

## The Henry Fund

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## Hexcel (HXL)

### Materials – Advanced Composites

December 4, 2015

#### Investment Thesis

Hexcel (HXL) is an advanced composite company offering a diverse product selection to third parties. HXL derives roughly two thirds of its revenues from the commercial aerospace industry, which is now using roughly 50% composite materials in new construction. Additionally, the auto, construction, wind, and pipeline industries are seeing rapid consumption of composite materials. The composite industry has high investment potential, and HXL is the industry leader with top margins and industry diversification.

#### Drivers of Thesis

- The advanced composites end market is forecasted to reach \$24.9bn by 2020 representing a 7.2% CAGR. As more industries adopt composites, these growth levels could accelerate.
- HXL's largest clients, Airbus and Boeing, are projected to produce a record number of aircraft this year with a record high backlog on order. Additionally, the new Airbus A350 is the first commercial aircraft to be constructed of 50% composite materials, a trend sure to continue<sup>1</sup>.
- HXL is in the final stages of implementing their Enterprise Resource Planning system, software designed to streamline its aging logistical system. We are projecting it to have a near 7% impact on profit margin.

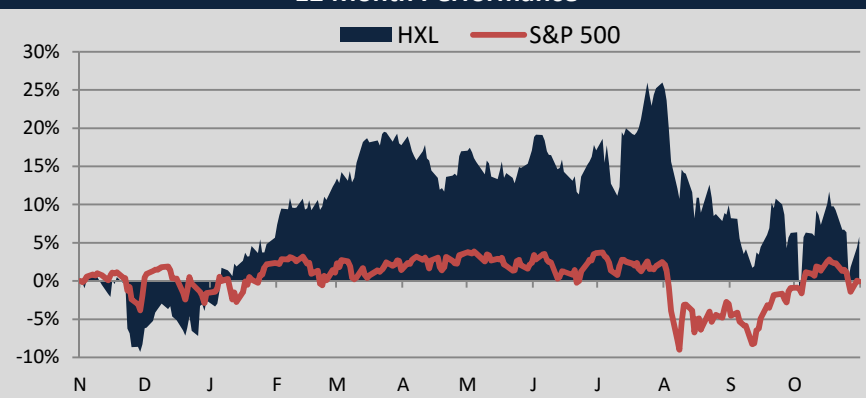
#### Risks to Thesis

- Though Boeing and Airbus are highly profitable companies, HXL puts its revenue streams at risk as 56% comes from the two companies<sup>2</sup>. Further diversification would lessen systemic risk related to the airline industry.
- Early Composite adapters in the auto industry have made exclusive partnerships with producers; HXL has yet to form such a strategic pairing.

#### Earnings Estimates

Year	2013	2014	2015E	2016E	2017E	2018E
EPS	\$1.88	\$2.16	\$2.11	\$2.83	\$4.43	\$5.27
Growth	14.6%	14.89%	-2.2%	33.9%	56.5%	18.9%

#### 12 Month Performance



#### Stock Rating

Buy

#### Target Price

\$56.00-60.00

Henry Fund DCF	\$58.80
Henry Fund DDM	\$66.00
Relative Multiple	\$30.50

#### Price Data

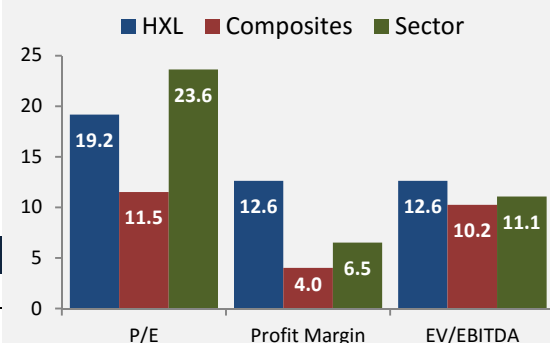
Current Price	\$46.40
52wk Range	\$38.91 – 54.72
Consensus 1yr Target	\$54.88

#### Key Statistics

Market Cap (B)	\$4.38
Shares Outstanding (M)	94.49
Institutional Ownership	100.00%
Five Year Beta	1.06
Dividend Yield	0.91%
Est. 5yr Growth	20.6%
Price/Earnings (TTM)	19.17
Price/Earnings (FY1)	18.05
Price/Sales (TTM)	2.31
Price/Book (mrq)	3.61

#### Profitability

Operating Margin	17.25%
Profit Margin	12.64%
Return on Assets (TTM)	9.59%
Return on Equity (TTM)	20.34%



#### Company Description

HXL is a specialized composite company based in Stamford, CT. HXL produces both composite materials and pre-made engineered products to sell to third parties. Around two thirds of HXL's revenue is derived from the commercial aerospace industry, with the remainder coming from industrials, and space and defense.

Chart and Data Table Source: Yahoo Finance

## EXECUTIVE SUMMARY

HXL is a materials company geared toward developing specialized composite and engineered materials. The field is highly technical offering products to a variety of industries; and that list of industries is growing.

HXL derives 56% of revenues from aircraft manufacturers Boeing and Airbus. We believe the positive momentum in the airline-manufacturing field offsets the risk of concentrating revenue streams to such a narrow field. The two are producing a record amount of aircraft, and new models are projected to be 50% composite materials. HXL's topline will naturally grow from the change in industry standards.

The automotive industry is poised to make a break through of adopting composites as part of standard production. Fuel efficiency has become a main concern of automakers and consumers. Further, the CAFE (Corporate Average Fuel Economy) act is setting federal standards for fuel efficiency. High-end hybrid vehicles have adopted carbon fiber reinforced plastics to fully construct the body, helping to boost fuel efficiency. As carbon fiber reinforced plastic drops in price though manufacturing efficiencies, the industry should see standard models adopting the composite bodies.

Composites are still growing in construction, pipelines, and other transportation. With recent adaptation into sporting goods, infrastructure and other everyday applications, the future is bright for composite expansion. We confidently recommend a BUY on HXL with a price point of \$56.00-60.00.

## COMPANY DESCRIPTION

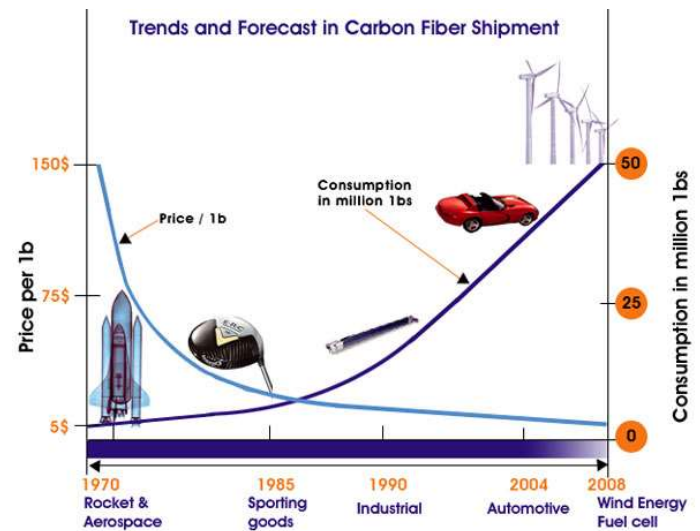
HXL operates two production segments: Composite Materials and Engineered Products. Below is a description of the company segments<sup>3</sup>.

### Composite Materials

**Carbon Fibers:** HXL creates carbon fibers for sale to third parties, and for their own manufactured products. Carbon fiber is a lightweight, high strength material that is becoming increasingly popular due to its strength to weight ratio. Once only used for military vehicles and spacecraft, carbon fiber has found its way into commercial vehicles and personally used objects. As higher emphasis is placed on fuel efficiency, carbon fiber

will only be substituted in place of current heavier/weaker products.

### Carbon Fiber Price vs. Consumption



Source: UTSL.edu

**Fabrics and Specialty Reinforcements:** This category is composed of a variety of materials such as carbon, aramid, fiberglass, quartz and ceramics. Reinforcements are used mainly on aircrafts, with components ranging from wings, engine fan blades, and overhead bins. The reinforcements division is growing beyond aircraft to auto, wind blades, oil exploration, boats, and most recently into sportswear.

**Prepregs:** HXL creates prepregs, or pre designed and manufactured products, which is ready to be used on final products for third party customers. Materials for prepregs can include glass, carbon, aramid, quartz and ceramic.

**Other Fiber-Reinforced Matrix Materials:** HexMC is a form of quasi-isotropic carbon fiber that enables small sized complex shape components to be mass-produced. HexTOOL is an advanced form of HexMC that is specially geared towards high temperature resistant components. Finally, HexFIT film material allows the manufacturing of large-scale carbon fiber products such as wind turbine blades.

**Resins:** HXL produces high strength resins, mostly designed for aerospace and industrial applications, with HexFlow being HXL's main product.

**Honeycomb:** HexWeb is HXL's honeycomb product. Honeycomb is a lightweight cellular structure composed

of nested hexagonal cells. Honeycomb also has the ability to be manufactured in complex shapes and forms. Honeycomb can be used as a high strength, low weight filler between two walls, such as a helicopter blade. It is also an effective shock absorber and noise dampener.

## Engineered Products

**Composite Structures:** The engineered composite structures are finished products created by HXL and delivered to third party vendors. These products include aircraft components, wing panels, flight deck panels, and helicopter blades.

**Engineered Honeycomb:** This sub category focuses on aircraft sub components and semi-finished components. Helicopter blades, engine nacelles, and aircraft surfaces are all included in this category.

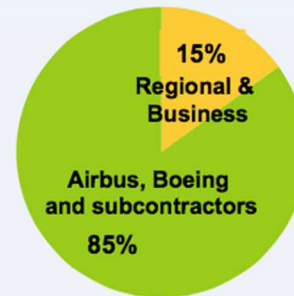
**HexMC Molded Composite Parts:** HexMC are complex geometric parts for commercial aircrafts. Their target is to continue to replace metal parts on airplanes with the lighter weight HexMC. Successful implementation has been seen in window frames, structure brackets, and fittings.

HXL offers these products and materials to their customers through one of there three markets. HXL reports sales through the commercial aerospace market, the industrial market, and the space and defense market.

## Commercial Aerospace Market

The commercial aerospace market is the largest for HXL accounting for approximately 66% of 2014 revenue. Of the 66%, 85% of the aerospace market is derived from Boeing, Airbus, and their subcontractors (approximately 56% of overall 2014 revenue). The remaining 15% of revenue was from regional and business aircraft. Though initial development of carbon fiber and specialized material were manufacture and developed for military and space exploration, it is now the commercial aerospace industry that drives new development. The airlines determination to make aircraft lighter and more fuel-efficient has driven airplane manufacturers to substitute traditional materials for carbon-based substitutes. In 2014, Qatar Airways was delivered an Airbus A350 XWB, which had a composite composition of 53% by weight. This is a vast improvement from even the Boeing 777, first delivered in 1995, which consists of 11% composite composition.

## Revenue by Customer

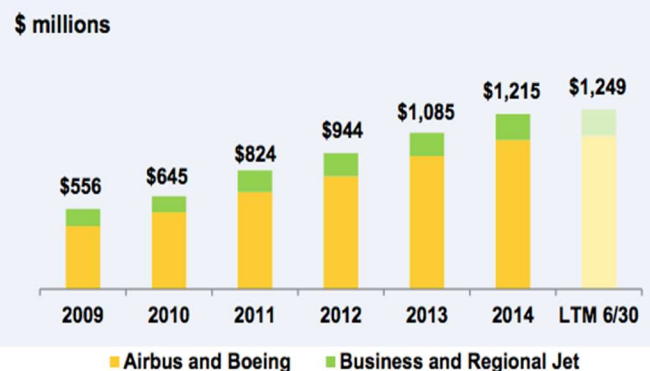


As of December 31, 2014

Source: HXL Investor Presentation

As will be discussed later, HXL's large commercial aerospace division is dominated by two revenue sources. Having 56% of total revenue streams coming from Boeing and Airbus does put profitability at risk if the revenue streams were damaged. However, we see there to be several natural hedges to ensure this important revenue stream is unharmed. First, the two companies dominate the aircraft manufacturing industry. With the high barriers to entry and tight airline/manufacturer relationships, these two are well protected to retain their duopoly. Second, Airbus and Boeing have produced more aircraft each year since 2008. Further, they currently have a record backlog. Finally, aircraft manufactures are continually more reliant on composite based material, which explains why HXL's aerospace revenue has been the most consistent grower.

## Commercial Aerospace Revenues



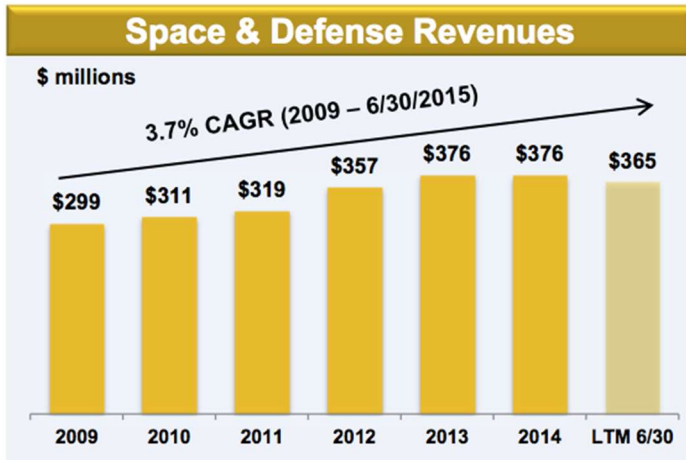
Source: HXL Investor Presentation

## Space and Defense

HXL's space and defense segment is the second highest in terms of revenue accounting for roughly 19% of 2014 sales. The space and defense market is extremely

important to retain exposure to. As noted earlier, composite material use was first adopted by this industry. It is very likely advanced development will continue to come from space and defense applications.

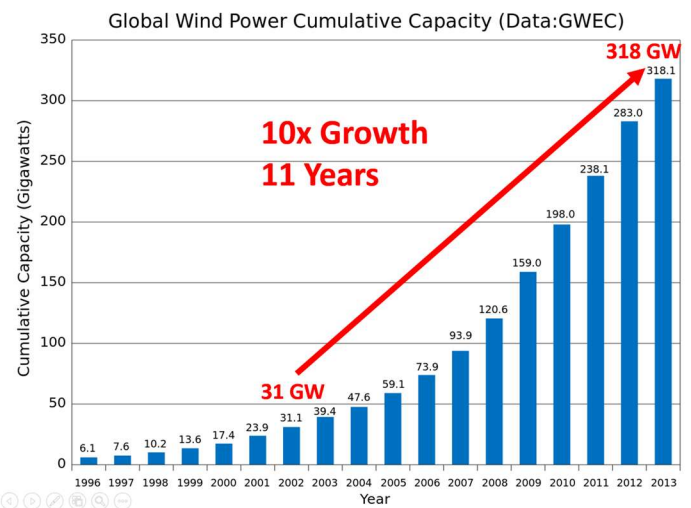
Given strict technical specifications required by the space and defense industry, a company must be an approved supplier to each specific program. HXL is an approved supplier to over 100 helicopter, military, and space programs. The space and defense revenue stream is well diverse in comparison to aerospace, as the top 10 programs account for only 55% of total revenue. HXL has benefited by being a supplier for programs that have enjoyed long and successful careers (Blackhawk, AH-64 Apache, C-17, and the F/A-18F/A Hornet to name a few). They have also become key suppliers for several new, state of the art projects with high budgets and long expected lives (V-22 Osprey and F-35 Joint Strike Fighter).



Source: HXL Investor presentation

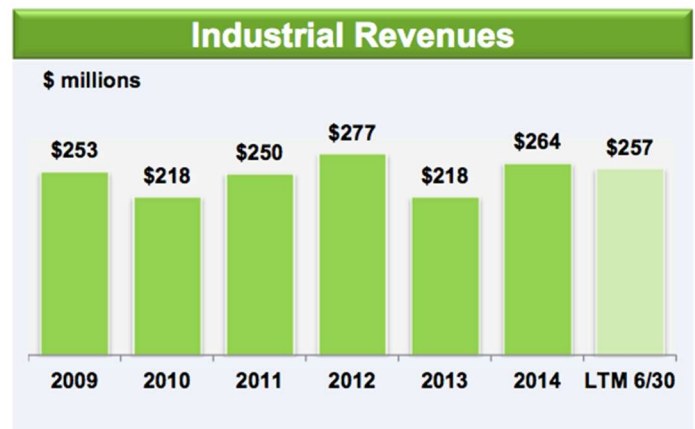
## Industrial

Industrial is the smallest market for HXL accounting for just 11% of revenue in 2014. HXL counts all revenue streams not categorized as commercial aerospace and space & defense as industrial. As of late, HXL has seen most success within the wind energy sub-industry. With the growing popularity of wind power production and the size of blades growing, composite materials are becoming more necessary in the construction and production of windmills. As little as 20 years ago, turbine blades averaged roughly 150ft in diameter. Nowadays, they are able to reach 400ft in diameter given the advances in composite materials<sup>4</sup>. The wind power industry has growth 10x in the last decade and is projected to continue its growth.



Source: Rameznaam.com

Additional revenue streams in the industrial category include recreational sports and transportation. Recreational sports are the smallest sub-industry due to the relatively small price point and limited markets. We feel that the transportation sub-industry has the highest growth potential as transportation aims to be more fuel-efficient. Just as the aerospace industry has embraced composite materials, we see this trend gaining momentum in other transportation methods. Auto, rail, and nautical industries all stand to benefit from cutting weight and increasing strength.



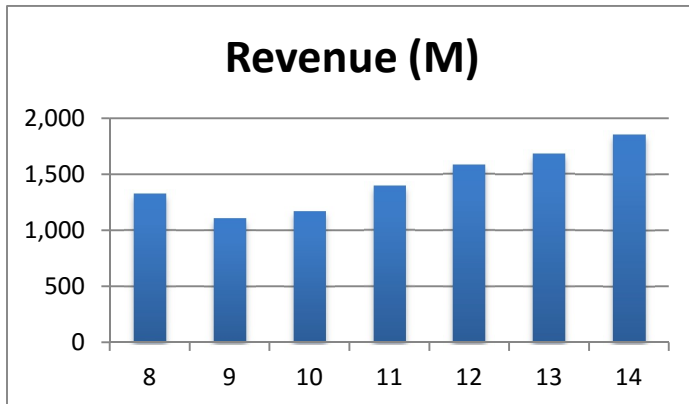
Source: HXL Investor presentation

## Company Analysis

HXL operates in the highly technical composite materials industry. Though it is concerning that 56% of revenues are earned from Boeing and Airbus, the competitive advantage HXL owns in the highly technical field suggest that its market share from the aerospace giants is safe. Outside of the commercial aerospace field, HXL has done



a much better job at diversifying its revenue streams and applying their advanced composites to new industries.



Source: HXL 10-K

- HXL offers the strongest strength to weight ratio for advanced composites placing them at a competitive advantage in the advanced composite field.
- The main risk factor is Boeing and Airbus being 56% of revenue. Additionally, a decrease in military spending could have an adverse affect on HXL's second largest revenue segment.
- Increasing demand for light weight/high strength materials in new aircraft should offer HXL a steadily increasing revenue stream in their largest segment.
- HXL has experienced 5 consecutive years of growth in both revenue and earnings per share. HXL's ability to grow top and bottom line numbers show capacity to increase output and run lean day to day operations. Implementation of the ERP with further operating margins.

## RECENT DEVELOPMENTS

### 3Q 2015 Earnings Miss

HXL released their 3Q15 earnings on October 19<sup>th</sup> and reported mixed results<sup>5</sup>. Year over year earnings were \$448.8mm, down 0.7% from 2014 (reportedly up 2.1% in constant currency). The strong Commercial Aerospace growth of 7.4% was more than offset by the 9.9% decrease in Space and Defense, and the 6.3% decrease in Industrial sales. Net income for the quarter was \$53.5mm, down 4.1% year over year, and earnings per share decreased 3.5% to \$0.55. Management stayed optimistic on the beat citing the declines to currency fluctuation (approximately 50% of revenue is international) and the accelerated finish of their Enterprise Resource Planning (ERP) system. The initiative

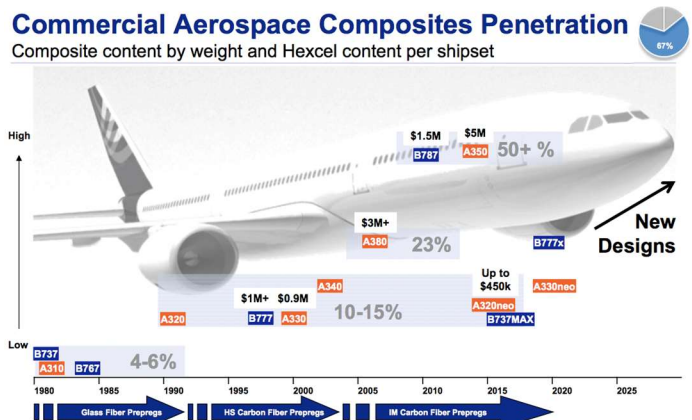
is aiming to increase production volume by vertically integrating capital equipment, and to increase the material capabilities in 24 of their production plants (see section below). The integration is predicted to organically boost the volume of production and operating margins in both 2016 and 2017.

	Quarter Ended September 30,			Nine Months Ended September 30,		
(In millions, except per share data)	2015	2014	% Change	2015	2014	% Change
Net Sales	\$ 448.8	\$ 451.9	-0.7%	\$ 1,396.3	\$ 1,383.7	0.9%
Net sales change in constant currency			2.1%			4.6%
Operating Income	78.0	79.0	-1.3%	251.2	228.7	9.8%
Net Income	53.5	55.8	-4.1%	183.3	156.5	17.1%
Diluted net income per common share	\$ 0.55	\$ 0.57	-3.5%	\$ 1.88	\$ 1.58	19.0%
Non-GAAP Measures for y-o-y comparisons:						
Adjusted Operating Income (Table C)	\$ 78.0	\$ 79.0	-1.3%	\$ 251.2	\$ 234.7	7.0%
As a % of sales	17.4%	17.5%		18.0%	17.0%	
Adjusted Net Income (Table C)	53.5	56.1	-4.6%	171.7	160.7	6.8%
Adjusted diluted net income per share	\$ 0.55	\$ 0.57	-3.5%	\$ 1.76	\$ 1.62	8.6%

## Enterprise Resource Planning System (ERP)

As mentioned above, HXL will soon be completing the implementation of their ERP system. The ERP is business management software designed to increase productivity. The software aims to improve product planning, manufacturing, marketing and sales, inventory management, shipping logistics and payment<sup>6</sup>. HXL is expecting high growth over 2016 and 2017 (we are projecting revenue growth of 17% and 14% respectively). HXL has accelerated the implementation to improve its logistical efficiencies to manage the boosted sales. The ERP will be critical in being able to meet anticipated demand. We feel the ERP will lower SG&A, improve the supply chain process, and boost gross margins upwards of 36%. This implementation will help turn around the 3Q earnings miss, and stagnant 2015 yearly earnings.

## First A350 XWB Delivered to Qatar Airways



Source: HXL Investor Presentation

As mentioned above, Airbus delivered the first A350 XWB to Qatar Airways on December 22, 2014. HXL President and CEO congratulated Airbus on the milestone quoting, "Hexcel is proud to be a partner-supplier to Airbus and to have Hexcel carbon fiber and composite materials incorporated into so many structural parts of the A350 XWB"

The delivery of the aircraft marks a milestone for the airlines, as it was the first commercial airplane to utilize over 50% composite materials to construct the plane. The military has surpassed the benchmark previously, however seeing the commercial industry move this way bodes well for HXL. HXL's current contribution to each A350 is \$5 million. HXL will be producing the lower wing cover, which at 32 feet long is the biggest single civil aviation part ever made from carbon fiber.

## INDUSTRY TRENDS

The composites industry is rapidly growing. Composites are increasingly becoming a higher percentage of airplanes and vehicles. Percentage of composites is only expected to grow as advances in technology allow materials such as carbon fiber to be produced at lower costs. Additionally, as the transportation industry becomes increasingly concerned about cutting weight to save on fuel, composites will be increasingly in demand.

### Increased Production Boeing and Airbus

#### Aircraft Delivered 2008-2009:

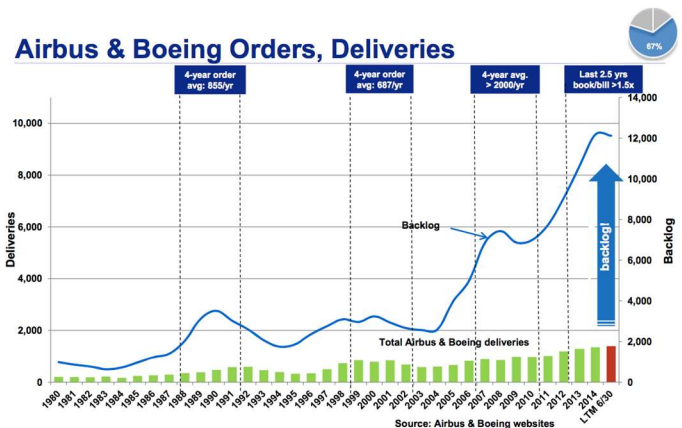
Year	Airbus	Boeing	Total
2008	483	375	858
2009	498	481	979
2010	510	462	972
2011	534	477	1,001
2012	588	601	1,189
2013	626	648	1,274
2014	629	723	1,352
Backlog	-	-	12,175

Source: HXL 2014 10-k

Airbus and Boeing have increased their total output of aircraft every year since 2008. The trend is projected to continue through 2015. Production increases have been fueled by improving airline profitability, rising air passenger traffic, and recovering air cargo traffic. As airlines continue to repair their balance sheets, they are more willing and likely to begin modernization of their fleets<sup>8</sup>. HXL's revenue will have a direct correlation with

increased aircraft production, assuming no substitutions occur. Further, the sales increase could be accelerated as modern aircraft are utilizing more composite materials in place of traditional materials. The combination of increased aircraft production and higher composite material used in each aircraft gives HXL a bright investment future.

Airbus and Boeing are also facing a record backlog of 12,175 aircraft. This can be seen as a positive and negative. The high backlog will ensure the manufacturers will be producing a high level of aircraft in the coming years. However, if production numbers are not met, clients could be discouraged by the long wait time<sup>9</sup>. Both firms are planning on increasing production from last year, but the sustainability of such production must be monitored.



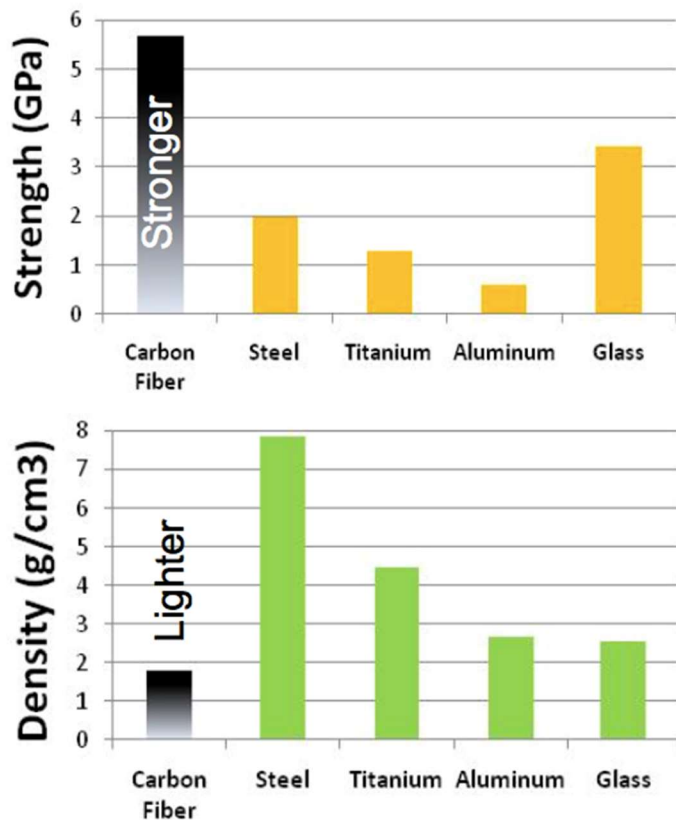
Source: HXL Investor Presentation

### Carbon Fiber

Carbon fiber has always been a popular alternative to other materials due to its uneatable strength to weight ratio. However, the process, which was patented in the 50's, has proven to be expensive. It starts with polymerization, or turning the polyacrylonitrile (PAN) into the molecular backbone of the carbon fiber<sup>10</sup>. Next the PAN fibers are formed in a process called spinning. Next, the fibers are oxidized by going through a series of ovens, allowing oxygen molecules to bond with the PAN. Last is the carbonation stage, where the PAN enters another series of furnaces followed by oxygen chambers to create purer carbon formula. The number and temperature of the ovens will determine the final carbon purity of the fiber. Only recently has the process become more efficient. It currently cost about \$10-12 to create a pound of carbon fiber, compared to about \$1 to create a pound of steel. However, the price of carbon fiber is

about a third of what it was a decade ago. As the price falls, more industries will adapt the product. We now even see carbon fiber being used in sports equipment. As the process improves, expect to see consumption grow. Further, prices are dropping because manufacturers are able to produce the product cheaper, so company margins should remain unaffected.

### Carbon Fiber Strength and Weight vs. Competitors

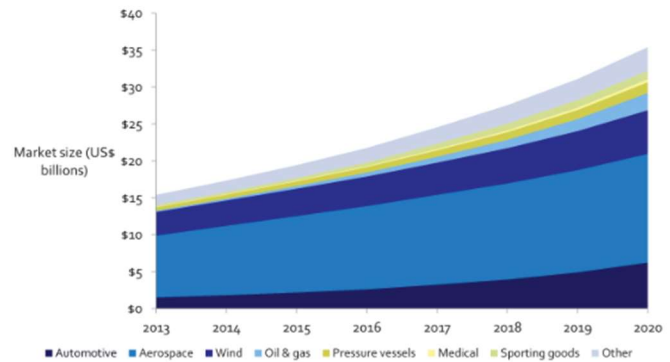


Source: HXL Investor Presentation

### Auto Industry

Similarly to the aerospace industry, auto manufacturers are beginning to see the benefits of using composites in the construction of their product. With fuel efficiency turning into a priority, replacing traditional steel auto bodies with composite materials can be seen as an easy fix to reduce the body weight and increase the mileage. The auto industry currently represents about \$2bn of the roughly \$15bn carbon fiber industry. This number is expected to triple to \$6bn by 2020<sup>11</sup>. The Corporate Average Fuel Economy (CAFE) standard implementation will place a heavier emphasis on fuel reduction, further raising demand for composites to the auto industry.

### Composites Industries



With the automotive growth represented on the bottom of the graph above, it is clearly outpaced by the giant aerospace industry, but still experiencing a favorable trend. The automaker BMW recently has partnered with Boeing to gain insight on how to implement carbon fibers in auto frames. This spring, BMW released their i3 hybrid vehicle with the body being made completely with carbon fiber reinforced plastics. As auto makers begin to explore the further use of carbon fiber in their cars, it is important for existing composite companies to establish both the company relationships and positions in the supply chain before the popularity of the industry fully takes hold. HXL does have exposure to the auto market with the possibility and expertise to grow, but does not have an exclusive partnership to date.

### Construction Materials

The construction industry has seen the benefits of composite materials and adaptation has been growing. In 2013, composites in construction grew 4.9%. In recent years, the government has made higher allocations to composites while retrofitting old infrastructure, bridges, and roads. Other uses of composites in construction are rebar, grating, structural profiles, utility poles, and handrails. Composites have a relatively small penetration compared to other materials, but the size of the industry creates a large demand on the specialized market. As new uses continue to be discovered, the construction industry will become more important to the composites field.

### MARKETS AND COMPETITION

The composites market is incredibly complex as the companies within the industry operate in several different capacities. Below is an outline of the composites industry.

Barriers to entry are high for the industry. It takes a heavy amount of capital and advanced technological skill to create and operate a composite factory. Advanced equipment, highly trained personnel, and a knowledgeable sales staff are all needed for entry to the field. Additionally, R&D is required to stay competitive, which is very capital intensive in the composites field.

Power of suppliers is low, as the real value add in making composite materials comes with the technical process companies like HXL are able to perform. Therefore, composite companies can shop around for the cheapest raw materials available without worry of continuing relations with a given supplier.

Power of buyers can range from medium to high, depending on the industry. Large buyers such as Boeing and Airbus can afford to price the competition to find the best producer, from the select few there are. However, when new firms, specifically in the auto industry, plan to expand composite operations they usually partner with one or two firms. When contracts are locked in, they are at risk of prices dropping over time and being unable to negotiate for a cheaper price. This situation is one that gives lower power to the buyers.

Competition is medium in the composite field. As seen below, there are truly three direct competitors in diversified composites. These companies are able to build relationships with several buyers. HXL does have an advantage as it was founded in the 50's and has established itself as a dominant player.

Fear of substitution shares several of the same characteristics as competition. Each of the four companies has relationships with the buyers. Unless pricing or quality drastically changes from one of the companies, existing revenue streams should remain relatively constant. A major threat of substitution could come from an outside player. If a major corporation came to market with a product of superior quality, or at a lower price point, buyers may be inclined to switch to the newcomer.

## Peer Comparisons

HXL is the clear leader in metrics amongst its peers. Triumph Group, B/E Aerospace, and Spirit AeroSystems have the most comparable business model to that of HXL. Each company is a diversified, specialized composite company, offering their products to multiple industries.

Spirit has the highest market cap, outperforming the nearest competitors by roughly \$2.5 bn. However when the EV/EBITDA is compared, HXL has nearly a two-turn advantage over SPR, suggesting higher growth prospects for HXL.

## Comparative Metrics Snapshot

	HXL	SPR	TGI	BEAV
Market Cap	4.63B	7.36B	2.04B	4.84B
EV/EBITDA	12.33	7.23	10.42	13.09
Revenue	1.87B	6.61B	3.91B	2.71B
Profit Margin %	12.64	8.23	4.28	-0.49
P/E	17.95	12.96	7.22	14.43
P/S	2.33	1.12	0.54	1.79
P/B	3.64	3.31	0.93	55.21

TGI: Triumph Group Inc.

BEAV: B/E Aerospace Inc.

SPR: Spirit AeroSystems Holding Inc.

The metric that really stands out in the peer comparison is profit margin. BEAV has a negative margin, eliminating any relevance for investing at this time. HXL has nearly 3x the profit margin as TGI, and 1.5x higher than its closest competitor SPR. Not only do HXL's margins stand out against its competitors, but also the EPR is projected to further increase profitability in the coming quarters. With solid relationships in place with third parties, HXL is the clear investment recommendation in the industry.

## ECONOMIC OUTLOOK

We see the economic outlook to be favorable for HXL during the investment horizon. Below are major issues we have considered in our investment recommendation:

### GDP

Like most B2B industries, HXL's profitability will be partially tied to the GDP. The Henry Fund analysts are projecting a US GDP of 2.6% over the next six months, and reaching 3.05% in the next two years. It is becoming increasingly accepted that normal GDP growth in the US to be at or around 3% yearly. Therefore, the GDP outlook is fair for sustainable growth for HXL.

### Inflation

Inflation will have direct impact on HXL's cost of goods sold, as well as the prices companies pay for aircraft and consumers for automobiles. We are projecting inflation



to hit 1.6% in two years. The US Federal Reserve targets 2% inflation. Therefore, we foresee inflation rates to be a non-factor in the valuation.

## Consumer Confidence

Perhaps the most important metric is consumer confidence. Consumer confidence fuels the airline industry, the new car market, and aides in construction. In the next six months, the Henry Fund analysts are forecasting increasing consumer confidence. In the next two years, we are forecasting increasing/neutral confidence. Our optimism confirms our investment thesis, as the key industries are likely to continue to be strong.

## CATALYSTS FOR GROWTH

The composite industry has tremendous opportunity for growth. Composites are rapidly expanding their product base among existing industries (i.e. commercial aerospace, transportation, construction, and piping). In the case of aerospace, composites have seen their composition share increase to over 50% of new airplanes manufactured. If composites can achieve the same penetration into the auto industry, HXL could see revenues soar. Further, the creation of new products through R&D programs, or the adaptation into new industries, will also provide a positive catalysts for HXL.

## INVESTMENT POSITIVES

- Both Boeing and Airbus are projected to produce record aircraft this year, and have a record backlog. If production keeps up with the current trend, HXL should see corresponding revenue growth.
- The automobile industry is showing strong signs of adapting higher amounts of composites into their vehicle designs. This again will have a direct impact on HXL top line.
- HXL is implementing their new EPR system. Once fully operational, HXL will begin to see margins and production once again top three-year highs.

## INVESTMENT NEGATIVES

- HXL derives 56% of its revenue from Boeing and Airbus. Though the industry appears solid, a lack of diversification creates an increased risk on the HXL top line.
- Competitor Precision Castparts Corp. (PCP) was just acquired by Warren Buffet's Berkshire Hathaway.

PCP will now have accesses to additional capital funding and supply chain capabilities.

## VALUATION

We have confidently set our target price between \$56.00-\$60.00, representing approximately 20% upside potential. We believe HXL can achieve our price target in the investment horizon based on our list of assumptions below:

- Revenue growth slowed in 2015 based on the reasons given in the 3Q15 earning section. We have year-end growth projected at 1% to bring the \$1.85bn 2015 revenue in line with management guidance. Growth in 2016 and 2017 is projected to accelerate to 12% and 17% respectively. This is based off the Enterprise Resource Planning (ERP) imitative, and high production expectations from Boeing and Airbus. Growth is projected to slow to 6% in 2019.
- The 2014 profit margins hit a three-year high at 27.5%. With the slow growth in 2015, profit margins are projected remain flat. Again, with the accelerated ERP completion, efficiencies are projection to widen. Profit margins are projected to reach 36% by the end of the forecast.
- Past Research and Development spending has remained relatively stable between 2.3 and 2.5%. We have increased R&D to 3% of sales by 2019. As aircraft manufacturers aim to increase composites in each aircraft, further R&D will be needed to remain competitive in the supply chain.
- HXL currently has \$415mm in long-term debt outstanding, all of which is schedule to mature in 2019. HXL is projected to have sufficient FCF and cash balance to cover the bond maturity. However, we are projecting a 2017 \$125mm bond offering to cover short-term liquidity. Through the remainder of the forecasted, HXL is projected to have sufficient liquidity so support operations with cash and an ongoing \$283mm credit facility.
- PPE is projected to grow by 15% and 14% in 2015 and 2016 respectively. The ERP and an additional production plant recently announced in France fuel the higher growth rates. High single digit growth is expected during the remainder of the model.
- Inventories are expected to grow at a constant 10% through the forecast. This is slightly above the previous 5-year average, which is justifiable again by increasing outputs through the ERP.

**Discounted Cash Flow:** Our DCF and Economic Profit models both produced a target price of \$58.80. Our target price of \$56.00-60.00 is mainly based the DCF and EP model. Based off our sensitivity analysis, revenue growth rate and COGS are the most important input for the model. These will have the biggest influence on free cash flows and the reported numbers at year-end should be adjusted.

**Dividend Discount Model:** The DDM produced a target price of \$66.00. This price came in higher than the DCF and our target price. The DDM was widely ignored as HXL only began paying a dividend in 2015. Once we begin observing how the company adjusts its dividend strategy in the coming years, we will be able to place more confidence in this model.

**Relative P/E Model:** The P/E model produced a target price of \$30.50. This was the lowest of the three models, and vastly below the DCF and our target price. We disregarded the P/E model due to a lack of true comparisons that can be made with other companies. Often, large defense companies, such as Boeing, are counted as competitors because they both have ties to the defense industry. Other pure competitors in the materials sector do not have the size, product diversification, or earnings structure as HXL. Therefore, it is difficult to accurately compare P/E ratios with HXL and others in the industry.

HXL is covered by nine analysts who have placed a 12-month consensus estimate of \$54.88. Five analysts rate HXL a strong buy, one a buy, and the last three a hold. Additionally, over the last four quarter HXL has beaten analyst estimates. We are confident recommending a buy given the 20% increase reflected in our target price. Our price exceeds that of consensus estimates, however, the analysts are projecting over a one-year investment horizon. Our DCF incorporates five years of earnings including the years of 2016 and 2017 with higher than average growth due to the Enterprise Resource Planning initiative.

## KEYS TO MONITOR

### Production Price and Volume

HXL's implementation of the ERP is projected to widen margins and increase productivity. HXL only recorded a 1% revenue growth rate last year but still maintained a 27% gross margin. With new plants coming online and updating of older facilities are updated; the new software

should increase production and margins as we have projected in our model (see valuation section).

### Composites as Percent of End Products

The aerospace industry is for the first time seeing aircraft being built using 50% composite material. The composite industry is very optimistic about the future of the commercial aerospace composite growth. Indications are pointing to the auto industry following the same direction. Though BMW did release its first all composite vehicle frame, it is far from the main stream. If the auto industry does aim towards higher composite percentage in their bodies, HXL could see a similar boost it saw from aerospace.

### Industry Innovations

Carbon fiber has only been in existence for 50 plus years with only minor changes to the process. However, since then many other composite materials have been fabricated and produced. Honeycomb, resins, and adhesives are only a few products that have been developed in the composite family. Undoubtedly, more products will be created and improved upon to push the weight strength ratio further. With HXL's anticipated increase in R&D, they should be able to lead the pack.

### Alternative Uses

Expanded use of composites has mostly been limited due to the high price. As the price has declined, due to efficiencies in development, more industries have begun adapting composites. Sports equipment has notoriously been taken over by carbon fiber. Everything from golf clubs to down hill skis have adopted carbon fiber because of its strength, flexibility, and lightweight characteristics. As the price continues to fall, more industries will begin utilizing composites, only increasing demand.

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**Hexcel**
*Revenue Decomposition*

<i>Fiscal Years Ending 31/12/2015</i>	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
Net Sales by Geography:								
United States	801,400	871,000	933,200	937,028	1,049,471	1,252,438	1,377,682	1,460,343
Growth		8.68%	7.14%	0.41%	12.00%	19.34%	10.00%	6.00%
% or Total	50.78%	51.90%	50.29%	50.00%	50.00%	51.00%	51.00%	51.00%
International:								
France	302,900	321,100	346,900	337,330	388,304	454,316	499,748	529,732
Growth		6.01%	8.03%	-2.76%	15.11%	17.00%	10.00%	6.00%
% or Total	19.19%	19.13%	18.70%	18.00%	18.50%	18.50%	18.50%	18.50%
Spain	150,600	164,800	183,400	187,406	199,399	233,297	256,627	272,025
Growth		9.43%	11.29%	2.18%	6.40%	17.00%	10.00%	6.00%
% or Total	9.54%	9.82%	9.88%	10.00%	9.50%	9.50%	9.50%	9.50%
United Kingdom	114,700	110,900	135,800	140,554	157,421	184,182	202,600	214,756
Growth		-3.31%	22.45%	3.50%	12.00%	17.00%	10.00%	6.00%
% or Total	7.27%	6.61%	7.32%	7.50%	7.50%	7.50%	7.50%	7.50%
Austria	105,000	96,200	112,600	121,814	136,431	159,625	175,587	186,122
Growth		-8.38%	17.05%	8.18%	12.00%	17.00%	10.00%	6.00%
% or Total	6.65%	5.73%	6.07%	6.50%	6.50%	6.50%	6.50%	6.50%
Other	103,600	114,200	143,600	149,924	167,915	196,461	216,107	229,073
Growth		10.23%	25.74%	4.40%	12.00%	17.00%	10.00%	6.00%
% or Total	6.56%	6.80%	7.74%	8%	8%	8%	8%	8%
Total	1,578,200	1,678,200	1,855,500	1,874,055	2,098,942	2,455,762	2,701,338	2,863,418
Growth		6.34%	10.56%	1.00%	12.00%	17.00%	10.00%	6.00%



**Hexcel**
*Income Statement*

<i>Fiscal Years Ending 31/12/2015</i>	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
<b>Net sales</b>	<b>1,578,200</b>	<b>1,678,200</b>	<b>1,855,500</b>	<b>1,874,055</b>	<b>2,098,942</b>	<b>2,455,762</b>	<b>2,701,338</b>	<b>2,863,418</b>
Cost of Sales	1,114,300	1,164,900	1,275,500	1,274,731	1,371,584	1,481,310	1,581,846	1,689,104
Depreciation	57,200	59,300	71,200	85,436	97,397	105,189	115,707	127,278
Gross margin	406,700	454,000	508,800	513,888	629,961	869,263	1,003,784	1,047,036
Selling, general & administrative expenses	130,700	141,400	149,100	156,555	164,383	172,602	181,232	190,294
Research & technology expenses	36,700	41,700	47,900	55,085	65,000	72,800	81,536	90,505
Other income (expense), net	9,500	-	(6,000)	-	-	-	-	-
Operating income (loss)	248,800	270,900	305,800	302,248	400,578	623,861	741,016	766,237
Interest expense, net	10,000	7,300	8,000	8,300	8,300	10,790	10,790	2,490
Provision (benefit) for income taxes	74,100	76,000	89,300	90,674	120,173	187,158	222,305	229,871
Equity in earnings (losses) from & gain (loss) on sale of investments in affiliated companies	700	-	-					
Equity in earnings of investments in affiliated companies	-	1,300	1,400	1,540	1,694	1,863	2,050	2,255
Net income (loss)	164,300	187,900	209,400	201,734	270,411	424,049	505,871	531,621
Year end shares outstanding	99,900	98,900	95,500	95,455	95,520	95,696	95,983	96,381
Net income (loss) per share-basic	1.64	1.88	2.16	2.11	2.83	4.43	5.27	5.52
Dividends Per Share	-	-	-	0.40	0.40	0.45	0.45	0.50

Hexcel  
Income Statement

Fiscal Years Ending 31/12/2015	2012	2013	2014	2015F	1Q16	2Q16	3Q16	4Q15	2016F	1Q17	2Q17	3Q17	4Q17	2017F	1Q18	2Q18	3Q18	4Q18	2018F	1Q19	2Q19	3Q19	4Q19	2019E
<b>Net sales</b>	<b>1,578,200</b>	<b>1,678,200</b>	<b>1,855,500</b>	<b>1,874,055</b>	<b>419,788</b>	<b>629,682</b>	<b>566,714</b>	<b>482,757</b>	<b>2,088,942</b>	<b>491,152</b>	<b>736,729</b>	<b>663,056</b>	<b>564,825</b>	<b>2,455,762</b>	<b>540,268</b>	<b>810,401</b>	<b>729,361</b>	<b>621,308</b>	<b>2,701,338</b>	<b>572,684</b>	<b>859,025</b>	<b>773,123</b>	<b>658,586</b>	<b>2,863,418</b>
Cost of Sales	1,114,300	1,164,900	1,275,500	1,274,731	274,317	411,475	370,328	315,464	1,371,584	296,262	444,393	399,954	340,701	1,481,310	316,369	474,554	427,098	363,825	1,581,846	337,821	506,731	456,058	388,494	1,689,104
Depreciation	57,200	59,300	71,200	85,436	19,479	29,219	26,297	22,401	97,397	21,038	31,557	28,401	24,193	105,189	23,141	34,712	31,241	26,613	115,707	25,456	38,183	34,365	29,274	127,278
Gross margin	466,700	454,000	508,800	513,888	125,992	188,988	170,090	144,891	629,961	173,853	260,779	234,701	199,930	869,263	200,757	301,135	271,022	230,870	1,003,784	209,407	314,111	282,700	240,818	1,047,036
Selling, general & administrative expenses	130,700	141,400	149,100	156,555	32,877	49,315	44,383	37,808	164,383	34,520	51,781	46,603	39,698	172,602	36,246	54,370	48,933	41,683	181,232	38,059	57,088	51,379	43,768	190,294
Research & technology expenses	36,700	41,700	47,900	55,085	13,000	19,500	17,550	14,950	65,000	14,560	21,840	19,656	16,744	72,800	16,307	24,461	22,015	18,753	81,536	18,101	27,152	24,436	20,816	90,505
Other income (expense), net	9,500	-	(6,000)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating income (loss)	248,800	270,900	305,800	302,248	80,116	120,173	108,156	92,133	400,578	124,772	187,158	168,442	143,488	623,861	148,203	222,305	200,074	170,434	741,016	153,247	229,871	206,884	176,234	766,237
Interest expense, net	10,000	7,300	8,000	8,300	1,660	2,490	2,241	1,909	8,300	2,158	3,237	2,913	2,482	10,790	2,158	3,237	2,913	2,482	10,790	498	747	672	573	2,490
Provision (benefit) for income taxes	74,100	76,000	89,300	90,674	24,035	36,052	32,447	27,640	120,173	37,432	56,147	50,533	43,046	187,158	44,461	66,691	60,022	51,130	222,305	45,974	68,961	62,065	52,870	229,871
Equity in earnings (losses) from & gain (loss) on sale of investments in affiliated companies	700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Equity in earnings of investments in affiliated companies	-	1,300	1,400	1,540	339	508	457	390	1,694	373	559	503	429	1,863	410	615	553	471	2,050	451	676	609	519	2,255
Net income (loss)	164,300	187,900	209,400	201,734	54,082	81,123	73,011	62,194	270,411	84,810	127,215	114,493	97,531	424,049	101,174	151,761	136,585	116,350	505,871	106,324	159,486	143,538	122,273	531,621
Year end shares outstanding	99,900	98,900	95,500	95,455	95,471	95,488	95,504	95,520	95,520	95,564	95,608	95,652	95,696	95,696	95,768	95,839	95,911	95,983	95,983	96,082	96,182	96,281	96,381	96,381
Net income (loss) per share-basic	1.64	1.88	2.16	2.11	0.57	0.85	0.76	0.65	2.83	0.89	1.33	1.20	1.02	4.43	1.05	1.58	1.42	1.21	5.27	1.10	1.65	1.49	1.27	5.52
Dividends Per Share	-	-	-	0.40	0.10	0.10	0.10	0.10	0.40	0.10	0.10	0.10	0.15	0.45	0.10	0.10	0.10	0.15	0.45	0.12	0.12	0.13	0.13	0.50

**Hexcel**
*Balance Sheet*

<i>Fiscal Years Ending 31/12/2015</i>	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
<b>Assets</b>								
Cash & cash equivalents	32,600	65,500	70,900	120,299	243,132	730,079	1,121,810	1,539,000
Accounts receivable, net	229,000	232,400	233,500	235,835	242,910	250,197	257,703	257,704
Inventories, net	232,800	265,300	290,100	319,110	351,021	386,123	424,735	467,209
Prepaid expenses & other current assets	81,300	93,200	87,200	82,840	78,698	74,763	71,025	67,474
<b>Total current assets</b>	<b>575,700</b>	<b>656,400</b>	<b>681,700</b>	<b>758,084</b>	<b>915,761</b>	<b>1,441,163</b>	<b>1,875,274</b>	<b>2,331,387</b>
Property, plant & equipment, net	914,400	1,067,400	1,238,200	1,423,930	1,623,280	1,753,143	1,928,457	2,121,303
Goodwill & other intangible assets	57,800	61,000	59,800	56,810	53,970	51,271	48,707	46,272
Investments in affiliated companies	22,600	23,300	34,200	39,330	45,230	52,014	59,816	68,788
Deferred tax assets	15,400	10,300	-	0	0	0	0	0
Other assets	17,200	17,700	22,500	28,125	33,750	40,500	46,575	51,233
<b>Total assets</b>	<b>1,603,100</b>	<b>1,836,100</b>	<b>2,036,400</b>	<b>2,306,279</b>	<b>2,671,991</b>	<b>3,338,090</b>	<b>3,958,829</b>	<b>4,618,983</b>
<b>Liabilities</b>								
Short-term borrowings & current maturities of long-term debt	16,600	3,000	1,300	0	0	0	0	415,000
Accounts payable	115,700	135,900	175,000	201,250	229,425	261,545	287,699	316,469
Accrued compensation & benefits	58,800	89,200	66,400	69,720	73,206	76,866	80,710	84,745
Other accrued liabilities	44,200	40,600	67,900	74,690	82,159	90,375	99,412	109,354
<b>Total current liabilities</b>	<b>235,300</b>	<b>268,700</b>	<b>310,600</b>	<b>345,660</b>	<b>384,790</b>	<b>428,786</b>	<b>467,821</b>	<b>925,568</b>
Long-term notes payable	240,000	292,000	415,000	415,000	415,000	539,500	539,500	124,500
Long-term retirement obligations	81,300	41,100	38,700	36,765	34,927	33,180	31,521	29,945
Other non-current liabilities	52,400	73,900	122,200	158,860	206,518	268,473	322,168	386,602
<b>Total liabilities</b>	<b>609,000</b>	<b>675,700</b>	<b>886,500</b>	<b>956,285</b>	<b>1,041,235</b>	<b>1,269,940</b>	<b>1,361,010</b>	<b>1,466,615</b>
<b>Equity</b>								
Common Equity	618,000	643,300	679,500	680,607	681,769	682,990	684,271	685,617
Retained earnings (accumulated deficit)	448,200	636,100	845,500	1,049,787	1,379,387	1,865,561	2,443,948	3,047,152
Accumulated other comprehensive income (loss)	(31,900)	10,700	(69,700)	-25,000	-25,000	-25,000	-25,000	-25,000
Less: treasury stock, at cost	40,200	129,700	305,400	355,400	405,400	455,400	505,400	555,400
<b>Total Equity</b>	<b>994,100</b>	<b>1,160,400</b>	<b>1,149,900</b>	<b>1,349,994</b>	<b>1,630,756</b>	<b>2,068,150</b>	<b>2,597,819</b>	<b>3,152,369</b>

Hexcel  
Cash Flow Statement

<i>Fiscal Years Ending 31/12/2015</i>	<i>2015E</i>	<i>2016E</i>	<i>2017E</i>	<i>2018E</i>	<i>2019E</i>
<b>Operating Activities</b>					
<b>Net Income</b>	<b>201,734</b>	<b>270,411</b>	<b>424,049</b>	<b>505,871</b>	<b>531,621</b>
Depreciation	85,436	97,397	105,189	115,707	127,278
Accounts Receivable	(2,335)	(7,075)	(7,287)	(7,506)	(7,506)
Inventories	(29,010)	(31,911)	(35,102)	(38,612)	(42,474)
Prepaid Expenses	4,360	4,142	3,935	3,738	3,551
Deferred Tax Asset	-	-	-	-	-
Short-term borrowings & current maturities of long-term debt	(1,300)	-	-	-	415,000
Accounts payable	26,250	28,175	32,120	26,154	28,770
Accrued compensation & benefits	3,320	3,486	3,660	3,843	4,035
Other accrued liabilities	6,790	7,469	8,216	9,037	9,941
<b>Cash from Operating Activities</b>	<b>295,244</b>	<b>372,093</b>	<b>534,779</b>	<b>618,234</b>	<b>1,070,218</b>
<b>Investing Activities</b>					
Property, plant & equipment, net	(185,730)	(199,350)	(129,862)	(175,314)	(192,846)
Goodwill & other intangible assets	2,990	2,841	2,698	2,564	2,435
Investments in affiliated companies	(5,130)	(5,900)	(6,784)	(7,802)	(8,972)
Other assets	(5,625)	(5,625)	(6,750)	(6,075)	(4,658)
Other non-current liabilities	36,660	47,658	61,955	53,695	64,434
<b>Cash From Investing Activities</b>	<b>(156,835)</b>	<b>(160,376)</b>	<b>(78,743)</b>	<b>(132,933)</b>	<b>(139,607)</b>
<b>Financing Activities</b>					
Long-term notes payable	-	-	124,500	-	(415,000)
Long-term retirement obligations	(1,935)	(1,838)	(1,746)	(1,659)	(1,576)
Issuance of Common Stock	1,107	1,162	1,220	1,281	1,346
Repurchase of Common Stock	(50,000)	(50,000)	(50,000)	(50,000)	(50,000)
Dividends Paid	(38,182)	(38,208)	(43,063)	(43,192)	(48,190)
<b>Cash From Financing Activities</b>	<b>(89,010)</b>	<b>(88,884)</b>	<b>30,911</b>	<b>(93,570)</b>	<b>(513,421)</b>
Increase (decrease) in cash & cash equivalents	49,399	122,833	486,947	391,731	417,190
Cash and Cash Equivalents at beginning of period	70,900	120,299	243,132	730,079	1,121,810
<b>Cash and Cash Equivalents at end of period</b>	<b>120,299</b>	<b>243,132</b>	<b>730,079</b>	<b>1,121,810</b>	<b>1,539,000</b>



## Hexcel

## Income Statement

<i>Fiscal Years Ending 31/12/2015</i>	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
<b>Net sales</b>	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of sales	70.61%	69.41%	68.74%	68.02%	65.35%	60.32%	58.56%	58.99%
Depreciation	3.62%	3.53%	3.84%	4.56%	4.64%	4.28%	4.28%	4.44%
Gross margin	25.77%	27.05%	27.42%	27.42%	30.01%	35.40%	37.16%	36.57%
Selling, general & administrative expenses	8.28%	8.43%	8.04%	8.35%	7.83%	7.03%	6.71%	6.65%
Research & technology expenses	2.33%	2.48%	2.58%	2.94%	3.10%	2.96%	3.02%	3.16%
Other income (expense), net	0.60%	0.00%	-0.32%	0.00%	0.00%	0.00%	0.00%	0.00%
Operating income (loss)	15.76%	16.14%	16.48%	16.13%	19.08%	25.40%	27.43%	26.76%
Interest expense, net	0.63%	0.43%	0.43%	0.44%	0.40%	0.44%	0.40%	0.09%
Provision (benefit) for income taxes	4.70%	4.53%	4.81%	4.84%	5.73%	7.62%	8.23%	8.03%
Equity in earnings (losses) from & gain (loss) on sale of investments in affiliated companies	0.04%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Equity in earnings of investments in affiliated companies	0.00%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%
Net Income	10.41%	11.20%	11.29%	10.76%	12.88%	17.27%	18.73%	18.57%

**CF Industries**  
Balance Sheet

<i>Fiscal Years Ending Dec. 31</i>	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
<b>Assets</b>								
Cash & cash equivalents	2.07%	3.90%	3.82%	6.42%	11.58%	29.73%	41.53%	53.75%
Accounts receivable, net	14.51%	13.85%	12.58%	12.58%	11.57%	10.19%	9.54%	9.00%
Inventories, net	14.75%	15.81%	15.63%	17.03%	16.72%	15.72%	15.72%	16.32%
Prepaid expenses & other current assets	5.15%	5.55%	4.70%	4.42%	3.75%	3.04%	2.63%	2.36%
Total current assets	36.48%	39.11%	36.74%	40.45%	43.63%	58.68%	69.42%	81.42%
Property, plant & equipment, net	57.94%	63.60%	66.73%	75.98%	77.34%	71.39%	71.39%	74.08%
Goodwill & other intangible assets	3.66%	3.63%	3.22%	3.03%	2.57%	2.09%	1.80%	1.62%
Investments in affiliated companies	1.43%	1.39%	1.84%	2.10%	2.15%	2.12%	2.21%	2.40%
Deferred tax assets	0.98%	0.61%	#VALUE!	0.00%	0.00%	0.00%	0.00%	0.00%
Other assets	1.09%	1.05%	1.21%	1.50%	1.61%	1.65%	1.72%	1.79%
<b>Total assets</b>	<b>101.58%</b>	<b>109.41%</b>	<b>109.75%</b>	<b>123.06%</b>	<b>127.30%</b>	<b>135.93%</b>	<b>146.55%</b>	<b>161.31%</b>
<b>Liabilities</b>								
Short-term borrowings & current maturities of long-term debt	1.05%	0.18%	0.07%	0.00%	0.00%	0.00%	0.00%	14.49%
Accounts payable	7.33%	8.10%	9.43%	10.74%	10.93%	10.65%	10.65%	11.05%
Accrued compensation & benefits	3.73%	5.32%	3.58%	3.72%	3.49%	3.13%	2.99%	2.96%
Other accrued liabilities	2.80%	2.42%	3.66%	3.99%	3.91%	3.68%	3.68%	3.82%
Total current liabilities	14.91%	16.01%	16.74%	18.44%	18.33%	17.46%	17.32%	32.32%
Long-term notes payable	15.21%	17.40%	22.37%	22.14%	19.77%	21.97%	19.97%	4.35%
Long-term retirement obligations	5.15%	2.45%	2.09%	1.96%	1.66%	1.35%	1.17%	1.05%
Other non-current liabilities	3.32%	4.40%	6.59%	8.48%	9.84%	10.93%	11.93%	13.50%
<b>Total liabilities</b>	<b>38.59%</b>	<b>40.26%</b>	<b>47.78%</b>	<b>51.03%</b>	<b>49.61%</b>	<b>51.71%</b>	<b>50.38%</b>	<b>51.22%</b>
<b>Equity</b>								
Additional paid-in capital	39.16%	38.33%	36.62%	36.32%	32.48%	27.81%	25.33%	23.94%
Retained earnings (accumulated deficit)	28.40%	37.90%	45.57%	56.02%	65.72%	75.97%	90.47%	106.42%
Accumulated other comprehensive income (loss)	-2.02%	0.64%	-3.76%	-1.33%	-1.19%	-1.02%	-0.93%	-0.87%
Less: treasury stock, at cost	2.55%	7.73%	16.46%	18.96%	19.31%	18.54%	18.71%	19.40%
<b>Total Equity</b>	<b>62.99%</b>	<b>69.15%</b>	<b>61.97%</b>	<b>72.04%</b>	<b>77.69%</b>	<b>84.22%</b>	<b>96.17%</b>	<b>110.09%</b>

Hexcel  
Value Driver Estimation

Fiscal Years Ending 31/12/2015	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
<b>EBITA</b>								
Operating Revenue	1,578,200	1,678,200	1,855,500	1,874,055	2,098,942	2,455,762	2,701,338	2,863,418
Cost of Goods Sold	1,114,300	1,164,900	1,275,500	1,274,731	1,371,584	1,481,310	1,581,846	1,689,104
Depreciation	57,200	59,300	71,200	85,436	97,397	105,189	115,707	127,278
SG&A	130,700	141,400	149,100	156,555	164,383	172,602	181,232	190,294
Research & technology expenses	36,700	41,700	47,900	55,085	65,000	72,800	81,536	90,505
Implied Interest on PV Leases	1,455	1,475	1,455	1,470	1,485	1,499	1,514	1,530
<b>EBITA</b>	<b>240,755</b>	<b>272,375</b>	<b>313,255</b>	<b>303,718</b>	<b>402,063</b>	<b>625,360</b>	<b>742,530</b>	<b>767,766</b>

Adjusted Taxes

Income tax provision (benefit)	74,100	76,000	89,300	90,674	120,173	187,158	222,305	229,871
Tax Shield on Interest Expense	3,060	2,234	2,448	2,540	2,540	3,302	3,302	762
Tax on Non-Operating Income	336.6	306	153	0	0	0	0	0
Tax on PV leases	445.3	451.4	445.3	449.8	454.3	458.8	463.4	468.0
<b>Total Adjusted Taxes</b>	<b>77,269</b>	<b>78,379</b>	<b>92,040</b>	<b>93,664</b>	<b>123,168</b>	<b>190,919</b>	<b>226,070</b>	<b>231,101</b>

Deferred Taxes

Deferred Taxes Assets	15,400	10,300	0	0	0	0	0	0
Deferred Taxes Liabilities								
Change in Deferred Taxes	-17,600	-5,100	0	0	0	0	0	0

<b>NOPLAT</b>	<b>145,887</b>	<b>188,896</b>	<b>221,215</b>	<b>210,054</b>	<b>278,895</b>	<b>434,441</b>	<b>516,460</b>	<b>536,665</b>
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Net Operating Working Capital

<b>Current Assets</b>								
Normal Cash	32,600	65,500	70,900	120,299	243,132	730,079	1,121,810	1,539,000
Accounts Receivable	229,000	232,400	233,500	235,835	242,910	250,197	257,703	257,704
Inventory	232,800	265,300	290,100	319,110	351,021	386,123	424,735	467,209
Prepaid Expenses	81,300	93,200	87,200	82,840	78,698	74,763	71,025	67,474
<b>Total Current Assets</b>	<b>575,700</b>	<b>656,400</b>	<b>681,700</b>	<b>758,084</b>	<b>915,761</b>	<b>1,441,163</b>	<b>1,875,274</b>	<b>2,331,387</b>
<b>Non-Interest Bearing Current Liabilities</b>								
Accounts Payable and Accrued Expenses	115,700	135,900	175,000	201,250	229,425	261,545	287,699	316,469
Accrued compensation & benefits	58,800	89,200	66,400	69,720	73,206	76,866	80,710	84,745
Other Current Liabilities	44,200	40,600	67,900	74,690	82,159	90,375	99,412	109,354
<b>Total Current Liabilities</b>	<b>218,700</b>	<b>265,700</b>	<b>309,300</b>	<b>345,660</b>	<b>384,790</b>	<b>428,786</b>	<b>467,821</b>	<b>510,568</b>
<b>Net Operating Working Capital</b>	<b>357,000</b>	<b>390,700</b>	<b>372,400</b>	<b>412,424</b>	<b>530,971</b>	<b>1,012,377</b>	<b>1,407,453</b>	<b>1,820,820</b>
<b>PPE - Net (+)</b>	<b>914,400</b>	<b>1,067,400</b>	<b>1,238,200</b>	<b>1,423,930</b>	<b>1,623,280</b>	<b>1,753,143</b>	<b>1,928,457</b>	<b>2,121,303</b>
<b>Other Assets (+)</b>	<b>17,200</b>	<b>17,700</b>	<b>22,500</b>	<b>28,125</b>	<b>33,750</b>	<b>40,500</b>	<b>46,575</b>	<b>51,233</b>
<b>Operating Leases(+)</b>	<b>29,400</b>	<b>29,800</b>	<b>29,400</b>	<b>29,694</b>	<b>29,991</b>	<b>30,291</b>	<b>30,594</b>	<b>30,900</b>
<b>Other noncurrent liabilities (-)</b>	<b>52,400</b>	<b>73,900</b>	<b>122,200</b>	<b>158,860</b>	<b>206,518</b>	<b>268,473</b>	<b>322,168</b>	<b>386,602</b>
<b>Invested Capital</b>	<b>1,265,600</b>	<b>1,431,700</b>	<b>1,540,300</b>	<b>1,735,313</b>	<b>2,011,475</b>	<b>2,567,837</b>	<b>3,090,910</b>	<b>3,637,653</b>
<b>Change in Invested Capital</b>	<b>253,400</b>	<b>166,100</b>	<b>108,600</b>	<b>195,013</b>	<b>276,161</b>	<b>556,362</b>	<b>523,073</b>	<b>546,742</b>

NOPLAT	145,887	188,896	221,215	210,054	278,895	434,441	516,460	536,665
(÷) Beg, Invested Cap	1,012,200	1,265,600	1,431,700	1,540,300	1,735,313	2,011,475	2,567,837	3,090,910
<b>ROIC</b>	<b>14.41%</b>	<b>14.93%</b>	<b>15.45%</b>	<b>13.64%</b>	<b>16.07%</b>	<b>21.60%</b>	<b>20.11%</b>	<b>17.36%</b>

NOPLAT	145,887	188,896	221,215	210,054	278,895	434,441	516,460	536,665
(-) Capital Expenditures	253,400	166,100	108,600	195,013	276,161	556,362	523,073	546,742
<b>FCF</b>	<b>(107,513)</b>	<b>22,796</b>	<b>112,615</b>	<b>15,041</b>	<b>2,734</b>	<b>(121,921)</b>	<b>(6,613)</b>	<b>(10,077)</b>

Beginning IC	1,012,200	1,265,600	1,431,700	1,540,300	1,735,313	2,011,475	2,567,837	3,090,910
ROIC	14.41%	14.93%	15.45%	13.64%	16.07%	21.60%	20.11%	17.36%
<b>EP</b>	<b>68,564</b>	<b>92,216</b>	<b>111,846</b>	<b>92,389</b>	<b>146,333</b>	<b>280,783</b>	<b>320,301</b>	<b>300,548</b>

## Hexcel

### Weighted Average Cost of Capital (WACC) Estimation

$$WACC = Re(E/V) + Rd(1-t)(D/V) + Rpdf(PFD/V)$$

#### Cost of Equity

$$Er=r(f)+B[E(rm)-r(f)]$$

#### Cost of Debt

Risk free	2.95%
Implied Risk Premium	4.85% Per Henry Fund
Beta	1.06

Risk Free	2.95%
Spread	2.00%
Cost of Debt	4.95%

Cost of Equity	8.09%
Total Equity	4,145,655
Total Debt (LT, ST, Leases)	445,678
Total Value	4,591,333

WACC	7.64%
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**Hexcel***Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models*

## Key Inputs:

CV Growth	3.00%
CV ROIC	17.36%
WACC	7.64%
Cost of Equity	8.09%

<i>Fiscal Years Ending 31/12/2015</i>	2015E	2016E	2017E	2018E	2019E
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## WACC

NOPLAT	210,054	278,895	434,441	516,460	536,665
Invested Capital	1,540,300	1,735,313	2,011,475	2,567,837	3,090,910
ROIC	13.64%	16.07%	21.60%	20.11%	17.36%

NOPLAT	210,054	278,895	434,441	516,460	536,665
(-) Capital Expenditures	195,013	276,161	556,362	523,073	546,742
FCF	15,041	2,734	(121,921)	(6,613)	
CV					9,569,538

Number of Discounts	1	2	3	4	4
PV of Cash Flows	13,973	2,360	(97,762)	(4,926)	7,353,628
Total Operating Value					7,237,372

(-) Long Term Debt					445,678
(-) ESOP					1,545,000
(-) PV Operation Leases					29,694
Firm Value					5,216,999
(/)Shares Outstanding					95,500
Target Price					54.63
Todays Price					58.80

**EP Model**

Economic Profit	92,389	146,333	280,783	320,301	300,548
CV of Economic Profit					6,478,628
Number of Discounts	1	2	3	4	5
PV of Cash Flows	85,832	126,300	225,145	238,605	4,826,177
PV Operations					5,502,058
(+) Beginning IC					1,735,313
EP Value					7,237,372

(-)Long Term Debt					445,678
(-)ESOP					1,545,000
(-)PV Operating Leases					29,694
Firm Value					5,216,999
(/)Shares Outstanding					95,500
Target Price					54.63
Price Today					58.80

**Hexcel***Dividend Discount Model (DDM) or Fundamental P/E Valuation Model*

<i>Fiscal Years Ending 31/12/2015</i>		2015E	2016E	2017E	2018E	2019E
EPS	\$	2.11	\$ 2.83	\$ 4.43	\$ 5.27	\$ 5.52
ROE		14.94%	16.58%	20.50%	19.47%	16.86%

**Key Assumptions**

CV growth	2.50%
CV ROE	15.76%
Cost of Equity	8.09%

**Future Cash Flows**

P/E Multiple (CV Year)						15.05
EPS (CV Year)						5.52
Future Stock Price					\$	83.01
Dividends Per Share		0.40	0.40	0.45	0.45	0.50
Future Cash Flows		0.40	0.40	0.45	0.45	\$ 83.01
Discounted Cash Flows		0.37	0.34	0.36	0.33	60.81

Intrinsic Value	\$	62.21
<b>Value Today</b>	\$	65.94

**Hexcel***Relative Valuation Models*

Ticker	Company	Price	EPS	EPS	P/E 15	P/E 16	Est. 5yr EPS gr.
			2015E	2016E			
UTX	United Technologies	\$99.44	\$6.23	\$6.64	16.0	15.0	8.02%
TGI	Triump Group inc	\$43.29	\$5.56	\$5.87	7.8	7.4	4.80%
SPR	Spirit AeroSystems	\$50.46	\$3.94	\$4.21	12.8	12.0	10.08%
RTN	Raytheon Company	\$117.07	\$6.85	\$6.96	17.1	16.8	6.09%
PCP	Precision Castparts Corp	\$230.92	\$12.53	\$14.34	18.4	16.1	11.49%

Average	<b>14.4</b>	<b>13.5</b>
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HXL	Hexcel	\$43.41	\$2.11	\$2.83	20.5	15.3	20.62%
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**Implied Value:**

Relative P/E (EPS15)	\$	<b>30.46</b>
Relative P/E (EPS16)	\$	<b>38.08</b>

### Key Management Ratios

Fiscal Years Ending 31/12/2015	2012	2013	2014	2015E	2016E	2017E	2018E	2019E
<b>Liquidity Ratios</b>								
Current Ratio (Current Assets/Current Liabilities)	2.45	2.44	2.19	2.19	2.38	3.36	4.01	2.52
Quick Ratio (Current Assets - Inventory / Current Liabilities)	1.28	1.26	1.13	1.14	1.32	2.26	1.57	1.46
Cash Ratio (Cash + Marketable Securitas / Current Liabilities)	0.14	0.24	0.23	0.35	0.63	1.70	2.40	1.66
<b>Activity or Asset-Management Ratios</b>								
Inventory Turnover (COGS / Average Inventory)	5.03	4.61	4.64	4.26	4.18	4.11	4.00	3.89
Asset Turnover (Sales / Total Assets)	0.98	0.91	0.91	0.81	0.79	0.74	0.68	0.62
<b>Financial Leverage Ratios</b>								
Debt Ratio (Total Debt / Total Assets)	0.16	0.16	0.20	0.18	0.16	0.16	0.14	0.12
Debt to Equity Ratio (Total Debt / Total Equity)	0.26	0.25	0.36	0.31	0.25	0.26	0.21	0.17
Interest Coverage (EBITA / Interest Charges)	24.08	37.31	39.16	36.59	48.44	57.96	68.82	308.34
<b>Profitability Ratios</b>								
Gross Profit Margin (Sales - COGS / Sales)	25.77%	27.05%	27.42%	27.42%	30.01%	35.40%	37.16%	36.57%
Return on Assets (Net Income / Total Assets)	98.45%	91.40%	91.12%	81.26%	78.55%	73.57%	68.24%	61.99%
Return on Equity (Net Income / Shareholder Equity)	158.76%	144.62%	161.36%	138.82%	128.71%	118.74%	103.98%	90.83%
<b>Payout Policy Ratios</b>								
Payout Ratio (Dividends per Share / EPS)				18.93%	14.13%	10.16%	8.54%	9.06%
Dividend Cover (EPS / Dividends per Share)				5.28	7.08	9.85	11.71	11.03
*Dividend initiated 1Q 2015								



Present Value of Operating Lease Obligations (2015)

	Operating Leases
Fiscal Years Ending	
2015	8.2
2016	6.8
2017	5.2
2018	3.5
2019	2
Thereafter	5.1
Total Minimum Payments	30.8
Less: Interest	1
PV of Minimum Payments	29

Capitalization of Operating Leases

Pre-Tax Cost of Debt	4.95%
Number Years Implied by Year 6 Payment	2.6

Year	Lease Commitment	PV Lease Payment
1	8.2	8.2
2	6.8	6.8
3	5.2	5.2
4	3.5	3.5
5	2	2.0
6 & beyond	2	3.7
PV of Minimum Payments		29.4

Present Value of Operating Lease Obligations (2014)

	Operating Leases
Fiscal Years Ending	
2014	9.1
2015	5.3
2016	4.1
2017	2.2
2018	1.8
Thereafter	9.3
Total Minimum Payments	31.8
Less: Interest	3
PV of Minimum Payments	29

Capitalization of Operating Leases

Pre-Tax Cost of Debt	4.95%
Number Years Implied by Year 6 Payment	5.2

Year	Lease Commitment	PV Lease Payment
1	9.1	9.1
2	5.3	5.3
3	4.1	4.1
4	2.2	2.2
5	1.8	1.8
6 & beyond	1.8	6.3
PV of Minimum Payments		28.8

Present Value of Operating Lease Obligations (2013)

	Operating Leases
Fiscal Years Ending	
2013	9.2
2014	5.8
2015	3
2016	2.2
2017	1.9
Thereafter	10.9
Total Minimum Payments	33
Less: Interest	4
PV of Minimum Payments	29

Capitalization of Operating Leases

Pre-Tax Cost of Debt	4.95%
Number Years Implied by Year 6 Payment	5.7

Year	Lease Commitment	PV Lease Payment
1	9.2	9.2
2	5.8	5.8
3	3	3.0
4	2.2	2.2
5	1.9	1.9
6 & beyond	1.9	7.3
PV of Minimum Payments		29.4

Present Value of Operating Lease Obligations (2012)

	Operating Leases
Fiscal Years Ending	
2012	11
2013	6.6
2014	6.1
2015	5.2
2016	2.3
Thereafter	11.8
Total Minimum Payments	43
Less: Interest	4
PV of Minimum Payments	39

Capitalization of Operating Leases

Pre-Tax Cost of Debt	4.95%
Number Years Implied by Year 6 Payment	5.1

Year	Lease Commitment	PV Lease Payment
1	11	11.0
2	6.6	6.6
3	6.1	6.1
4	5.2	5.2
5	2.3	2.3
6 & beyond	2.3	8.0
PV of Minimum Payments		39.2

## Effects of ESOP Exercise and Share Repurchases on Common Stock Balance Sheet Account and Number of Shares Outstanding

Number of Options Outstanding (shares):	2,800,000
Average Time to Maturity (years):	4.95
Expected Annual Number of Options Exercised:	565,657

Current Average Strike Price:	\$ 19.12
Cost of Equity:	8.09%
Current Stock Price:	\$43.41

	2014E	2015E	2016E	2017E	2018E	2019E
Increase in Shares Outstanding:	30	30	30	30	30	30
Average Strike Price:	\$ 36.90	\$ 38.74	\$ 40.68	\$ 42.71	\$ 44.85	\$ 47.09
<b>Increase in Common Stock Account:</b>	<b>1,107</b>	<b>1,162</b>	<b>1,220</b>	<b>1,281</b>	<b>1,346</b>	<b>1,413</b>
Change in Treasury Stock	50,000	50,000	50,000	50,000	50,000	50,000
Expected Price of Repurchased Shares:	\$ 43.41	\$ 45.58	\$ 47.86	\$ 50.25	\$ 52.77	\$ 55.40
<b>Number of Shares Repurchased:</b>	<b>1,152</b>	<b>1,097</b>	<b>1,045</b>	<b>995</b>	<b>948</b>	<b>902</b>
Shares Outstanding (beginning of the year)	95,500	95,455	95,520	95,696	95,983	96,381
Plus: Shares Issued Through ESOP	1,107	1,162	1,220	1,281	1,346	1,413
Less: Shares Repurchased in Treasury	1,152	1,097	1,045	995	948	902
<b>Shares Outstanding (end of the year)</b>	<b>95,455</b>	<b>95,520</b>	<b>95,696</b>	<b>95,983</b>	<b>96,381</b>	<b>96,891</b>

		Beta					
Risk Free	\$	58.80	0.95	1	1.06	1.1	1.15
	2.00%	\$	95.97	\$	87.95	\$	79.57
	2.50%	\$	80.47	\$	74.23	\$	67.59
	2.95%	\$	69.41	\$	64.30	\$	58.80
	3.50%	\$	58.51	\$	54.41	\$	49.95
	4.00%	\$	50.44	\$	47.02	\$	43.28

		Tax Rate					
Risk Free	\$	58.80	20.0%	25.0%	30.6%	35.0%	40.0%
	2.00%	\$	80.40	\$	80.92	\$	81.50
	2.50%	\$	67.35	\$	67.80	\$	68.31
	2.95%	\$	57.94	\$	58.34	\$	58.80
	3.50%	\$	48.59	\$	48.95	\$	49.36
	4.00%	\$	41.63	\$	41.96	\$	42.33

		Sales Growth								
	\$	58.80	-5%	2%	6%	10%	15%			
SG&A Growth	1.0%	\$	45.03	68.99101	\$	82.68	\$	96.37	\$	113.48
	3.0%	\$	44.57	68.5318	\$	82.22	\$	95.91	\$	113.02
	5.0%	\$	44.12	68.07258	\$	81.76	\$	95.45	\$	112.56
	7.0%	\$	43.66	67.61336	\$	81.30	\$	94.99	\$	112.10
	9.0%	\$	43.20	67.15414	\$	80.84	\$	94.53	\$	111.65

		Cost of Debt					
Cost of Equity	\$	58.80	4.00%	4.50%	4.95%	5.50%	6.00%
	6.00%	\$	125.32	\$	123.37	\$	121.64
	7.00%	\$	85.55	\$	84.45	\$	83.48
	8.09%	\$	60.10	\$	59.42	\$	58.82
	9.00%	\$	45.97	\$	45.48	\$	45.05
	10.00%	\$	34.70	\$	34.34	\$	34.02

		Risk Premium					
Beta	\$	58.80	4.25%	4.50%	4.85%	5.00%	5.50%
	0.95	\$	83.84	\$	77.36	\$	69.41
	1	\$	78.01	\$	71.85	\$	64.30
	1.06	\$	71.73	\$	65.92	\$	58.80
	1.1	\$	67.93	\$	62.33	\$	55.47
	1.5	\$	41.08	\$	36.99	\$	31.96

		R&D Growth					
Provision for Income Tax	\$	58.80	5%	10%	15%	20%	25%
	20.0%	\$	58.83	\$	58.38	\$	57.94
	25.0%	\$	59.24	\$	58.79	\$	58.34
	30.6%	\$	59.71	\$	59.25	\$	58.80
	35.0%	\$	60.08	\$	59.62	\$	59.17
	40.0%	\$	60.50	\$	60.04	\$	59.58

		Revenue					
COGS Increase	\$	58.80	-5%	0%	6%	10%	15%
	3%	29.757558	46.86962	67.404104	81.0937566	98.2058228	
	5%	25.456185	42.56825	63.102731	76.792384	93.9044502	
	7%	21.154813	38.26688	58.801358	72.4910114	89.6030776	
	9%	16.85344	33.96551	54.499986	68.1896388	85.301705	
	10%	14.702754	31.81482	52.3493	66.0389525	83.1510187	

		COGS increase					
R&D Growth	\$	58.80	0%	4%	7%	10%	13%
	5%	\$	74.48	\$	65.87	\$	59.42
	8%	\$	74.17	\$	65.56	\$	59.11
	11%	\$	73.86	\$	65.25	\$	58.80
	15%	\$	73.44	\$	64.84	\$	58.39
	18%	\$	73.13	\$	64.53	\$	58.08