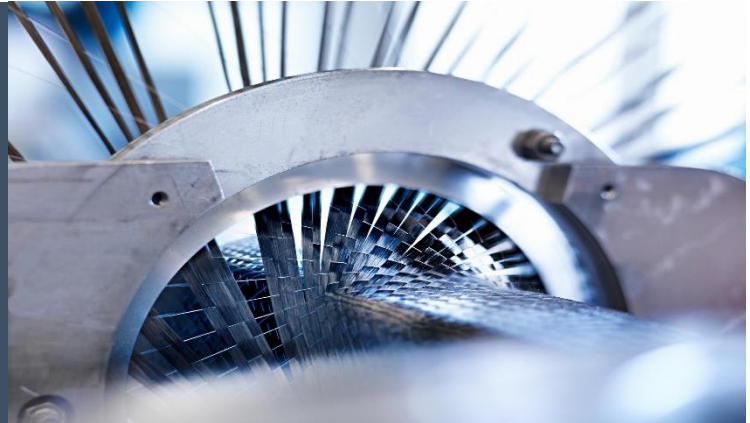


## Industrials Update | Q3 2019



### ► Introduction and Overview

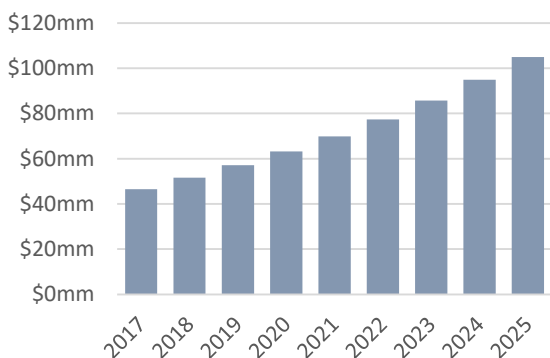
In this edition of Founders' Industrials Update, we focus our attention on the advanced materials sector. The advanced materials sector is garnering attention of late as investors look for sector resilience. In this update, we provide a breakdown of the various segments in the sector, highlight key players in the industry, outline trends affecting the advanced materials M&A market, as well as list several of the largest Q3 M&A transactions in the advanced materials sector.

### Advanced Materials Industry Growth and Key Trends

#### ► Market at a Glance

The advanced materials market is experiencing growth and transition both in developed markets such as the United States and the EU and in developing countries such as India, China, and Brazil. This evolving environment is driven largely by the diverse segments that make up advanced materials, ranging from diversified chemicals to aerospace composites.

Global Advanced Materials Market (10.7% CAGR)



Source: Goldstein Research

#### ► Other Trends

Another key trend in advanced materials is the push for environmentally-friendly materials. A combination of regulatory changes and increased consumer awareness has raised the demand for more sophisticated and sustainable materials. Plastics, in particular, are a key focus of environmental sustainability for chemical companies; currently, the market trends have focused on limiting the development of single-use and microplastics in favor of more environmentally friendly and cost-effective lightweight materials.

#### ► Advanced Materials Analytics

Data analytics is rapidly changing the advanced materials industry as companies become more aware of the potential their data holds. One of the most recent evolutions of data analytics in the advanced materials industry is the development of supercomputers that use artificial intelligence. A prominent example of this evolution is BASF's partnership with Hewlett Packard to design a supercomputer that will autonomously run experiments that design new advanced materials.

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*"While the advanced materials market is facing headwinds from international trade conflicts, the long-term outlook is strengthened by a diverse range of applications and continued innovation."*

**Gene Bazemore,**  
 Managing Director

# Advanced Materials End User Overview

## ► End User Summary

In the advanced materials industry, growth, innovation, and demand are largely driven by the end user's sector. For example, advanced materials companies that supply to automotive manufacturers are experiencing high demand due to the rapid expansion of the electric vehicle market. Similarly, advanced materials companies focused on healthcare applications are in a favorable position as technology-driven research leads to a greater need for cutting-edge, medical-grade, equipment and supplies.

### Advanced Materials End User Sectors



### ► Energy Application

The energy sector has a consistent need for advanced materials. High-temperature materials for thermal power plants and porous materials for carbon capture are a few of the many materials that energy companies need to ensure process control and environmental safety.



### ► Aerospace Application

Increased passenger airline trips combined with a renewed interest in space exploration is leading to an ever-increasing demand for advanced materials in the aerospace industry. Specifically, lightweight and heat resistant composite materials are in high demand.



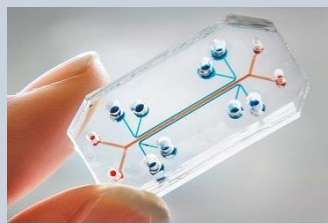
### ► Automotive Application

The automotive sector is pushing advanced materials companies to the pinnacle of technological innovation – this is largely driven by the need for lightweight materials to construct cars as well as new components for developing quick charging and long-range batteries.



### ► Marine Application

Marine need for advanced materials is growing and largely driven by the increase in the global cargo shipping market. One of the primary challenges for advanced materials manufacturers is the development of eco-friendly protective coatings for ships.



### ► Healthcare Application

Healthcare companies need advanced materials for a wide range of applications. Recently, the desire for greater health monitoring has led to a growing number of resources being placed into sensor development and mass manufacturing.



### ► Electronic Packaging Application

With the rapid increase of innovative consumer electronics, the electronic packaging market has been increasing its demand for advanced materials to protect microchips and other sensitive electronic components from moisture, while not hindering their capabilities.



### ► Construction Application

The construction industry has an inherently large need for materials from building skyscrapers to expansive bridges. Recently the need for advanced materials has risen – a large factor in the rising demand is increasing regulation on the environmental impact of building materials.



### ► Defense & Security Application

The defense and security industry combines the technological advances made in other sectors and further develops them into combat grade products. Recently U.S. military spending has increased, resulting in purchases of advanced materials for unmanned drones and ships.

# Advanced Materials Acquisition Trends

## Strategic Buyer Influence and Sector Strength

### ► Strategic Buyers Still Dominate The Market

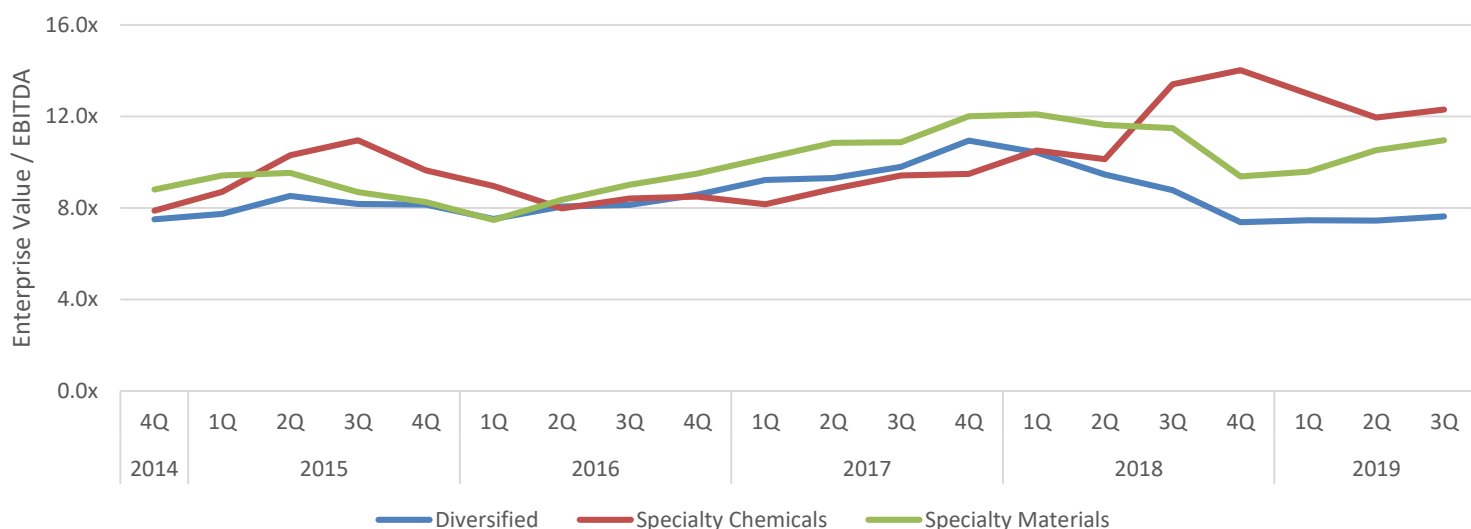
Strategic buyers dominate the advanced materials acquisition market. Strategic buyers in this sector are looking to purchase companies with synergies that will enhance capabilities, reduce costs, and increase overall market share. By far the largest advanced materials transaction in the third quarter of 2019 was Saudi Arabian Oil Company’s (Saudi Aramco’s) strategic acquisition of Saudi Basic Industries Corporation (SABIC) at a value of \$94.6bn at a 7.7x EV / EBITDA multiple.

### ► Sector Strength Expected to Remain Amid Market Volatility

With the rise in global economic uncertainty reinforced by trade tensions and Brexit, both strategic and financial buyers are seeking transactions in sectors such as advanced materials that can outperform in an economic downturn. Specifically, advanced materials companies operating in the medical or aerospace segments are of particular interest to investors.

## Recent Valuation Trends

*Specialty Chemicals and Materials Have Steadily Improved, with Diversified Chemicals Holding Relatively Flat*



## Private Equity Interest and Trading Statistics

### ► Shift Towards Larger Deals

Recently financial buyers have become increasingly more focused on higher value deals over deal volume, continuing the 2018 trend where overall deal value hitting historic highs while deal volume decreased. Advent International is the latest private equity firm to close a large transaction in the sector - purchasing the methacrylates business of Evonik Industries AG for \$3bn. With combined interest from strategic and financial buyers, multiples have the potential to move higher.

### ► Other Trends

Another key trend in advanced materials M&A activity is private equity firms bolstering and growing their current portfolio companies through additional acquisitions. Concurrently, a number of private equity firms have recently partnered with other investors to garner the necessary resources to close a deal; for example, CVC Capital Partners and Messer Industries GmbH formed a joint venture to acquire a majority stake in Linde AG’s North American gas business as well as some Linde and Praxair South American operations.

## Key Players in Advanced Materials

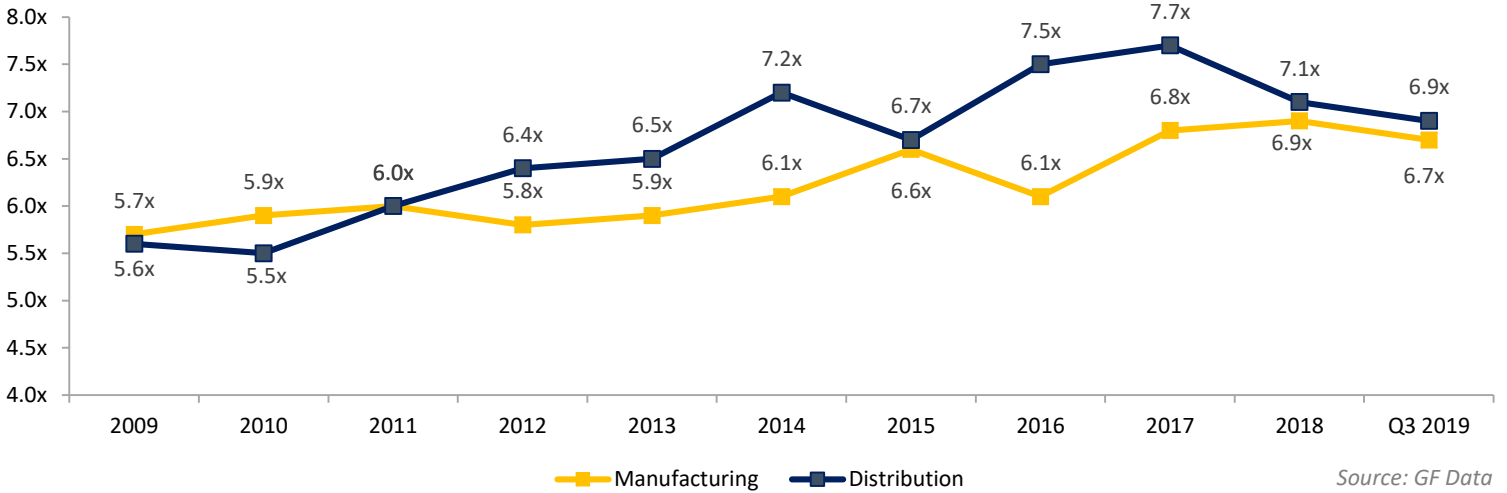
Ticker	Company Name	% of 52-Week High	Market Cap	Enterprise Value	2019P EBITDA Margin %	Enterprise Value /		2020E EBITDA Margin %	Enterprise Value /	
						2019P Revenue	2019P EBITDA		2020E Revenue	2020E EBITDA
<b>Diversified</b>										
BAS	BASF SE	91.6%	69,861.6	90,652.5	13.6%	1.3x	9.7x	14.6%	1.3x	8.7x
CE	Celanese	96.7%	15,152.8	19,062.8	28.7%	3.0x	10.4x	29.5%	2.9x	9.7x
DD	DuPont de Nemours	36.0%	49,034.0	65,673.0	26.1%	3.0x	11.7x	27.1%	3.0x	10.9x
EMN	Eastman Chemical Co.	91.4%	10,871.5	17,147.5	21.6%	1.8x	8.5x	22.3%	1.8x	8.1x
HUN	Huntsman	94.0%	5,548.6	8,009.6	12.5%	1.1x	8.8x	12.9%	1.2x	9.0x
SOLB	Solvay SA	93.9%	12,013.6	16,371.7	21.7%	1.4x	6.4x	21.6%	1.4x	6.3x
	<b>Min</b>	36.0%	5,548.6	8,009.6	12.5%	1.1x	6.4x	12.9%	1.2x	6.3x
	<b>Median</b>	92.8%	13,583.2	18,105.2	21.7%	1.6x	9.3x	21.9%	1.6x	8.8x
	<b>Mean</b>	83.9%	27,080.4	36,152.9	20.7%	1.9x	9.2x	21.3%	1.9x	8.8x
	<b>Max</b>	96.7%	69,861.6	90,652.5	28.7%	3.0x	11.7x	29.5%	3.0x	10.9x
<b>Specialty Chemicals</b>										
AKZA	Akzo Nobel N.V.	99.6%	20,276.1	21,515.3	14.0%	2.1x	14.8x	15.8%	2.0x	12.8x
ALB	Albemarle	71.9%	7,212.4	9,129.5	28.8%	2.5x	8.8x	26.1%	2.6x	9.8x
ASH	Ashland Global	93.3%	4,612.9	6,047.9	21.2%	2.4x	11.3x	22.3%	2.4x	11.0x
CLN	Clariant AG	93.9%	7,065.7	9,031.8	15.7%	2.0x	12.9x	17.0%	2.0x	11.5x
EVK	Evonik	97.2%	13,841.3	15,786.8	16.2%	1.1x	6.7x	16.3%	1.1x	6.5x
PPG	PPG Industries	99.4%	31,629.3	36,517.3	16.9%	2.4x	14.3x	17.6%	2.3x	13.3x
SIKA	Sika AG	99.5%	23,366.6	27,653.5	17.3%	3.3x	19.3x	18.1%	3.0x	16.4x
	<b>Min</b>	71.9%	4,612.9	6,047.9	14.0%	1.1x	6.7x	15.8%	1.1x	6.5x
	<b>Median</b>	97.2%	13,841.3	15,786.8	16.9%	2.4x	12.9x	17.6%	2.3x	11.5x
	<b>Mean</b>	93.5%	15,429.2	17,954.6	18.6%	2.3x	12.6x	19.0%	2.2x	11.6x
	<b>Max</b>	99.6%	31,629.3	36,517.3	28.8%	3.3x	19.3x	26.1%	3.0x	16.4x
<b>Specialty Materials</b>										
SGO	Compagnie de Saint-Gobain	96.2%	23,009.2	37,441.9	11.8%	0.8x	6.6x	12.1%	0.8x	6.6x
ENTG	Entegris	99.4%	6,714.0	7,422.5	27.2%	4.7x	17.1x	29.6%	4.2x	14.3x
ROG	Rogers Corp.	63.8%	2,510.8	2,512.1	21.2%	2.8x	13.0x	20.6%	2.7x	12.9x
POL	PolyOne Corp.	88.5%	2,448.2	3,745.5	10.9%	1.2x	11.3x	11.0%	1.3x	11.6x
NOLA B	Nolato AB	93.1%	1,541.3	1,555.3	16.2%	1.9x	11.8x	16.1%	1.7x	10.6x
MGAM	Morgan Advanced Mat.	93.0%	1,197.0	1,608.9	16.3%	1.2x	7.1x	16.5%	1.1x	6.9x
	<b>Min</b>	63.8%	1,197.0	1,555.3	10.9%	0.8x	6.6x	11.0%	0.8x	6.6x
	<b>Median</b>	93.0%	2,479.5	3,128.8	16.2%	1.6x	11.5x	16.3%	1.5x	11.1x
	<b>Mean</b>	89.0%	6,236.8	9,047.7	17.3%	2.1x	11.2x	17.6%	2.0x	10.5x
	<b>Max</b>	99.4%	23,009.2	37,441.9	27.2%	4.7x	17.1x	29.6%	4.2x	14.3x

## Select 2019 Advanced Materials M&A Transactions<sup>1</sup>

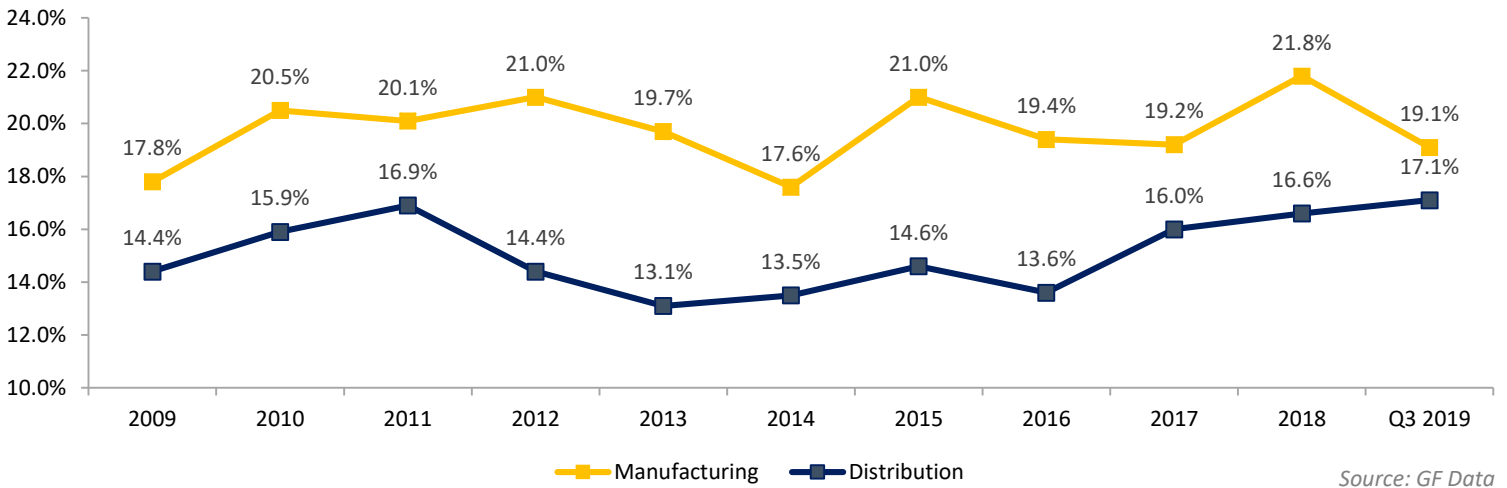
Date	Target Name	Buyer Name	Transaction Value (\$mm)	EV / EBITDA	Target Business Description
3/27/2019	Saudi Basic Industries Corporation	Saudi Arabian Oil Company	\$94,593.5	7.7x	Saudi Basic Industries Corporation manufactures, markets, and distributes chemicals, polymers, plastics, agri-nutrients, and metal products worldwide.
2/27/2019	Versum Materials	MERCK	\$6,499.5	14.3x	Versum Materials, Inc. develops, manufactures, transports, and handles specialty materials for the semiconductor and display industries in the United States, Taiwan, South Korea, China, Europe, and rest of Asia.
4/29/2019	LORD Corporation	Parker-Hannifin Corporation	\$3,675.0	16.5x	LORD Corporation develops, manufactures, and markets adhesives, coatings, motion management devices, and sensing technologies.
3/4/2019	Methacrylates Business of Evonik Industries AG	Advent International Corporation	\$3,000.0	8.6x	Methacrylates Business of Evonik Industries AG comprises methyl methacrylates (MMA) and polymethyl methacrylate (PMMA) manufacturing business.
5/15/2019	Momentive Performance	KCC Corp	\$2,664.9	7.4x	Produces silicones, silicone derivatives, and functional silanes.
8/7/2019	Cambrex Corporation	Permira Advisers Ltd.	\$2,620.4	17.9x	Cambrex Corporation, a life sciences company, provides various products and services for the development and commercialization of new and generic therapeutics worldwide.
8/7/2019	Chemicals Unit of Huntsman	Indorama Ventures	\$2,076.0	8.0x	Comprises the Chemical Intermediates and Surfactants businesses of Huntsman.
9/17/2018	Nexeo Solutions	Univar Inc.	\$1,962.7	10.5x	Nexeo Solutions, Inc. operates as a chemical and plastic products distributor in North America, Europe, the Middle East, Africa, and Asia.
7/3/2019	OMNOVA Solutions Inc.	Synthomer USA LLC	\$751.8	10.6x	OMNOVA Solutions Inc. provides specialty solutions and performance materials for various commercial, industrial, and residential end uses in the United States, Europe, and Asia.
3/18/2019	North American Business of National Titanium Dioxide Company	INEOS AG	\$700.0	-	As of May 1, 2019, North American Business of National Titanium Dioxide Company Limited was acquired by INEOS AG.
2/1/2019	Sonneborn	HollyFrontier	\$655.00	9.9x	Develops, manufactures, and markets plant nutrient products for the agriculture industry.
5/16/2019	ArrMaz	Arkema S.A.	\$570.0	10.8x	ArrMaz Custom Chemicals, Inc. manufactures and supplies process chemicals, additives, and solutions for the fertilizer, mining, asphalt, construction, and industrial minerals markets worldwide.

# Middle Market M&A Transaction Statistics

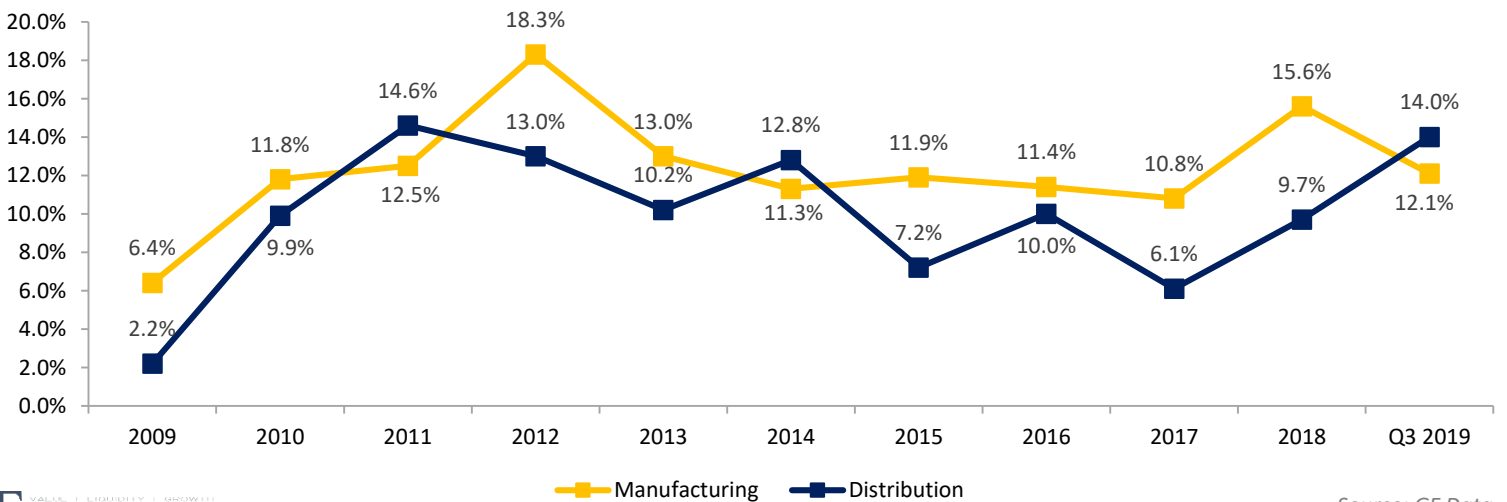
## Private Equity Sponsored Middle Market Transaction EBITDA Multiples



## Private Equity Sponsored Middle Market Transaction EBITDA Margins



## Private Equity Sponsored Middle Market Transaction TTM Revenue Growth



## About Founders Advisors

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Founders Advisors (Founders) is a merger, acquisition & strategic advisory firm serving middle-market companies. Founders' focus is on energy, industrials, software, internet, digital media and industrial technology companies throughout the United States. Founders' skilled professionals, proven expertise and process-based solutions help companies access growth capital, make acquisitions, and/or prepare for and execute liquidity events to achieve specific financial goals. In order to provide securities-related services discussed herein, certain principals of Founders are licensed with M&A Securities Group, Inc. or Founders M&A Advisory, LLC, both members FINRA & SIPC. Founders M&A Advisory is a wholly owned subsidiary of Founders. M&A Securities Group and Founders are not affiliated entities. For more information, visit [www.foundersib.com](http://www.foundersib.com).

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