

Barnes Group Inc. is a global industrial and aerospace manufacturer and service company serving a wide range of end markets and customers. Barnes Group operates in two segments: industrial and aerospace. The industrial segment offers numerous precision parts, systems, and products to end markets including but not limited to transportation, healthcare, packaging and industrial equipment. Industrial products include customized hot runner systems, precision mold assemblies, mechanical springs, nitrogen gas products, and retention rings. The aerospace segment focuses on designing, manufacturing precision-machined, and fabrication to produce critical airframe and engine components through technologically advanced systems. The aerospace segment also offers repair and refurbishment services.

**BUY**

Current Price:	\$68.65
Target Price:	\$82.42
Market Cap:	3.7B
Beta:	1.40
EPS:	2.86
52 Week Price Range:	\$37.88 – 73.84
Operating Income Margin:	15.6%
ROE:	13.4%
Volume:	235,214
D/E Ratio:	0.42
ROIC	11.5%



### Thesis:

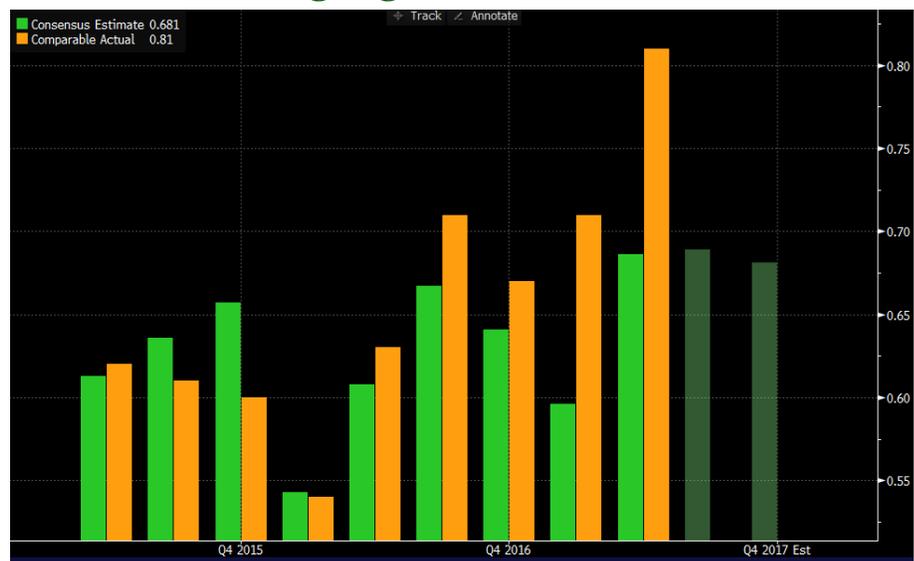
Barnes Group is a global leader in the design and engineering process of precision parts and products to end markets through their two business segments, aerospace and industrials. Barnes Group has experienced consistent double-digit organic sales growth and operating income growth in the mid-teens year over year. Through recent acquisitions, Barnes Group continues to expand globally into Europe and Asia positioning itself to continue to be a global leader in its precision molds and nitrogen gas products as well as being able to continue to supply leading corporations such as General Electric and Rolls-Royce in its Aerospace segment. Value creation for Barnes Group depends on earnings continuing to beat analyst estimates and continued growth in revenue and margins.

### Catalysts:

- Short Term (within the year): Quarterly earnings report released on October 27, 2017.
- Mid Term (1-2 years): Industrial business segment strength specifically molding solutions and nitrogen gas products. Continued use and implementation of the Barnes Enterprise System in recent acquisitions.
- Long Term (3+): Continued strategy of acquisition and innovation in new products to strengthen revenue and margins.

## 2<sup>nd</sup> Quarter Earnings Performance and Highlights:

Barnes Group continued to beat analyst earnings estimate for the second quarter of fiscal year 2017. On an adjusted basis, EPS for Barnes was \$0.81 for the second quarter, up 29% from \$0.63 for second quarter 2016. Barnes Group reported sales of \$364 million for the second quarter up 19% from the prior year period, which was driven by strong organic growth in the low double digits as well as being bolstered by recent acquisitions. Barnes continued to



see improvement within its operating margins. Operating income was reported at \$54.1 million, an increase from \$48.4 from a year prior. Barnes also experienced significant growth in net income for 2Q 2017. Net income was reported at \$45 million for the second quarter, an increase from \$33.2 million that was reported

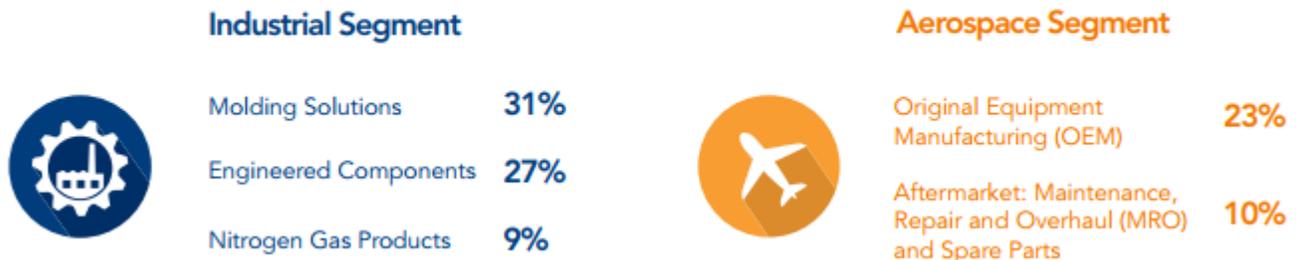
for the second quarter of 2016. Each business segment for Barnes, industrials and aerospace, performed markedly better than the previous year's period. The industrial segment grew sales 23% year over year and reported nearly 50% sales growth year over year for molding solutions division of the industrial segment. For Aerospace, this division also reported strengthening sales and margin numbers. Sales were up 10% compared to the year prior and operating margin increased to 17.5%, 360 basis points better than the prior year's period.

## Industry Outlook:

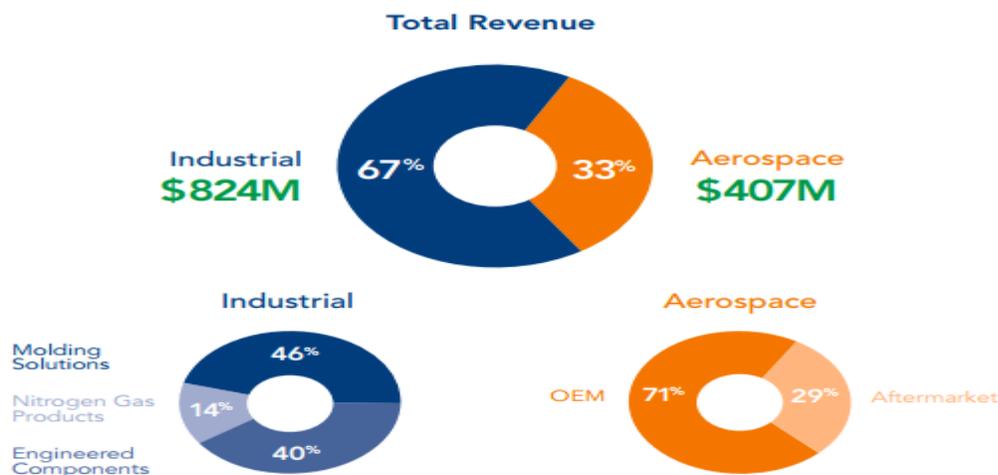
The Capital Goods industry, companies that produce durable goods for other companies to use in their end-products, is the largest group of the industrials sector. Industrial goods are very sensitive to market volatility and economic conditions with a beta of 1.2, resulting in the industrial sector experiencing both sharp inclines and declines over relatively shorter time horizons, making industrials an inherently riskier sector. The Purchasing Managers Index is an important measure in grading the outlook of the industrial sector and grades out of a scale 0-100, 100 being the highest grade and a score of 50 considered to be neutral. The PMI follows five measures to grade the overall economic health of manufacturing within the industrial sector which is extremely relevant to Barnes' Group outlook going forward. These five measures are new orders, inventory levels, production, supplier deliveries, and employment environment. The PMI as of August 2017 is 58.80 and increase from 49.4 year over year, indicating a slightly bullish view on the industrial sector currently. Macro data also favors a slightly bullish view on the industrial sector and capital goods in particular. According to the US Census Bureau, United States capital goods manufacturers experienced after tax profits of \$80.0 billion in 2Q FY 2017 compared to \$71.6 billion the year prior, an increase of 11.73%. Of course, Barnes is diversified globally so worldwide macro trends and foreign currency fluctuations impact the company's ability to generate profit more so than domestic companies. The United States is currently in the expansionary phase of the business cycle and China, Germany, France and the EU are lagging the United States in terms of the business cycle heading towards an expansionary period. This is beneficial in particular to Barnes Group, as a majority of their business exists in the United States, Germany, and China so the company should experience continued organic growth in these geographical regions. The European outlook in particular looks favorable to Barnes Group as the Eurozone cycle trails the United States in part to improving consumer sentiment and accommodating monetary policy. As the business cycle expands, industrials historically outperform the market so growth in the market should continue to outperform. North American industrials should continue to grow organically due to growth in end-market demand put in part by better than expected first half gains. Aerospace and healthcare, both areas Barnes is exposed to, should continue to expand according to Bloomberg Analysts.



## Business Segmentation: Percentage of Sales



## Revenue Breakdown



Barnes Group operates in two global business segments, industrial products and aerospace. The industrial segment includes three divisions, the molding solutions, nitrogen gas products and engineered components. The aerospace segment focuses on two divisions, original equipment manufacturer (OEM), which includes the maintenance, repair, and overhaul services (MRO) as well as the manufacture and delivery of aftermarket spare parts. Net sales by region are broken up into three regions, North America, Europe, and Asia. Respectively, these regions account for 51%, 32%, and 17% of revenue generated by the industrial and aerospace segments. The mix of products offered by the industrial segment of Barnes' business model is quite diverse. Barnes offers their products and solutions to a number of diversified business end-markets such as transportation, consumer products, packaging, electronics, and healthcare/medical devices. For the fiscal year ending 2016, the industrial segment revenues were reported at \$824.2 million or 67% of sales. The molding solutions division currently operates as the most successful division of the industrial segment. For the 2Q 2017, sales increased to nearly 50% while organic sales grew 20%. The industrial segment operates through a number of brands previously acquired by Barnes in North America, Asia, and Europe broadening and diversifying the company's portfolio. Approximately 46% of the industrial segment's revenue derives from the molding solutions division with engineered components and nitrogen gas products accounting for 40% and 11% of revenues respectively. Barnes' diverse portfolio of products and systems allows them to

maneuver the global marketplace effectively and allows them to focus on both organic growth and the use of capital for acquisitions. Recently, Barnes decided to close a smaller manufacturing plant, which has allowed the industrial segment to leverage current infrastructure, become more efficient, and save costs estimated at around \$5 million.

Barnes' aerospace division is a global leader in providing complex fabricated and precision-machined components for the manufacture of turbine engines, airframes, industrial gas turbine builders, and the military. The aerospace segment also provides MRO services to some of the leading turbine manufacturers, commercial airlines, and the military as well. This is achieved through technically advanced processes. The aerospace segment is driven by sales within its OEM and MRO services. This division generates 71% of revenues for aerospace while the aftermarket division generates 29% of revenue. Aerospace generated \$407 million in gross revenue for 2016. Operating margins within the aerospace have strengthened year over year increasing to 17.5% compared to 13.9% from the previous year. This was primarily due to the increase in MRO services and spare parts after-market sales. The aerospace segment of Barnes carries significantly more risk compared to the industrial segment. Primarily, the industrial segment is subject to foreign exchange rate risk due to a number of operations taking place in Germany and Switzerland and was seen on the 2015 income statement as revenues dropped due to the strengthening of the US dollar. However, the aerospace segment is the more risky of the two segments due to the small, albeit large customers. GE made up 51% of aerospace's total sales in 2016 while Rolls-Royce and United Technologies Corporation accounted for 13% and 11% respectively. As long as orders continue to increase the risk to the business is minimal however if orders drop, aerospace could suffer greatly. Overall, Barnes' diverse business portfolio allows them to navigate the risks of the global marketplace and set the company up for potential future growth in revenue, income, and cash flow.

---

## **Recent Acquisitions and Barnes Enterprise System:**

Barnes' recent acquisitions have provided a significant competitive advantage within their market. These acquisitions overall have been a growth driver for Barnes over the last few fiscal years and will serve as a key catalyst for future growth as well. These new acquisitions have also allowed Barnes to develop new products and expand into new geographical areas and markets such as China with the purchase of Adval Tech Holding AG and Adval Tech Holdings Asia known as FOBOHA. FOBOHA was purchased by Barnes in 3Q 2016 for \$136.8 million in cash and is headquartered in Germany and has manufacturing locations in Germany, Switzerland, and China. This allows Barnes to expand its global reach in the industrial segment. FOBOHA specializes in the development and manufacture of complex plastic inject molds which will only further strengthen the profitable molding solutions division of Barnes' industrial segment. According to the 2Q earnings call, CEO Patrick Dempsey stated "The FOBOHA business acquisition is a great IT based technology company driven business." Also, the CEO confirmed that mold sales were up nearly 50% for this arm of the business however margins were relatively low. To combat low margins Dempsey stated "The full benefit of the Barnes Enterprise System and plant synergies have yet to be realized. We have a detailed blueprint to improve profitability here and a significant step forward was initiated in the second quarter." To me, this indicates an opportunity for growth of value within this segment due to the organic growth capabilities of this division.

The Barnes Enterprise System (BES) is a significant value creator for the company. BES includes four key elements; culture, alignment, continuous improvement, and results. BES works by leveraging employee drive and dedication along with scalable process, practice sharing and innovation brings superior products and value to customers and shareholders. BES operates by focusing on four critical qualitative processes to increase the five areas that drive performance and profit. By focusing on culture, alignment, continuous and innovative improvements, and customer driven results, Barnes translates these selected areas into value creation and competitive advantages. BES system then translates this into productivity goals that focus on revenue growth and cost reduction. Specifically, volume and pricing work to increase sales effectiveness while competitively leveraging technology into new product innovation. On the cost side of things, BES tries to make SG&A expenses efficient and make their supply chains and logistics services streamlined. These two cost effectiveness measures work to increase the operational efficiency of the business, lowering costs and providing competitive advantages in both sales and costs. Once the BES is fully integrated, as well as the smoothing of commercial and aftermarket processes, the FOBOHA acquisition we should see increased margins and profit, along with organic growth, driving value higher.

## Barnes Enterprise System (BES) is Our Fully Integrated Operating System



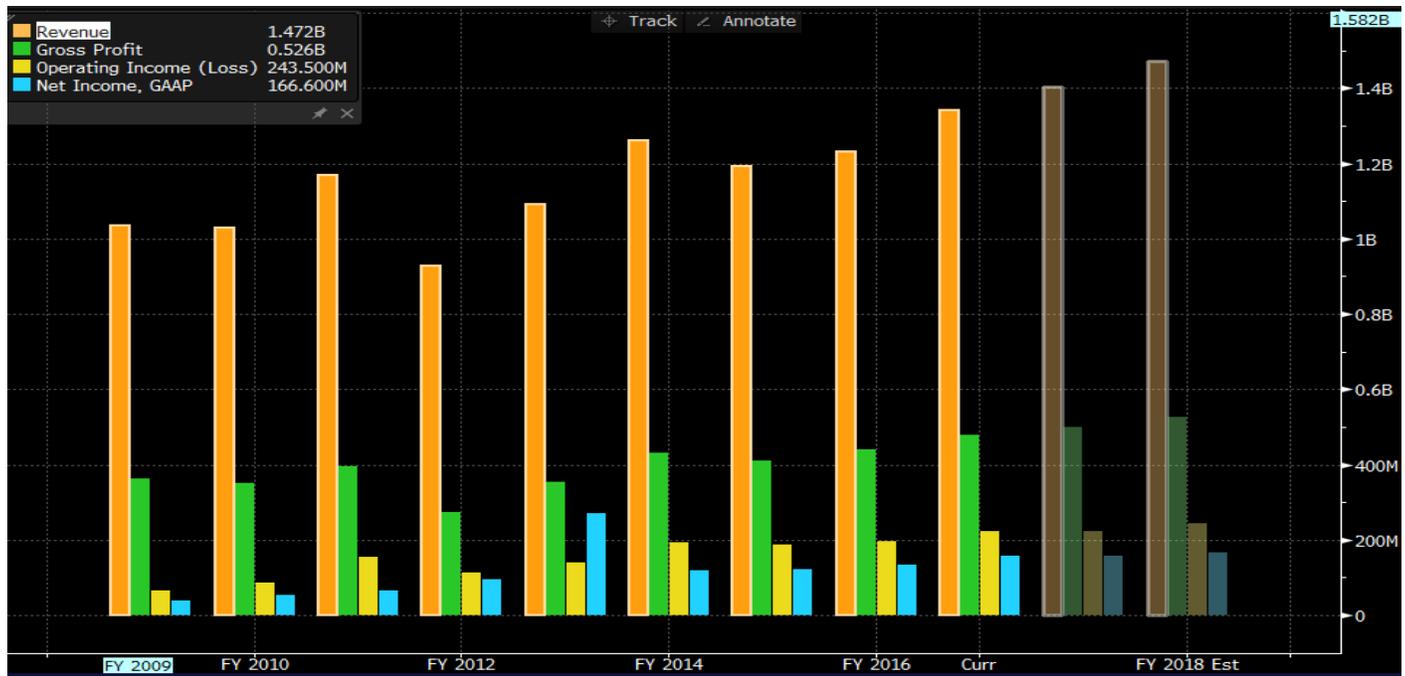
Promotes a **CULTURE** of Employee Engagement and Empowerment Reflecting Our Strong Corporate Values

Drives **ALIGNMENT** across the Organization around a Common Vision

Fosters **CONTINUOUS IMPROVEMENT** and Innovation in All of Our Business Processes

Achieves **RESULTS** that Drive Sustainable, Long-term Profitable Growth

## Revenue and Profitability Comparison:



Revenues increased year over year for FY 2016 compared to FY 2015. Revenues were reported at \$1.230 billion for FY 2016 compared to \$1.194 billion for FY 2015, an increase of 3.02%. The decrease in revenue for FY 2015 can be attributed to the strengthening of the USD in the foreign exchange due to the exposure of the industrial segment to European currencies. Aerospace was largely unharmed by the appreciation of the USD due to sales being largely denominated in US dollars. However, revenues for the last 12 months have increased again to \$1.342 billion, which is in line with current analyst and Barnes estimates. A large portion of this revenue increase in the last 12 months can be attributed to the strong results stemming from the industrial segment, in particular the molding solutions division. Operating income continues to see strong growth year over year as well as over the last 12 months. FY 2016 over FY 2015 saw an increase in operating income of 4.45% while over the last 12 months operating income has increased 22.85%. Again, this can be attributed to the continued successes of the molding solutions and nitrogen gas products division. EPS saw an increase of 29% over the last 12 months and from FY 2015 to FY 2016, EPS saw an increase of 16.98%. These strong revenue, margin, net income and EPS results and growth rates signal to a healthy company that has positioned itself well for future organic growth and value creation. Barnes has consistently beat expected earnings reports over the last five quarters and there is no reason to believe that trend cannot continue into the near and immediate future driving the value of the stock price higher.

## Capital Allocation Comparison:

ROIC (NOPAT/IC)			WACC		
	<i>History</i>	<i>LTM</i>		<i>History</i>	<i>LTM</i>
B	9.9%	11.5%	B	8.2%	8.6%
Competitors	20.7%	18.0%	Competitors	9.3%	8.7%
<b>Target</b>	<b>11.9%</b>		<b>Target</b>	<b>8.6%</b>	

Kd			ROIC /WACC		
	<i>History</i>	<i>LTM</i>		<i>History</i>	<i>LTM</i>
B	4.0%	4.0%	B	1.22	1.34
Competitors	5.2%	4.8%	Competitors	2.24	2.04
<b>Target</b>	<b>4%</b>		<b>Target</b>	<b>1.39</b>	

The above charts show The Barnes Group's capital allocation measures. Currently Barnes is exposed to debt with a consistent cost of debt of 4.0%, which is slightly above their competitor's average. Barnes Group is currently lowering its total debt exposure and increasing cash and equivalents to cover interest payments and other acquisition costs. Return on invested capital (ROIC) has seen an increase over the LTM, indicating that the company is becoming more efficient at capital allocation. Barnes' weighted average cost of capital (WACC) has also been consistently lower than its competitors, historically and within the LTM. The ROIC/WACC ratio over the LTM performed better than the company's historical ratio. Over the LTM ROIC/WACC was 1.34, a 9.34% increase over the historical ROIC/WACC ratio. This ratio indicates that the company is currently creating value with its assets.

## Conclusion:

Overall, Barnes Group is a buy at its current price level. Even though shares are trading at near 52-week highs there is upwards organic growth potential through existing businesses and recent and future acquisitions. Barnes Group recent acquisitions have yet to see their margins normalized and organic growth through these new businesses has not been seen yet. I believe as the BES is put in place by management in new acquisitions such as FOBOHA, we should see continued organic growth through new and continuing business segments, driving value higher. Also, revenue growth should continue to increase in large part due to a strengthening European economy and a continuation of growth domestically and abroad, particularly in Asia. Coupled with increasing margins, continued beats on earnings, a diversified business portfolio, and overall organic growth within their industrial and aerospace segments, Barnes is a buy at current price levels.

**Barnes Group Inc. (B)**

**CENTER FOR GLOBAL FINANCIAL STUDIES**

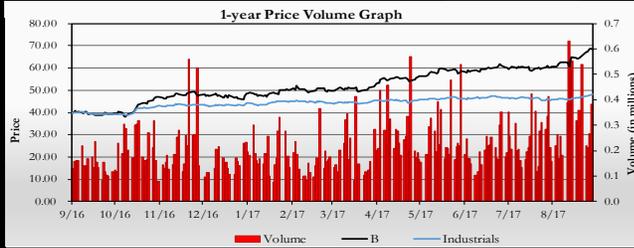
**BULLISH**

Analysis by Connor Morelli  
9/28/2017

Current Price: **\$68.65**  
Divident Yield: **0.8%**

Intrinsic Value: **\$75.00**  
Target Price: **\$82.42**

Target 1 year Return: **20.89%**  
Probability of Price Increase: **97.2%**

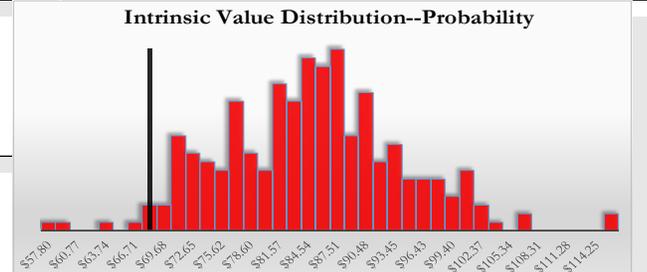


Description	
Barnes Group Inc. operates as an industrial and aerospace manufacturer and service provider, serving a range of end markets and customers.	
General Information	
Sector	Industrials
Industry	Machinery
Last Guidance	November 3, 2015
Next earnings date	October 27, 2017
Estimated Country Risk Premium	5.54%
Effective Tax rate	28%
Effective Operating Tax rate	30%

Market Data	
Market Capitalization	\$3,695.96
Daily volume (mil)	0.24
Shares outstanding (mil)	53.84
Diluted shares outstanding (mil)	54.64
% shares held by institutions	84%
% shares held by investments Managers	82%
% shares held by hedge funds	1%
% shares held by insiders	7.45%
Short interest	1.66%
Days to cover short interest	3.24
52 week high	\$73.84
52-week low	\$37.88
Volatility	24.28%

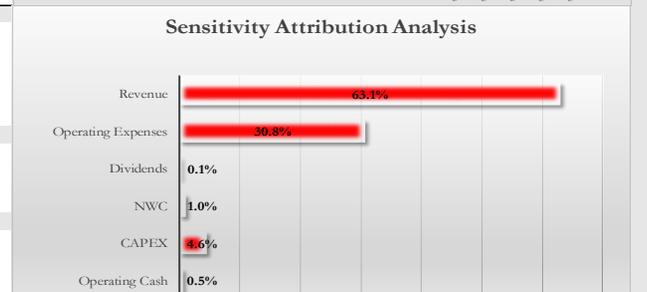
Past Earning Surprises	
Quarter ending	Revenue
6/30/2016	-2.48%
9/30/2016	-1.65%
12/31/2016	-2.94%
3/31/2017	5.17%
6/30/2017	5.93%
Mean	0.80%
Standard error	2.0%

EBITDA	
6/30/2016	-1.88%
9/30/2016	-4.47%
12/31/2016	0.91%
3/31/2017	11.92%
6/30/2017	6.09%
Mean	2.51%
Standard error	2.9%



Management	
Dempsey, Patrick	Chief Executive Officer, Pre
Stephens, Christopher	Chief Financial Officer and
Mayo, Scott	Senior Vice President and Pr
Beck, Michael	Senior Vice President and Pr
Berklas, James	Executive Officer
Pitts, William	Director of Investor Relatio

Peers	
Woodward, Inc.	
EnPro Industries, Inc.	
Actuant Corporation	
Graco Inc.	
Harsco Corporation	
Hillenbrand, Inc.	
Altra Industrial Motion Corp.	
Mueller Industries, Inc.	

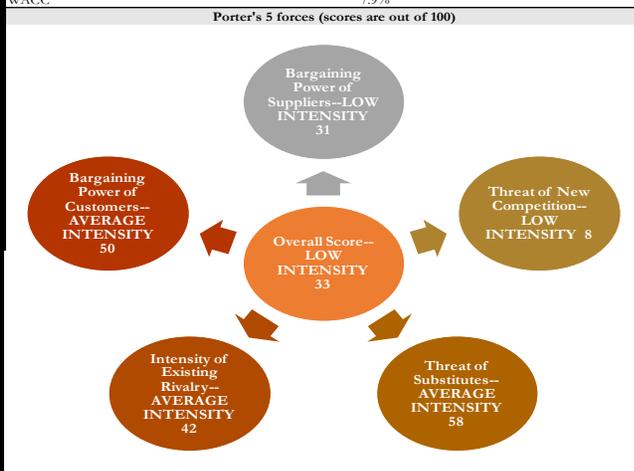


Profitability	
Return on Capital (GAAP)	11.5%
Operating Margin	14%
Revenue/Capital (GAAP)	0.84
ROE (GAAP)	13.4%
Net margin	11.7%
Revenue/Book Value (GAAP)	1.15

Total compensations growth	
Chief Executive Officer, Pre	26.24% per annum over 5y
Chief Financial Officer and	-0.65% per annum over 5y
Senior Vice President and Pr	-20.19% per annum over 2y
Senior Vice President and Pr	N/M
Executive Officer	85.19% per annum over 1y
Director of Investor Relatio	N/M

Invested Funds	
Cash/Capital	5.8%
NWC/Capital	16.3%
Operating Assets/Capital	40.5%
Goodwill/Capital	37.4%

Capital Structure	
Total Debt/Market Capitalization	0.28
Cost of Existing Debt	4.0%
CGFS Rating (F-score, Z-score, and default Probability)	AA
WACC	7.9%



Revenue Growth Forecast	
Base Year	14%
6/30/2018	9%
6/30/2019	5%
6/30/2020	5%
6/30/2021	5%
6/30/2022	5%
6/30/2023	4%
6/30/2024	4%
6/30/2025	4%
6/30/2026	4%
6/30/2027	4%
Continuing Period	4%

Valuation	
NO PAT Margin Forecast	14.1%
Revenue to Capital Forecast	0.79
WACC Forecast	7.9%
Price per share Forecast	\$74.39
	\$81.52
	\$88.06
	\$94.82
	\$101.78
	\$108.96
	\$116.35
	\$124.35
	\$132.41
	\$141.06
	\$149.99

Return on Capital Forecast	
Base Year	11.1%
6/30/2018	5.6%
6/30/2019	5.9%
6/30/2020	6.5%
6/30/2021	6.6%
6/30/2022	6.7%
6/30/2023	6.8%
6/30/2024	6.8%
6/30/2025	7.2%
6/30/2026	10.2%
6/30/2027	9.7%
Continuing Period	9.2%