to have slowed. This could be related to the fact that warehousing capacity is increasing only slightly. Because inventory levels are continuing to increase, and warehousing capacity is only increasing slightly, it seems quite likely costs will continue to rise.Respondents agree with this analysis. When asked about what they expect inventory costs to be like 12 months from now, the index value is 78.4.



Warehousing Capacity

The Warehousing Capacity Index registered 56.64 percent in September 2018. This represents over a 3 percentage point increase from the July-August reading of 53.50 and is still down from the Jan/Feb 2017 high of 59.5. This is the fifth highest reading ever recorded in the LMI®. It would appear that warehousing capacity is continuing its rise from the yearly low of 49.4 in the January-February 2018 reading, fostering stronger growth in this space. It is interesting that even with this increase in the rate of growth in Capacity, that Warehousing Price has registered an all-time index high, as these two metrics often move in opposing directions.

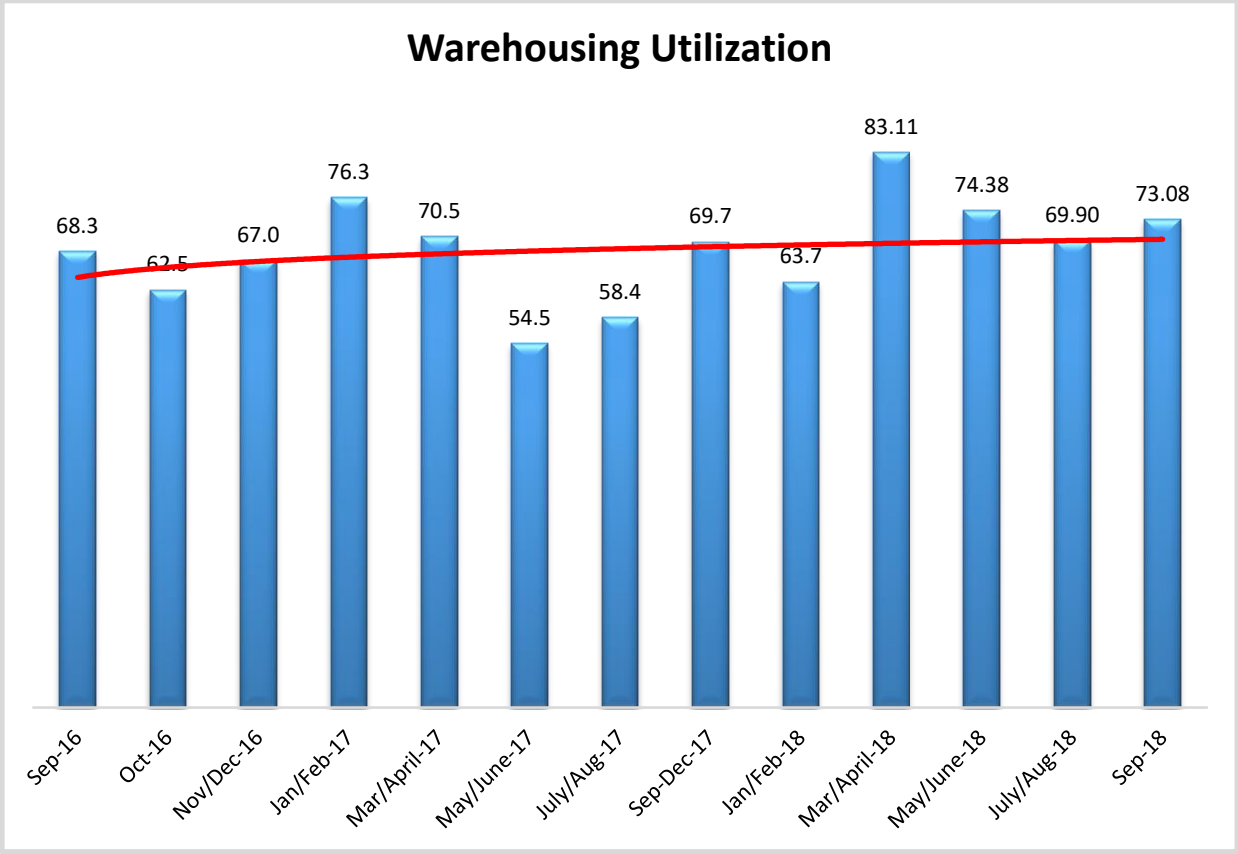
Looking forward at the next 12 months, the predicted Warehousing Capacity index is 57.9. This indicates that firms are hopeful that more warehouse space will become available over the next year, but not at a significantly high rate.



Warehousing Utilization

The Warehousing Utilization Index registered 73.08 percent in September 2018. This is a rather sharp 3.18 percentage point increase from the July-August reading of 69.9. This is the fourth highest level of Warehousing Utilization overall, and is up 18.58 points from the all-time low of 54.5 in June 2017. The increase from the previous period, coupled with the increased capacity noted above might suggest that more availability is coming on the market given the increased demand for such space.

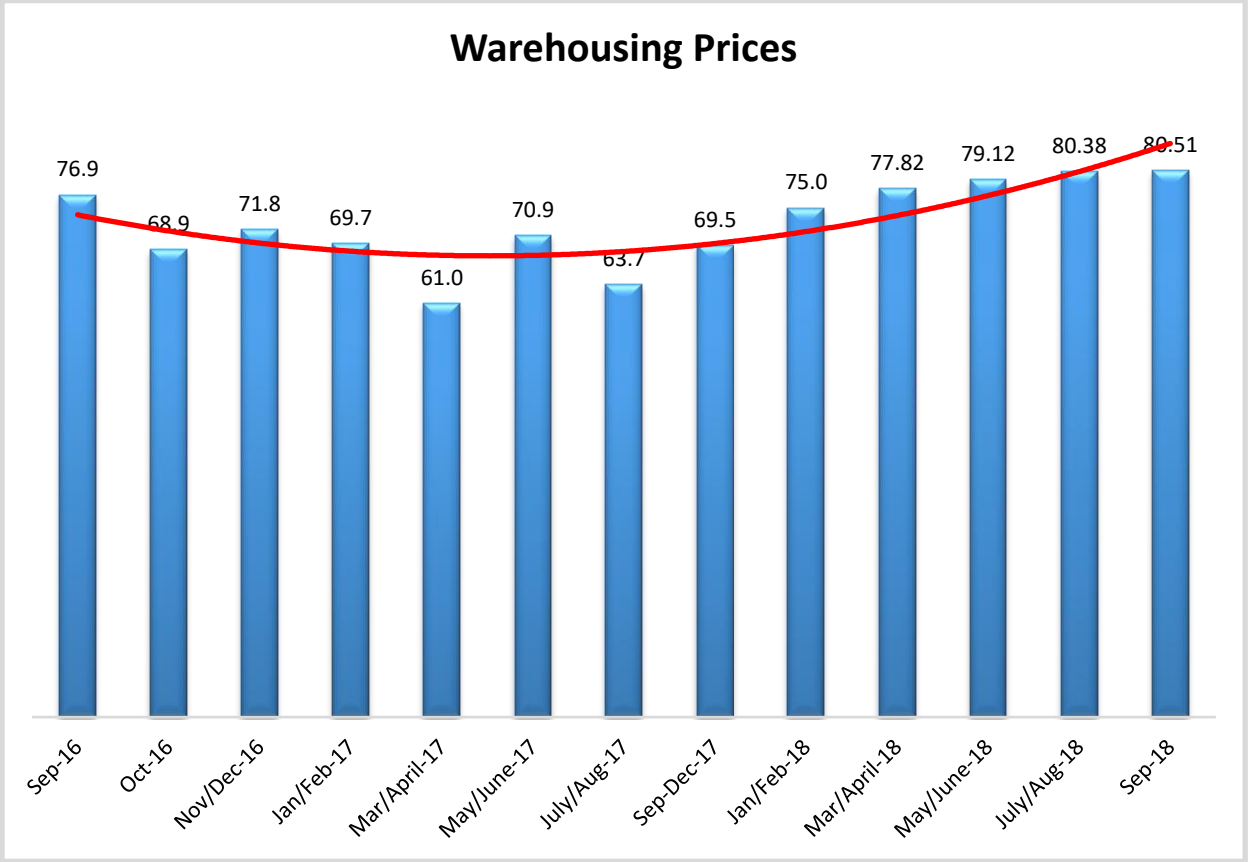
Looking forward at the next 12 months, the predicted Warehousing Utilization index is 70.5, indicating that firms anticipate utilizing existing warehouse capacity consistently over the next year.



Warehousing Prices

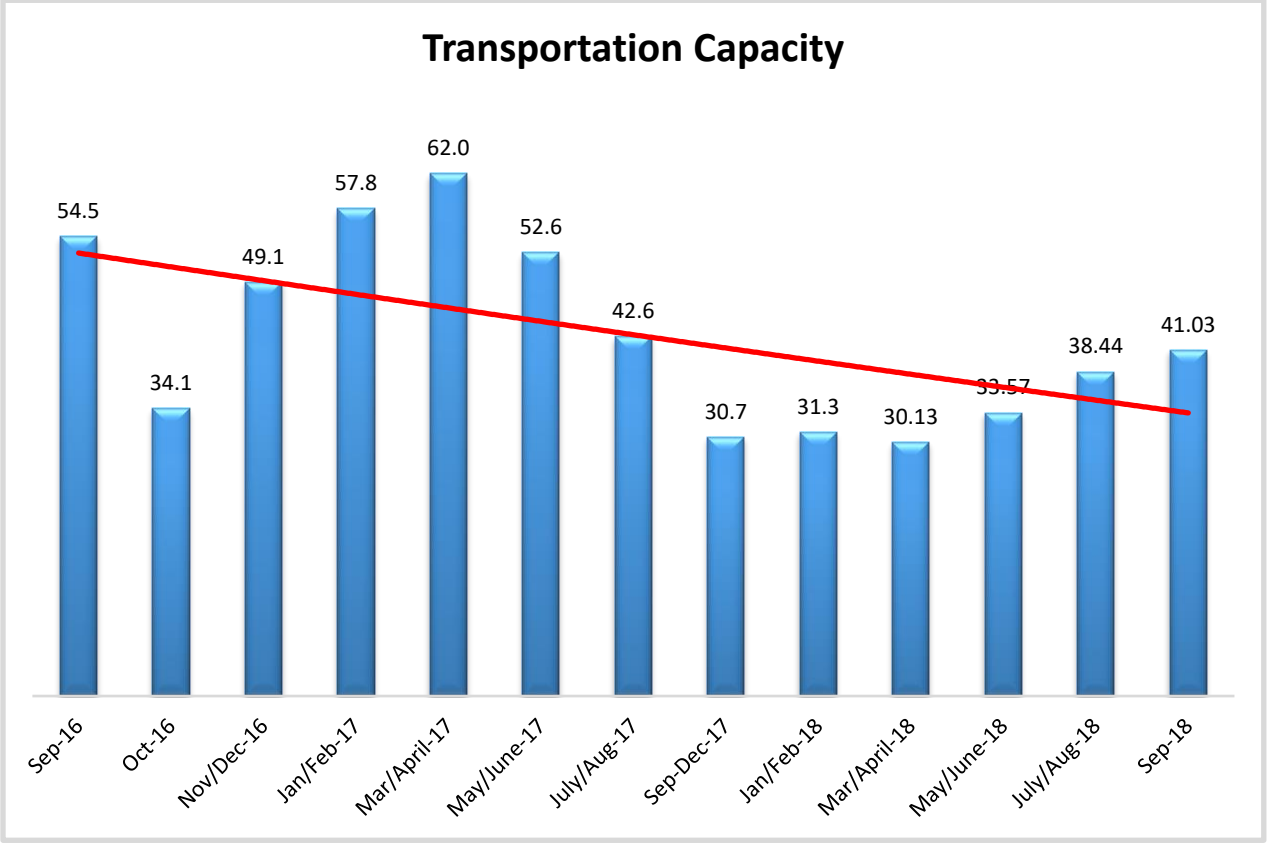
The Warehousing Prices Index registered 80.51 percent in September 2018. This is a slight increase of .13 percentage points from the July-September 2018 reading of 80.38. The reading of 80.51 is the highest value for the Warehousing Prices Index to date, and this is the fourth month in a row with a historically high warehousing price value. As mentioned above, the index scores for all three Warehousing metrics are up in this reading of the LMI®.

Looking forward at the next 12 months, the predicted Warehousing Prices index is 77.8, indicating little relief from increasing warehousing prices.



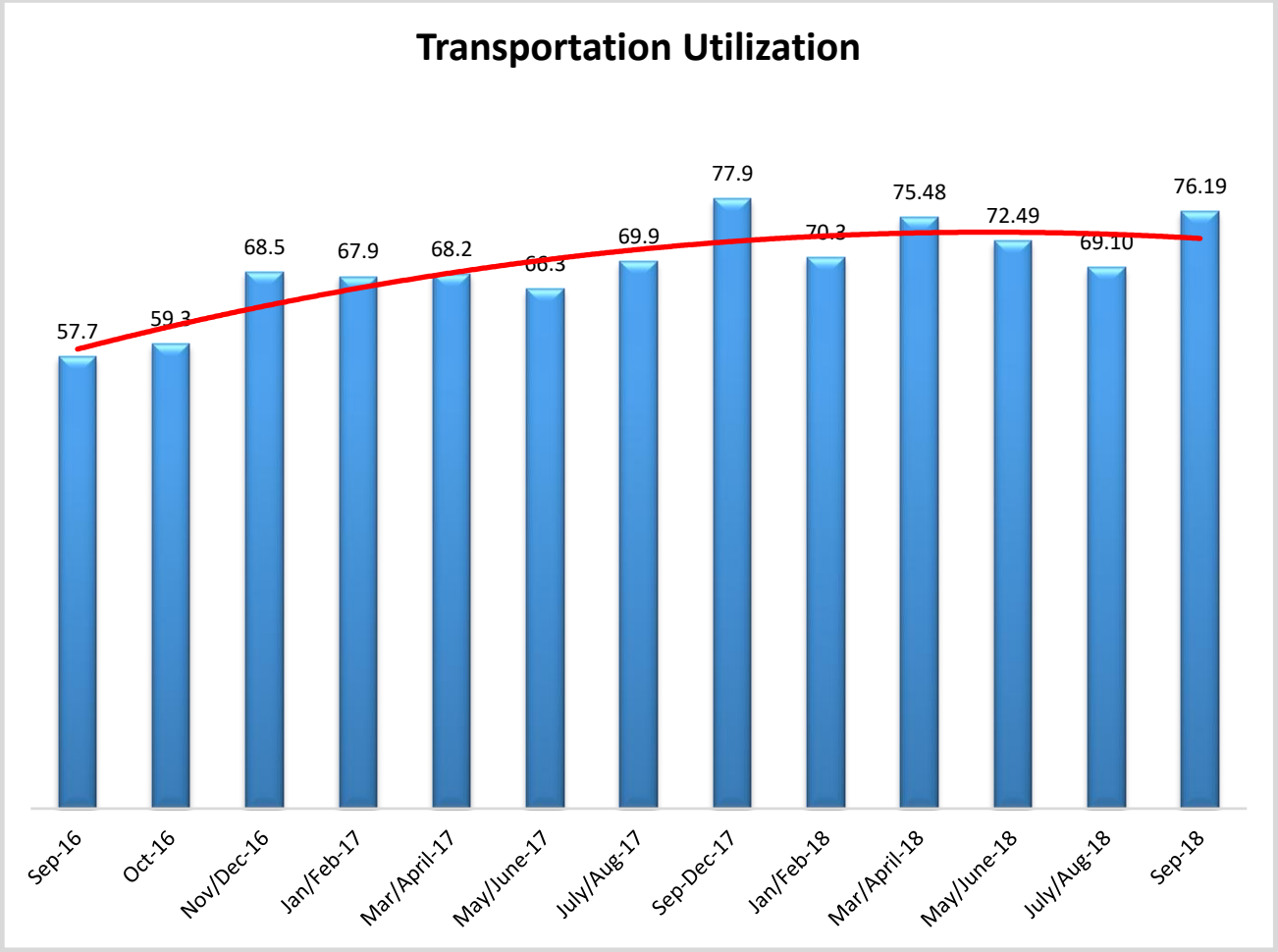
Transportation Capacity

The Transportation Capacity Index registered 41.03 percent in September 2018. This is an increase of 2.59 percentage points from the July-August reading of 38.44. The upward trend in transportation capacity is continuing, the latest reading being the third consecutive period showing an increase from the previous reading. This increase may be related to the slowing of the growth rate in Transportation Price. It should be noted the data also indicates a score of 44.76 percent for the next year. Hence, the expectation is a slight improvement from the current Transportation Capacity Index, but the level is still under the critical 50 percent, indicating that a slight contraction in transportation capacity is expected over the next 12 months.



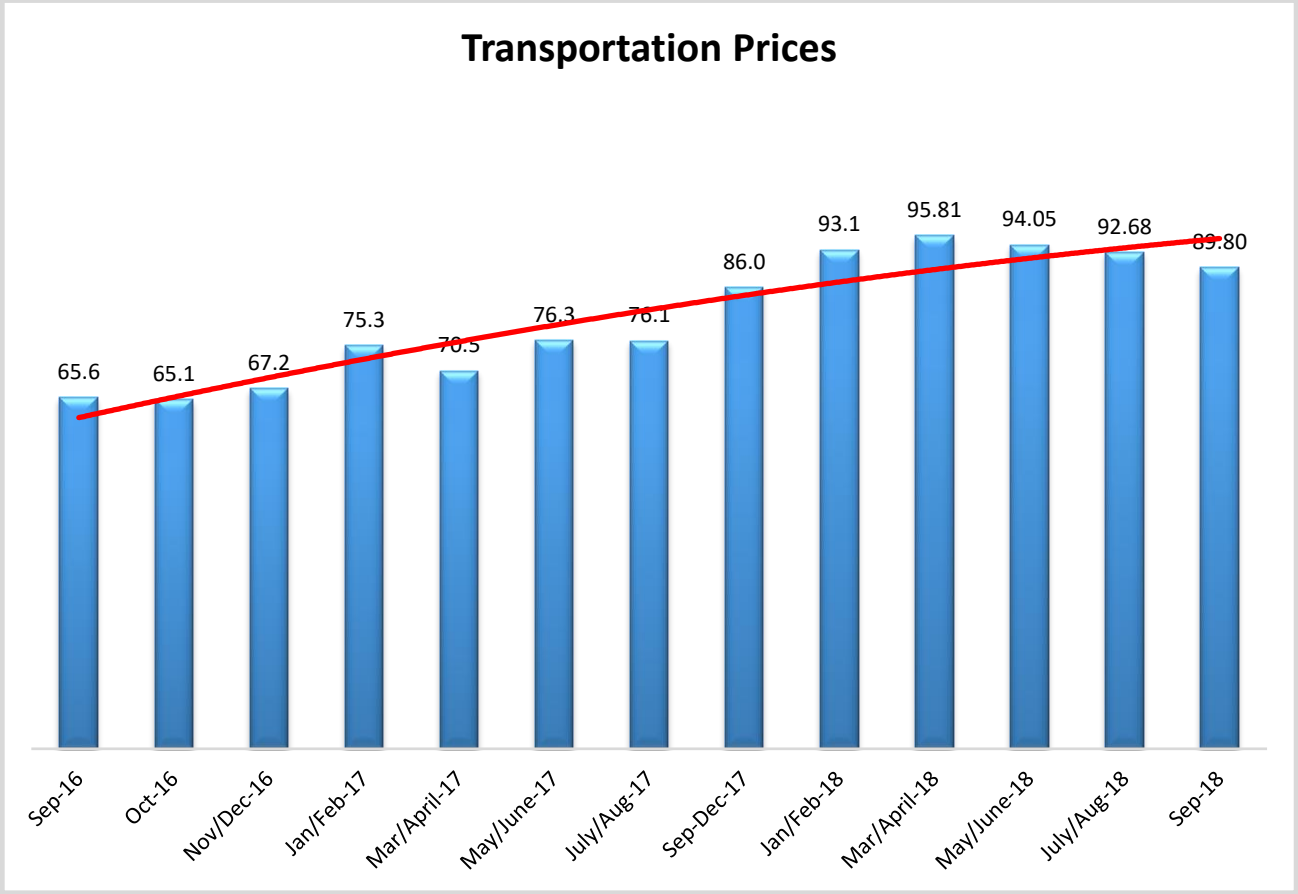
Transportation Utilization

The Transportation Utilization Index registered 76.19 percent in September 2018. This is an increase of 7.09 percentage points from the July-August reading of 69.10. This is the first increase after two consecutive periods with a drop in transportation utilization. This latest reading is the second highest level ever registered in transportation utilization. Our future Transportation Utilization Index indicates a 76.55 percent level for the next 12 months.



Transportation Prices

The Transportation Prices Index registered 89.80 percent in September 2018. This is 2.88 percent lower than the July-August transportation prices reading. Transportation Prices Index has come off its historical highs, with the latest reading being the third consecutive decrease from the all-time high registered in March-April 2018. The future expectations for transportation prices are at 88.01 percent, indicating that the upward pressure on transportation prices is likely to persist in the following 12 months.



About This Report

The data presented herein are obtained from a survey of logistics supply executives based on information they have collected within their respective organizations. LMI® makes no representation, other than that stated within this release, regarding the individual company data collection procedures. The data should be compared to all other economic data sources when used in decision-making.

Data and Method of Presentation

Data for the Logistics Manager's Index is collected in a monthly survey of leading logistics professionals. The respondents are CSCMP members working at the director-level or above. Upper-level managers are preferable as they are more likely to have macro-level information on trends in Inventory, Warehousing *and* Transportation trends within their firm. Data is also collected from subscribers to both DC Velocity and Supply Chain Quarterly as well. Respondents hail from firms working on all six continents, with the majority of them working at firms with annual revenues over a billion dollars. The industries represented in this respondent pool include, but are not limited to: Apparel, Automotive, Consumer Goods, Electronics, Food & Drug, Home Furnishings, Logistics, Shipping & Transportation, and Warehousing.

Respondents are asked to identify the monthly change across each of the eight metrics collected in this survey (Inventory Levels, Inventory Costs, Warehousing Capacity, Warehousing Utilization, Warehousing Prices, Transportation Capacity, Transportation Utilization, and Transportation Prices). In addition, they also forecast future trends for each metric ranging over the next 12 months. The raw data is then analyzed using a diffusion index. Diffusion Indexes measure how widely something is diffused, or spread across a group. The Bureau of Labor Statistics has been using a diffusion index for the Current Employment Statics program since 1974, and the Institute for Supply Management (ISM) has been using a diffusion index to compute the Purchasing Managers Index since 1948. The ISM Index of New Orders is considered a Leading Economic Indicator.

We compute the Diffusion Index as follows:

PD = Percentage of respondents saying the category is Declining,
PU = Percentage of respondents saying the category is Unchanged,
PI = Percentage of respondents saying the category is Increasing,
Diffusion Index = 0.5 * PD + 0.5 * PU + 1.0 * PI

For example, if 25% say the category is declining, 38% say it is unchanged, and 37% say it is increasing, we would calculate an index value of 0*0.25 + 0.5*0.38 + 1.0*0.37 = 0 + 0.19 + 0.37 = 0.56, and the index is increasing overall. For an index value above 0.5 indicates the category is increasing, a value below 0.5 indicates it is decreasing, and a value of 0.5 means the category is unchanged. When a full year's worth of data has been collected, adjustments will be made for seasonal factors as well.

Logistics Managers Index

About The Logistics Manager's Index®

The Logistics Manager's Index (LMI) is a joint project between researchers from Arizona State University, Colorado State University, University of Nevada, Reno, Rochester Institute of Technology and Rutgers University, supported by CSCMP.