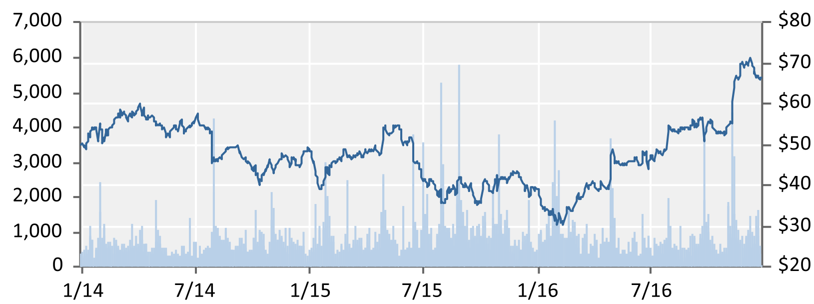
Analyst: Peter Wycklendt | **INVESTMENT MANAGEMENT CERTIFICATE PROGRAM** | December 27, 2016

Recommendation	**NEUTRAL**
Target (today's value)	$63
Current Price	$66.72
52 week range	$29.59 - $71.99

Defense and Trucks, Construction, Farm Equipment

Oshkosh Corporation

Share Data	
Ticker:	OSK
Market Cap. (Billion):	$4.97
Inside Ownership	1.1%
Inst. Ownership	90.2%
Beta	1.46
Dividend Yield	1.26%
Payout Ratio	26.1%
Cons. Long-Term Growth Rate	12.9%



Source: FactSet Prices

	'14	**'15**	**'16**	**'17E**	**'18E**
Sales (billions)					
Year	$6.81	$6.10	$6.28	$6.60	$6.71
Gr %	-11.2%	-10.4%	3.0%	5.1%	1.6%
Cons	-	-	-	$6.62	$6.73
EPS					
Year	3.68	$2.94	$2.94	$3.23	$3.63
Gr %	1.0%	-20.0%	0.0%	9.7%	12.6%
Cons	-	-	-	$3.35	$3.57

Ratio	**'13**	**'14**	**'15**	**'16**	**'17E**
ROE (%)	16.1%	15.1%	11.8%	11.1%	11.6%
Industry	0.20%	13.9%	11.4%	11.2%	14.8%
NPM (%)	4.10%	4.5%	3.8%	3.4%	3.4%
Industry	0.6%	5.9%	6.0%	4.7%	5.7%
A. T/O	1.58	1.46	1.33	1.39	1.47
ROA (%)	6.5%	6.6%	5.0%	4.8%	5.1%
Industry	0.1%	4.3%	3.3%	3.2%	4.6%
A/E	2.45	2.29	2.35	2.33	2.29

Valuation	**'14**	**'15**	**'16**	**'17E**
P/E	18.1	22.7	22.7	20.7
Industry	17.6	18.9	22.1	21.9
P/S	0.6	0.5	0.7	0.8
P/B	1.7	1.6	2.1	2.30
P/CF	14.6	48.8	14.8	26.2
EV/EBITDA	6.59	8.65	9.44	12.79

Performance	**Stock**	**Industry**
1 Month	-5.1%	9.4%
3 Month	19.1%	4.7%
YTD	70.9%	19.1%
52-week	67.4%	11.6%
3-year	33.7%	-3.0%

Summary: I recommend a neutral rating with a target of $63. OSK has an opportunity to keep improving efficiency, increasing margins, and modestly increasing revenues. I am confident that the expected sales growth will be effective in improving the business; however, the stock is overvalued based on relative and DCF analysis.

Key Drivers:

- New home and construction of new homes: Over 48% of OSK's revenues come from its access equipment (construction equipment) segment. OSK's access equipment segment has struggled recently but I predict that the segment will recover and see growth in the coming years. Access equipment is expected to recover from -11% growth in 2016 to 1% in 2018.

- Defense spending: Defense contributes 22% to sales and is expected to grow over 34% in 2017, but be flat in 2018. However, OSK has a contract for $6.7 billion for light tactical vehicles that could lead to $30 billion in sales.

- International markets: International is about a quarter of sales, but the firm is expanding this business, and growth outside the U.S. is expected to drive the top line as U.S. growth is projected to be flat from 2016 to 2018. International growth will be reliant on economic growth of foreign countries.

Valuation: Using a relative valuation approach, Oshkosh appears to be undervalued in comparison to comparable firms. DCF analysis yields a value of $58. A combination of the approaches suggests that Oshkosh is overvalued, as the stock's value is about $63 and the shares trade at $66.72.

Risks: Threats to the business include highly cyclical markets, tax rates, obtaining and keeping defense contracts, and access equipment rental uncertainties.

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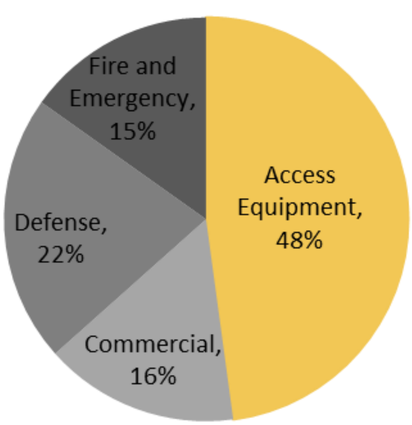
Company Overview

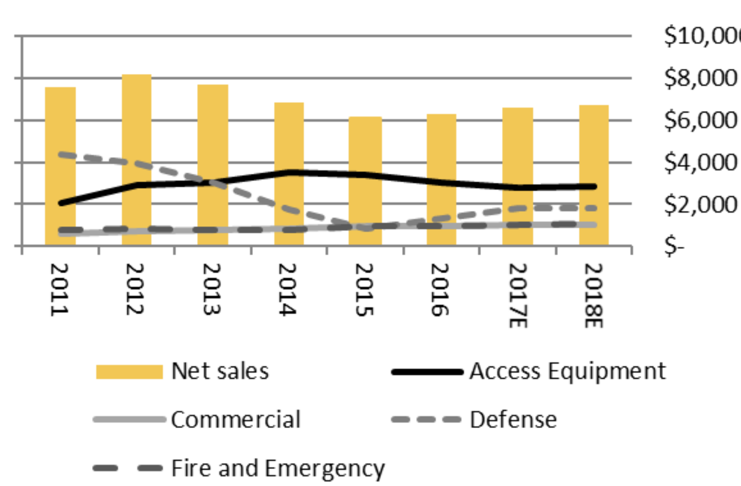
Oshkosh Corporation (OSK) is a leading designer, manufacturer, and retailer of specialty vehicles and vehicle bodies on a global level. OSK focuses on four specific segments including Access Equipment, Commercial, Defense, and Fire and Emergency. OSK designs, manufacturers, and retails construction booms, lifts, telehandlers, different sized armored vehicles, firetrucks, garbage trucks, ready-mixed concrete trucks, field service vehicles, command post vehicles, mobile and stationary concrete batch plants, tow trucks, rotators, airport vehicles, and snow removal vehicles. OSK's quality specialty vehicles are topline products and are well known within the market. The firm has an array of customers worldwide, including but not limited to rental companies, construction contractors, federal governments, local governments/municipalities, ready-mix companies, commercial waste haulers, and mining companies.

OSK is based out of Oshkosh, Wisconsin. Oshkosh Corporation generates its revenue from four segments: 48% from Access Equipment, 16% from Commercial, 22% from Defense, and 15% from Fire and Emergency (figure 1):

- Access Equipment: this segment is made up of subsidiaries JLG and Jerr-Dan. JLG is a manufacturer of construction booms, lifts, and aerial work platforms; Jerr-Dan sells an array of towing vehicles to towing companies globally. Access equipment saw negative growth in 2016 of -11.4%, and is projected to experience negative growth of -7.0% in FY 2017.
- Commercial: this segment is made up of subsidiaries McNeilus, CON-E-CO, and London. McNeilus manufactures concrete mixers and garbage trucks; CON-E-CO provides stationary and mobile concrete batch plants; and London distributes McNeilus and CON-E-CO products in Canada. Commercial grew 0.1% in 2016, and is projected to grow 2.5% in FY 2017.
- Defense: Oshkosh is a leading supplier of the DOD, providing it with severe-duty, heavy and medium payload trucks that are designed and built in a few ways for a variety of uses. Defense saw growth in 2016 of 43.8%, and is projected to grow 34% in FY 2017.
- Fire and Emergency: this segment consists of subsidiaries Pierce, IMT, Frontline Communications, and Oshkosh Airport Products. Pierce designs and manufactures firetrucks and firetruck parts; IMT designs and manufactures field service vehicles and material handling systems; Frontline Communications designs and manufactures customized broadcast and communications vehicles; and Oshkosh Airport Products designs and manufactures aircraft rescue/firefighting vehicles and snow removal vehicles. Fire and Emergency saw growth of 17.0% in 2016 and is projected to grow 17% in FY 2017.

Figures 1 and 2: Revenue Sources for OSK, year-end 2016 (left) and revenue history since 2011 in millions USD (right)





Source: 2016 10K, 2012 10K

Business/Industry Drivers

Though several factors may contribute to Oshkosh Corporation's future success, the following are the most important business drivers:

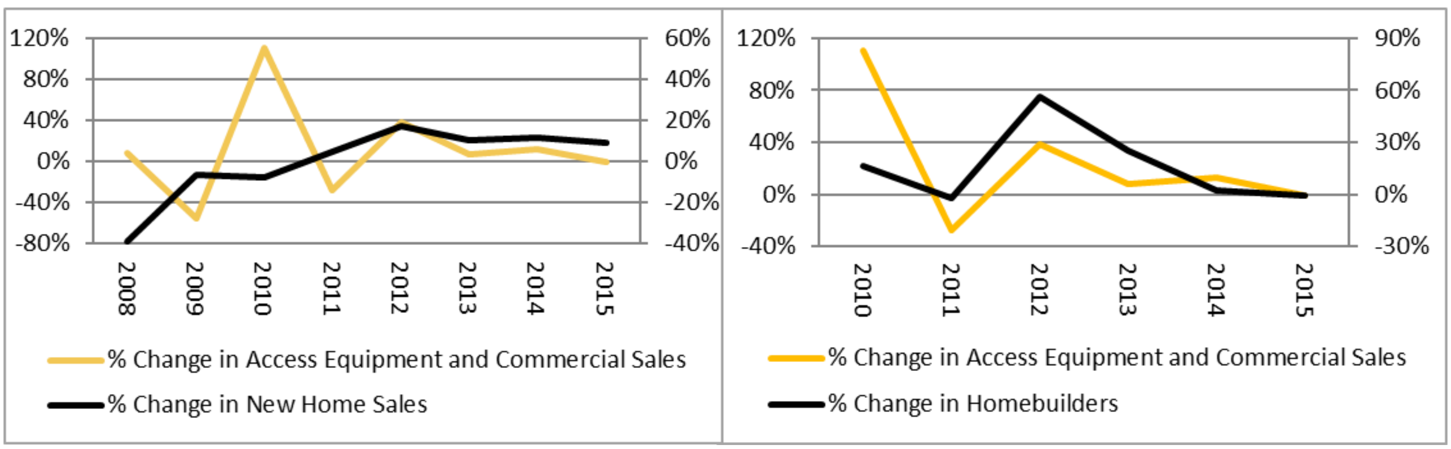
1) New homes and construction of new homes
2) Defense spending
3) International markets
4) Competition
5) Macroeconomic trends

OSK sales grow when new homes are being sold and built.

<u>New Homeowners and Construction of New Homes</u>

New home sales and construction drive OSK, as it produces demand for construction access equipment and commercial concrete products. These segments correlate directly with new home sales and performance of homebuilding companies.

Figures 3 and 4: Percentage change in access equipment and commercial sales (left axis) compared to percentage change in new home sales (right axis) (left), and percentage change in access equipment and commercial sales (left axis) compared to percentage change in S&P Homebuilder Select Industry (right axis) (right)



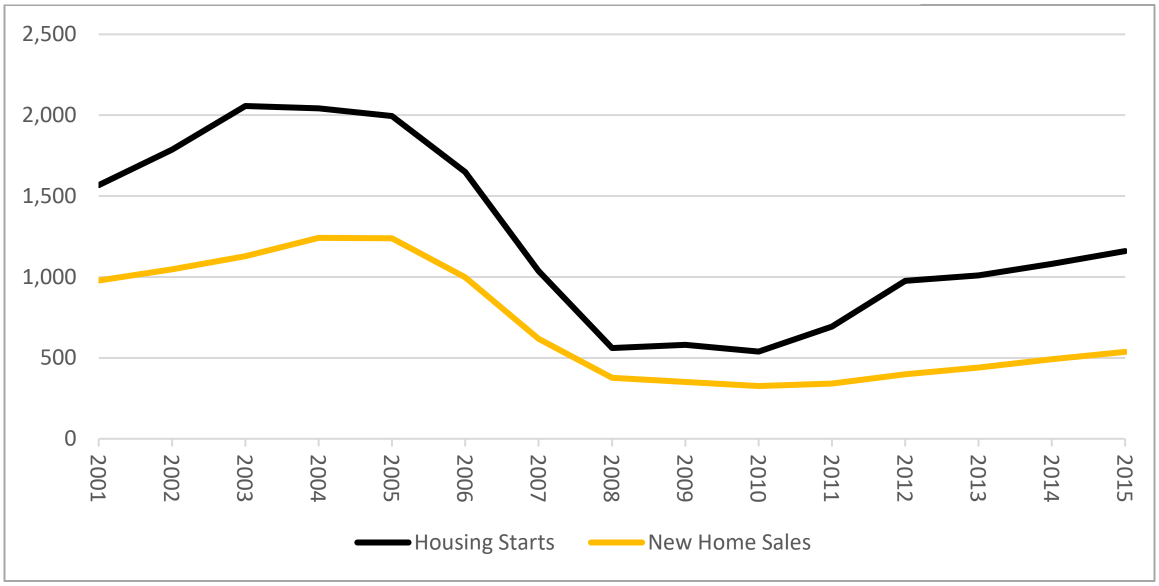
Source: 2015 10K, 2012 10K, 2009 10K, Bloomberg

When new home sales has growth often OSK sales have growth.

OSK benefits with a delay to new home sales. In 2011, sales of access equipment and commercial products fell 28%, while new homes sold grew 4.6%. The following year, 2012, there was 38.2% growth in access equipment and commercial sales. 2010 and 2015 are outliers. In 2010, the segments grew by 110.1%, which did not correlate with the negative growth of -6.6% the year before in new homes sold. At the time, the U.S. machinery sector outperformed the market. At one point, U.S. machinery was up 32% while the S&P 500 was only up 5.5%. In 2015, the segments had -0.7% growth, while new home sales grew 9.4%.

While housing starts are up from the trough of the Great Recession, they are still only half of the prior peak. Thus, there could be more upside for the division.

Figures 5: Levels of housing starts and new home sales for 15 years



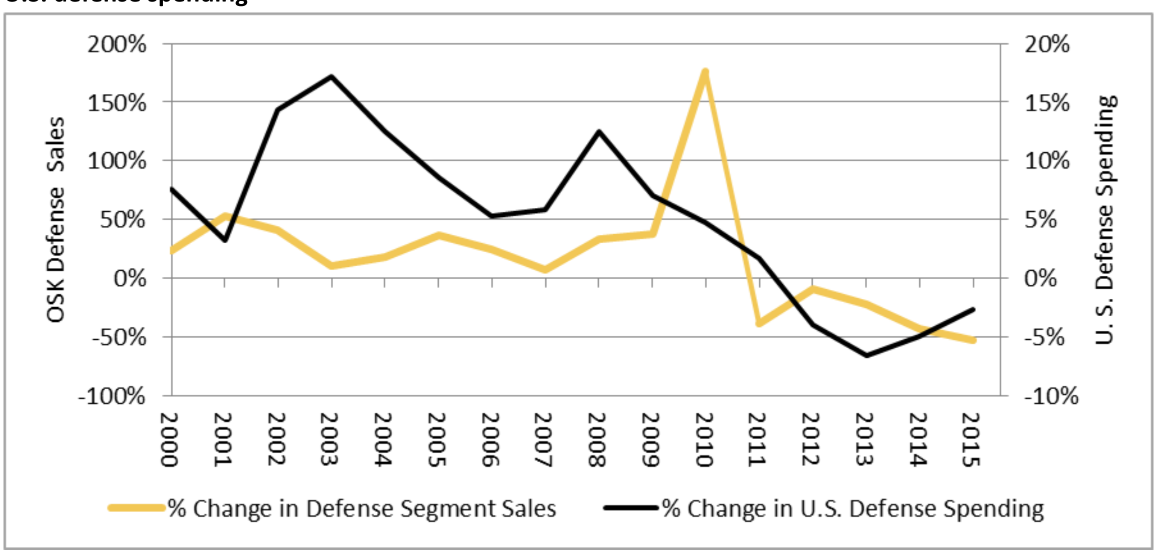
Source: FactSet

Defense Spending

OSK, at various times, has been very dependent on and driven by defense spending. The company produces industry leading armored vehicles of various sizes for the U.S. Department of Defense. While the relationship is not perfect, figure 5 shows that as defense growth slowed, so did OSK's defense business.

OSK defense sales are dependent and correlate with U.S. defense sales.

Figure 6: Percentage change in OSK's Defense segment sales compared to percentage change in U.S. defense spending



Source: 2000-2015 10K's, FactSet

From 2000 to 2011, U.S. defense spending grew 141%. In 2000, the U.S. spent $281 billion on defense, and in 2011, it spent $678 billion. At the same time, OSK's defense segment grew 14x, going from $276 million to $4.4 billion. When defense spending experiences growth, OSK's defense segment grows exponentially as it is on the economic spiral out of defense spending. When defense spending increases there are more opportunities for defense firms to sell products. OSK capitalizes on defense spending growth and its sales increase as they earn new defense contracts that come about from the increased spending.

OSK has consistently developed and upgraded its defense products. This has led to the DOD extending contracts and picking OSK for new contracts, thus driving defense sales.

Defense spending grew because of the global war on terror. In 2010 when the U.S. government started to pull troops out of the Middle East, the DOD upgraded its worn-down war equipment, and in 2010, OSK defense sales spiked to $7.2 billion. Since 2010, OSK's defense segment has experienced negative growth, as has U.S. defense spending, and defense sales are now only one-third of sales in 2012.

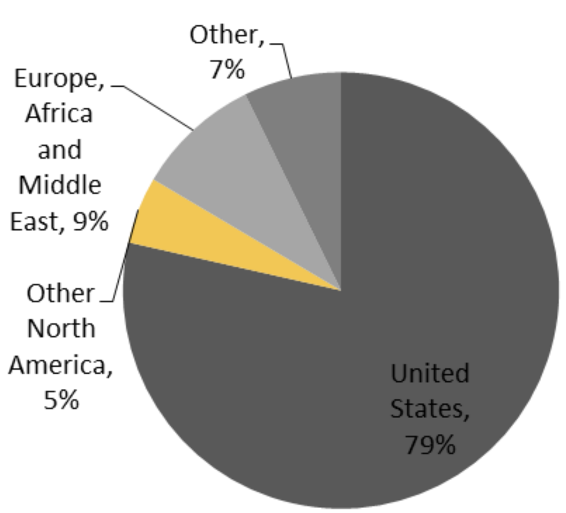
OSK's $6.7 billion contract with the U.S. for the JLTV will drive defense sales.

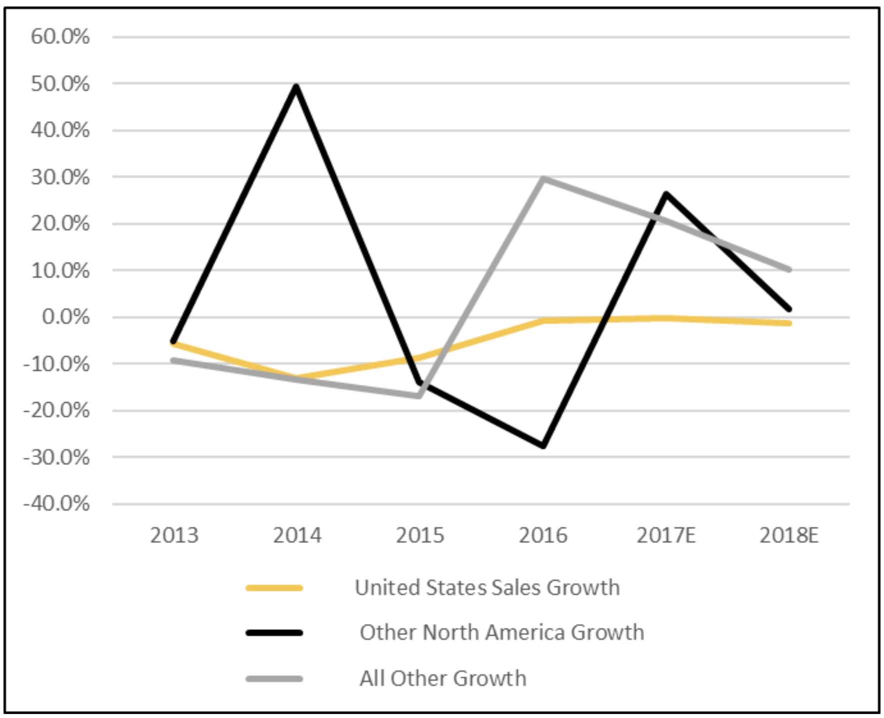
The good news for OSK is that defense spending is predicted to rise again. This is because of uncertainties in the Middle East and the threat of ISIS. OSK has already obtained a DOD contract worth $6.7 billion to sell its new lightweight tactical vehicles, the JLTV, to the U.S. for the Army and Marines. This contract is predicted to grow above the $6.7 billion of sales, and will most likely lead to $30 billion in sales over the next 10 years and more contracts for different OSK defense vehicles. The segment grew 44% in 2016, and accounts for 21.5% of OSK sales. The JLTV contract provides years of revenues, and shows that OSK still produces a great product, and keeps the firm as a leader in the industry. The JLTV contract has created substantial future sales growth.

International Markets

OSK generates 79% of sales from the U.S. In 2014-15, sales declined as defense spending fell and access equipment slowed. To perhaps diversify and capitalize on more opportunity for growth, the firm is expanding internationally.

Figures 7 and 8: Percent of total sales by region and sales growth by region





Source: 2012 10K, 2015 10K

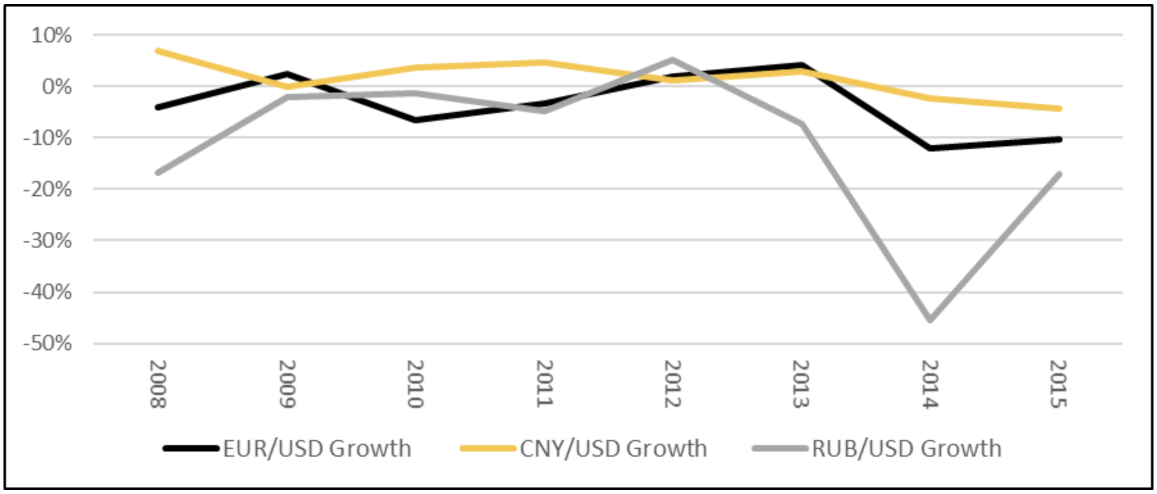
OSK is actively trying to enter new markets all over the world.

OSK has recently opened offices in Russia, India, Saudi Arabia, China, South Korea, and Japan to attempt to target new customers in these markets and sell their access equipment products.

From 2013 to 2015, OSK experienced negative growth outside of North America. This changed in 2016 when sales outside of North America grew 29.5%. To maintain its solid growth internationally, OSK has decided to restructure its international access equipment business in Europe. OSK will be shutting down inefficient manufacturing and inspection centers, centralizing its operations in Romania, and streamlining its telehandler production. OSK expects that this will lead to savings of $20 million to $25 million annually. With this, I expect sales outside North America to grow from 1.3 billion in 2016 to almost 1.6 billion and 1.7 billion in 2017 and 2018 respectively. I expect sales outside of North America to make up 26% of OSK sales by 2018.

The strength of the U.S. dollar has made it hard for OSK to emerge into countries like Russia, Japan, and China.

Figure 9: U.S. dollar per unit of foreign currencies % growth



Source: FactSet

Since 2014, the dollar has risen 17%, 4%, and 10% to the Russian Ruble, Chinese Yuan, and the Euro respectively. This makes OSK's products more expensive and hurts translation of profits to U.S. dollars.

OSK is exploring selling defense products in foreign markets; however, as a defense contractor for the U.S. government, it can only sell to foreign countries approved by the U.S. government. OSK has received interest in the new JLTV from foreign militaries. OSK is actively attempting to expand all segments internationally.

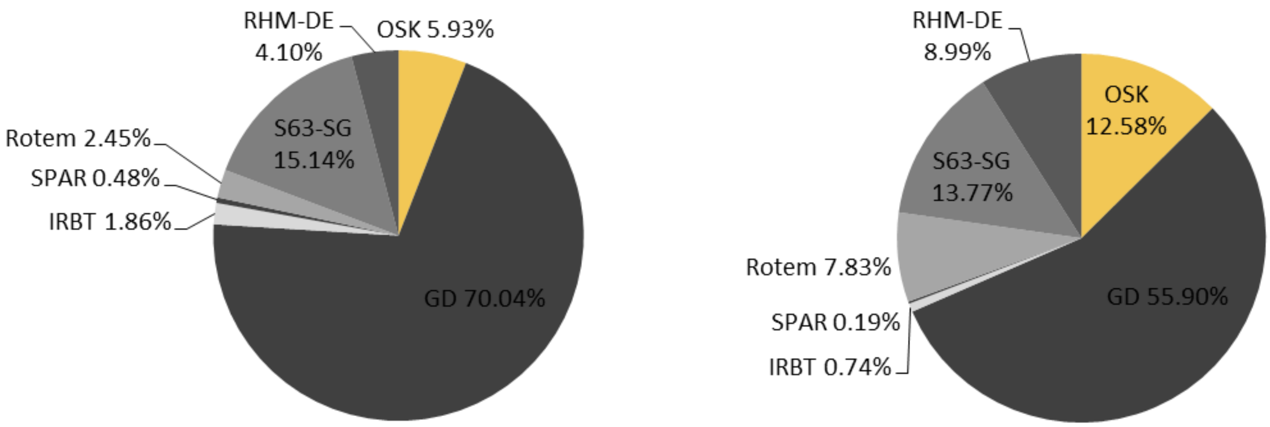
<u>Competition (see also figure 28)</u>

To be successful in the defense industry, a company needs to be established and provide superior products.

The defense industry, and more specifically the manufacturers of armored vehicles industry, is a very competitive industry. It is important to be an established defense contractor like OSK. Companies bid on contracts and must convince the U.S. DOD that they are worthy by providing superior products with the newest technology and innovations. Furthermore, a good defense contractor must be efficient in manufacturing an array of different defense products while managing costs and maintaining leverage on suppliers.

Defense contractors such as General Dynamics (GD) and OSK are well-established and have been in the business for over fifty years. Both GD and OSK are leaders when it comes to DOD contracts for armored vehicles. GD is the leader of defense contractors that produce armored vehicles. GD is a very large company with a market cap of $46 billion. GD is diversified across the entire defense industry. OSK's closest competitors in contracting for armored vehicles are General Dynamics (GD), Singapore Technologies Engineering Ltd (S63-SG) and Rheinmetall AG (RHM-DE). OSK is the second strongest of the four in armored vehicle sales.

Figures 10 and 11: Comparison of OSK defense comps by market cap (left) and defense sales (right)



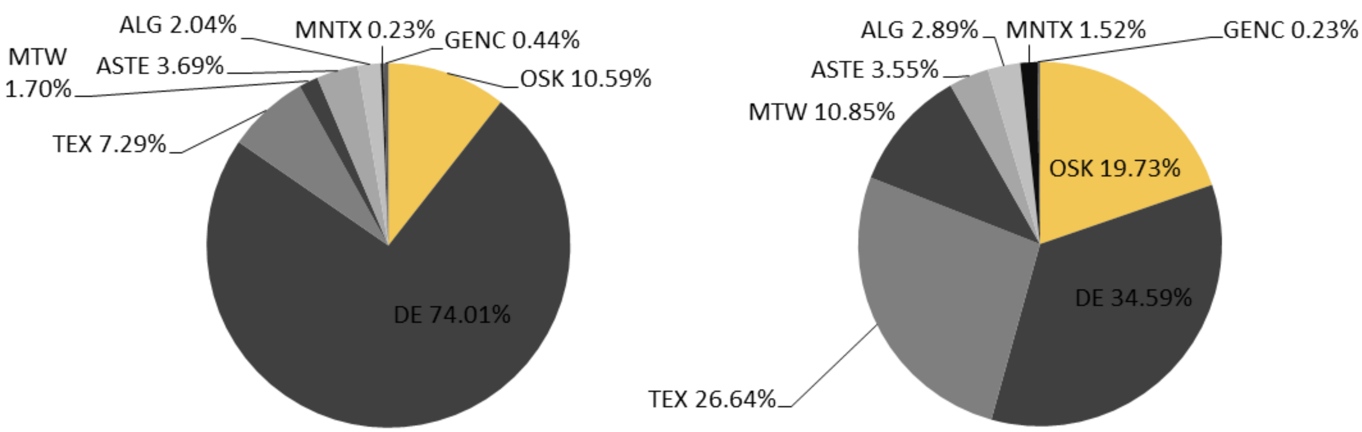
Source: FactSet, Bloomberg

Leaders in the trucks/construction /farm industry are well-known companies that provide superior products

In trucks/construction/farm equipment, OSK also competes with large and established firms. Industry leaders include Deere & Company (DE), which has an established brand (green) and is known to be very reliable. Like the green of Deere & Company, JLG is orange. JLG has become a leader in the innovation and production of some the world's best access equipment for construction. The probability of seeing a JLG machine at a construction site is high. JLG is becoming a "household" name.

DE is a leader in the struggling trucks/construction/farm industry, but this does not mean smaller companies like OSK cannot be successful in this industry. OSK's closest competitors include Terex (TEX) and Astec Industries, Inc. (ASTE). Of the three, TEX is the largest in terms of sales, followed by OSK.

Figures 12 and 13: Comparison of OSK access equipment comps by market cap (left) and access equipment sales (right)



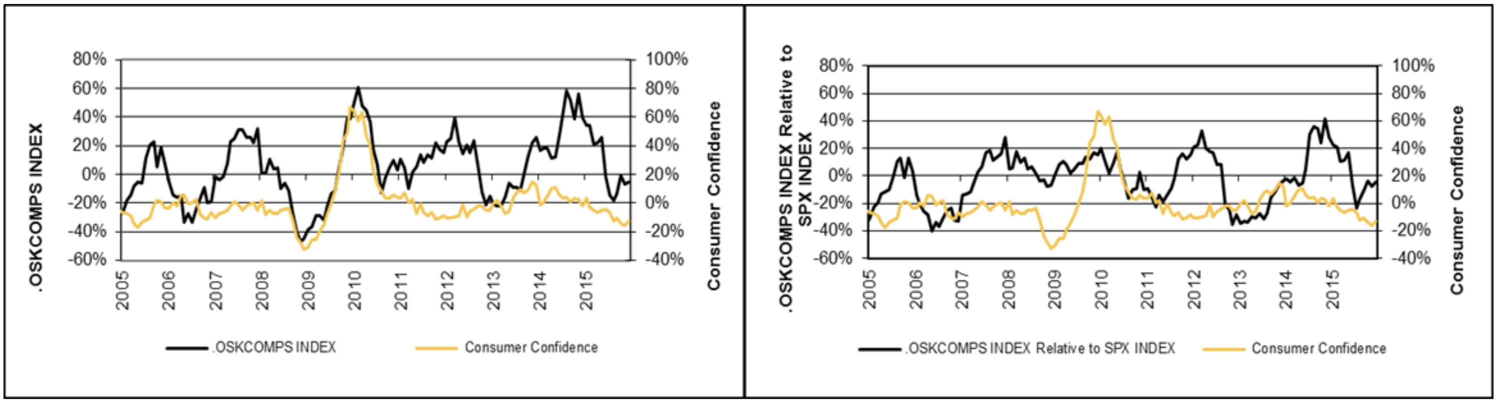
Source: FactSet, Bloomberg

The pie charts show that OSK's percent of sales is higher than percent of market cap for both peer groups. This suggests that investors are less optimistic about OSK. Additional statistics on a smaller comparable group are shown in Figure 28. OSK has above average margins and above average P/S.

<u>Macroeconomic Trends</u>

The truck/construction/farm industry is comprised of many cyclical businesses. As defense spending (war) and the economy are not necessarily correlated, during wartime the defense business is less cyclical than in time of peace. It may be the case that defense spending is indirectly driven by the economy in times of peace due to the way government budgets are structured.

Figures 14 and 15: Consumer confidence yearly percent change compared to OSK comps yearly percent change (left) and consumer confidence compared to OSK comps relative to the S&P 500 index (right)

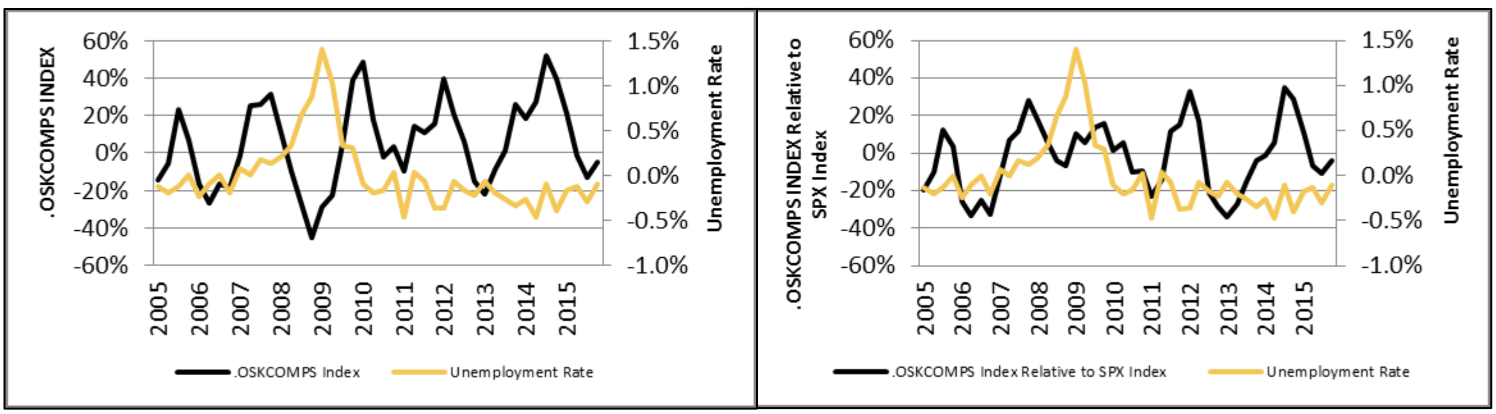


Source: Bloomberg, IMCP

Correlation: 0.244
R Square: 0.059

As consumer confidence rises, OSK and its competitors outperform S&P 500, and vice versa. Of course, confidence rises as the economy improves and this is when construction growth picks up.

Figures 16 and 17: Unemployment rate, compared to OSK comps (left) and Unemployment rate, compared to OSK comps relative to the S&P 500 index (right)



Source: Bloomberg, IMCP

Correlation: -0.412

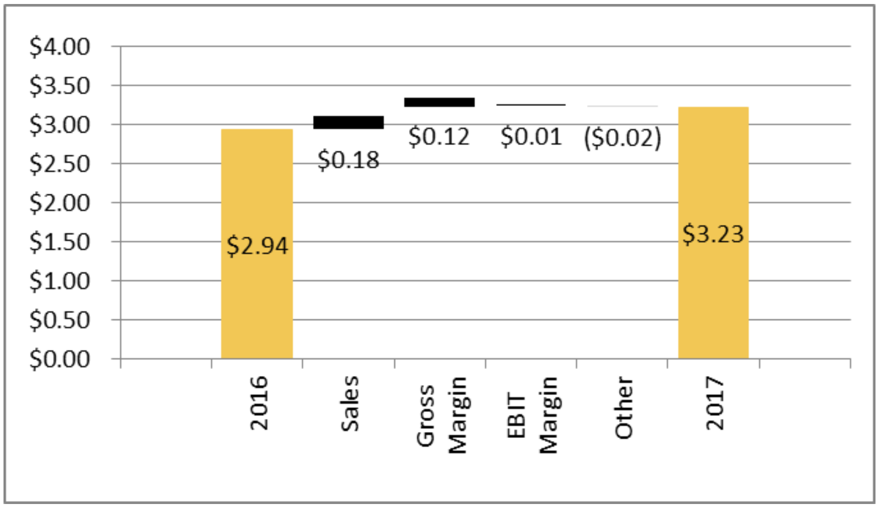
R Square: 0.170

OSK and its competitors perform well relative to the S&P 500 when the unemployment rate is low, and vice versa. Unemployment is negatively correlated with homebuilding, which greatly influences OSK's access business. Similarly, employment levels may influence the government's budget. Thus, higher unemployment may lead to a tight budget for defense spending.

Financial Analysis

I anticipate EPS to grow to $3.23 in FY 2017. Increasing revenues in defense, fire and emergency and commercial segments should increase earnings by $0.18 respectively. As the production of JLTV grows and becomes more efficient, the cost of sales will decrease, and a rising gross margin will further drive up EPS by $0.12. I expect that EBIT margin will increase EPS $0.01 as OSK reduces development of new products that it could sell to federal and state agencies. The tax rate is expected to rise which more than fully offsets the benefit of stock buybacks for a net loss to EPS of $0.02.

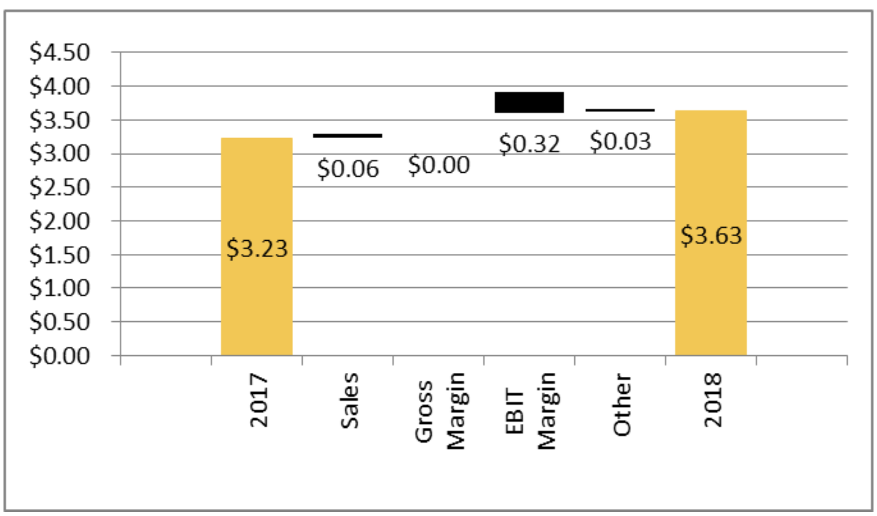
Figure 18: Quantification of 2017 EPS drivers



Source: Company Reports, IMCP

I expect 2018 EPS to increase $0.40 to $3.63. I predict that defense, fire and emergency and commercial segments will see continued sales growth, and the access equipment will see positive sales growth after three years of negative growth, which will ultimately increase EPS by $0.06. Gross margin will see little to no change and will not affect EPS in anyway. I predict that OSK will cut a significant amount of SG&A and R&D in FY 2018 and this will ultimately raise EPS by $0.32. As a light reduction in interest will boost EPS by $0.03.

Figure 19: Quantification of 2018 EPS drivers



Source: Company Reports, IMCP

I am, for the most part, in line with consensus estimates for FY 2017 and 2018 EPS estimates. I anticipate continued growth in the defense, fire and emergency and commercial segments. I also predict that the access equipment segment will rebound in FY 2018 after a number of years with negative growth.

Figure 20: Sales and EPS estimated for FY '17 and '18

	2017E	2018E
Revenue	$6,599	$6,707
YoY Growth	5%	2%
Revenue - Consensus	$6,644	$6,810
YoY Growth	6%	2%
EPS	$3.23	$3.63
YoY Growth	10%	13%
EPS - Consensus	$3.35	$3.57
YoY Growth	14%	7%

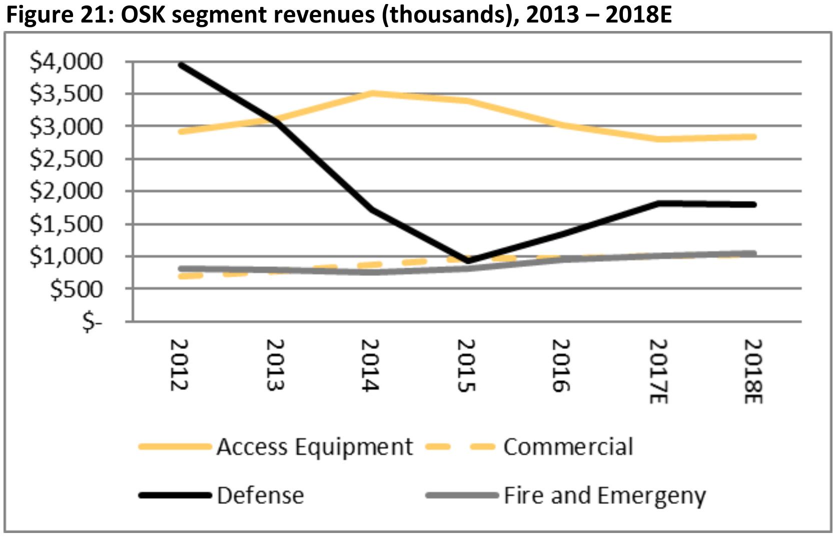
Source: Factset, IMCP

Revenues

Oshkosh Corporation's revenue declined quickly from 2012 through 2015, but has since reverted to positive growth in FY 2016. I expect the positive growth in 2016 to continue into 2017 and 2018. OSK's sales rose from the company's JLTV contract with the DOD. OSK's commercial segment will continue to see growth from a rebounding economy, as will the fire and emergency segment. Most importantly, I expect that the access equipment segment's negative growth to level off in 2017, and then in 2018, experience positive growth in revenue for the first time since 2014 due to an improving economy and possible infrastructure spending.

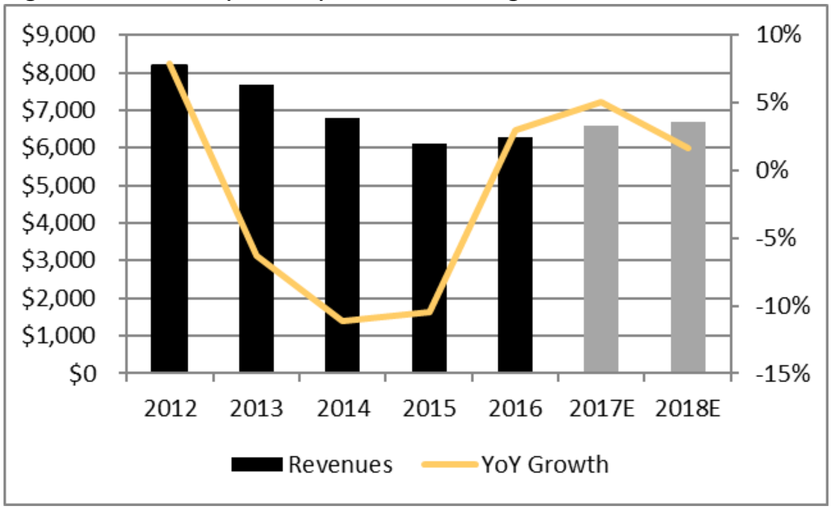
Global sales will increase in 2017 and 2018. OSK will see significant sales growth outside of the USA as the company continues to push for more of a presence in foreign countries.

Figure 21: OSK segment revenues (thousands), 2013 – 2018E



Source: Company Reports, IMCP

Figure 22: Revenue (millions) vs YoY revenue growth, 2012 – 2018E

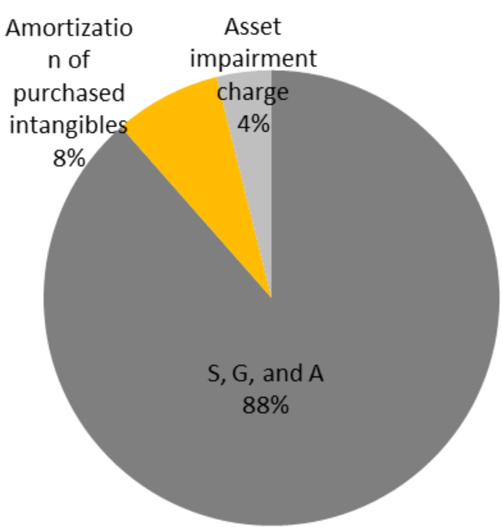


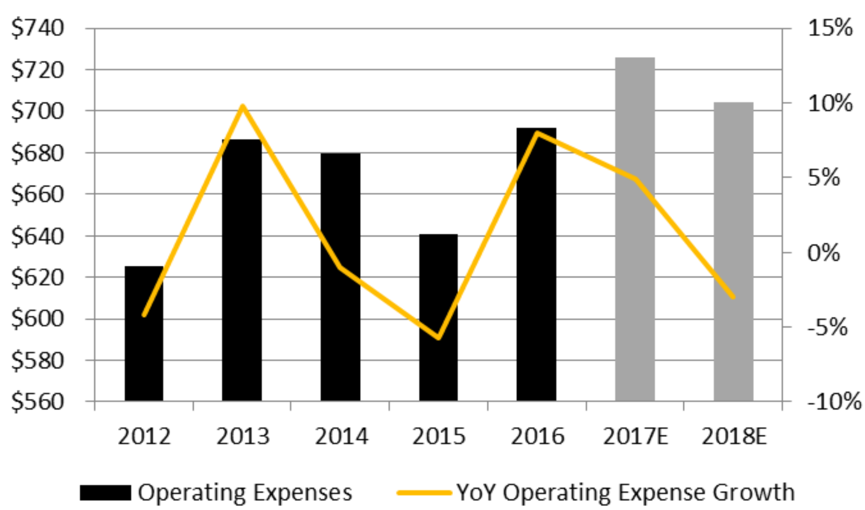
Source: Company Reports

Operating Income and Margins

The majority of the operating expenses are composed primarily of selling, general and administrative expenses. In addition, 8% and 4% of operating expenses are made up of amortization of purchased intangibles and asset impairment charges. I expect operating expenses to grow at the same pace as in 2017, but fall in 2018. I predict that OSK's efforts to restructure its access equipment business in Europe for cost savings reasons will result in operating expenses growing in 2017, and in 2018 OSK will experience the cost savings that it wants and operating expenses will decrease.

Figures 23 & 24: Composition of 2016 operating expenses (left) and operating expenses (millions) vs YoY operating expense





Source: Company Reports

SG&A will increase in 2017 with sales and then decrease exponentially in 2018.

Overall, OSK has had stable gross margins over the last couple of years, but EBIT margins fell in 2016. EBIT margin is down 1.6% since 2014 while gross margins have fallen 0.6%. Operating expenses were difficult to cut as sales fell. OSK's initiative to restructure and make its operations more effective has lowered the company's margins for the time being. By fiscal year 2018, I expect operating margins to increase to 6.5%.

Figure 25: OSK Operating margins, 2015 – 2018E

	2014	2015	2016	2017E	2018E
Sales	$6,808	$6,098	$6,279	$6,599	$6,707
Cost of goods sold	5,626	5,059	5,223	5,477	5,567
Gross income	1,183	1,039	1,056	1,122	1,140
Gross margin	*17.4%*	*17.0%*	*16.8%*	*17.0%*	*17.0%*
Operating expenses	679	641	692	726	704
Growth	*-1.0%*	*-5.7%*	*8.0%*	*4.9%*	*-3.0%*
Operating income	398	399	364	396	436
Operating margin	5.8%	6.5%	5.8%	6.0%	6.5%

Source: Company Reports

<u>Return on Equity</u>

OSK's ROE has decreased over the past four years through 2016. Profit margins and asset turnover have fallen. Going forward, I expect margins and asset turns to rise as sales rebound and push up ROE. However, lower leverage will reduce the ROE gains.

As sales increase, ROE will increase.

Figure 26: ROE breakdown, 2011 – 2016E

3-stage DuPont	2013	2014	2015	2016	2017E	2018E
Net income / sales	4.1%	4.5%	3.8%	3.4%	3.5%	3.8%
Sales / avg assets	1.58	1.46	1.33	1.39	1.47	1.48
ROA	6.5%	6.6%	5.0%	4.8%	5.1%	5.7%
Avg assets / avg equity	2.45	2.29	2.35	2.33	2.29	2.21
ROE	16.1%	15.1%	11.8%	11.1%	11.6%	12.5%

Source: Company Reports

Free Cash Flow

Figure 27: Free cash flows 2012 – 2018E

Free Cash Flow	2012	2013	2014	2015	2016	2017E	2018E
NOPAT	$293	$356	$358	$277	$254	$265	$292
Growth		*21.6%*	*0.4%*	*-22.5%*	*-8.3%*	*4.3%*	*10.1%*
NWC*	449	582	779	960	748	660	570
Net fixed assets	2,253	2,212	2,202	2,176	2,096	2,056	2,274
Total net operating capital*	$2,703	$2,795	$2,981	$3,135	$2,844	$2,716	$2,844
Growth		*3.4%*	*6.7%*	*5.2%*	*-9.3%*	*-4.5%*	*4.7%*
- Change in NWC*		133	197	181	(212)	(88)	(90)
- Change in NFA		(41)	(10)	(27)	(79)	(40)	218
FCFF*		$264	$171	$123	545	$394	$164
Growth			*-35.3%*	*-27.7%*	*341.8%*	*-27.8%*	*-58.3%*
- After-tax interest expense	63	43	51	50	40	39	37
FCFE**		$221	$120	$73	$506	$355	$127
Growth			*-45.8%*	*-39.2%*	*592.5%*	*-29.8%*	*-64.2%*
FCFF per share*		$3.01	$2.03	$1.58	$7.41	$5.57	$2.32
Growth			-33%	-22%	368%	-25%	-58%
FCFE per share**		$2.52	$1.43	$0.94	$6.87	$5.01	$1.79
Growth			*-43.4%*	*-34.4%*	*634.1%*	*-27.0%*	*-64.2%*

Source: Company Reports

OSK's free cash flow has varied extensively in the last couple of years. The company pays about $60 million in dividends and has been paying off debt ($100 million from 2012 to 2016). OSK has also purchased about 20% of its stock between 2012 and 2016. In 2017, I expect $200 million of share purchases. NOPAT is expected to grow while capital will shrink in 2017. However, capital fell even more in 2016, FCFE will decline in 2017. In 2018, capital growth is positive which will reduce cash flow, so I do not forecast buybacks that year even though NOPAT is expected to rise 10%.

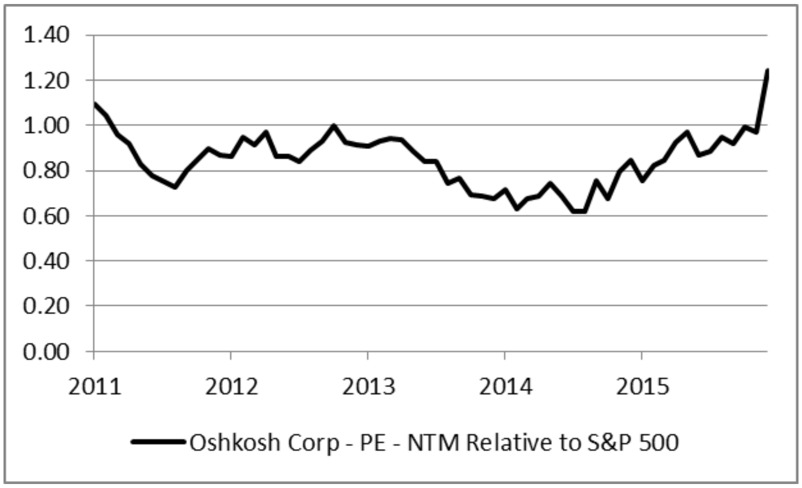
Valuation

OSK was valued using multiples and a 3-stage discounting cash flow model. Based on earnings multiples, the stock price is relatively accurate compared to other firms and is worth $65. Relative valuation shows OSK to be slightly undervalued based on its fundamentals versus those of its peers in the Defense and Trucks/Construction/Farm Machinery industries. Price to book valuation yielded a price of $65. A detailed DCF analysis values OSK slightly lower, at $58. Finally, a probability-weighted scenario analysis yields a price of $69. As a result of these valuations, I value the stock at $63.

Trading History

OSK is currently trading near its five year high relative to the S&P 500. This is the result of increased earnings growth expectations by investors since the election of Trump. OSK's current NTM P/E is at 19.9 compared to its five year average of 12.7. I expect the P/E to be stable or rise in the short term, but in the long-term it will fall somewhere between todays NTM P/E of 19.9 and the five year historical average of 12.7.

Figure 28: OSK NTM P/E relative to S&P 500



Source: Factset

Assuming the firm maintains a 19.9 NTM P/E at the end of 2017, it should trade at $72.37 by the end of the year.

I believe that the market is quite optimistic on OSK as it is fairly valued if we use a lofty P/E to value 2018 EPS which already reflects renewed growth.

- Price = P/E x EPS = 19.9 x $3.63 = $72.37

Discounting $72.37 back to today at a 11% cost of equity (explained in Discounted Cash Flow section) yields a price of $65.00. This implies that it is fairly valued if I use an optimistic P/E.

Relative Valuation

Oshkosh Corporation is currently trading at a P/E just above the average and median of its peers, with a P/E TTM of 22.9 compared to an average of 20.0 and a median of 21.5. Investors have been open to paying a greater premium for OSK as both its defense segment and its access equipment segment turn at the same time. OSK's P/B is in line with its competitors and its P/S ratio is greater than its competitors. This is a reflection of OSK's average ROE and above-average net profit margin.

Figure 29: OSK comparable companies

Ticker	Name	Current Price	Market Value	Price Change 1 day	1 Mo	3 Mo	6 Mo	52 Wk	YTD	Earnings Growth LTG	NTM	2014	2015	2016	2017	Pst 5yr	Beta	LT Debt/ Equity	S&P Rating	LTM Dividend Yield	Payout
OSK	OSHKOSH CORP	$66.57	$4,957	(0.5)	(0.5)	18.2	38.8	76.6	70.5	12.9	15.4%	1.4%	-20.0%	0.0%	9.7%		1.80	41.8%	B	1.11%	26.1%
GD	GENERAL DYNAMICS CORP	$174.10	$53,017	(0.7)	3.4	13.7	24.9	26.1	26.7	7.3	5.9%	11.4%	16.0%	7.8%	2.8%	5.9%	0.84	34.3%	A	1.69%	31.7%
S63-SG	SINGAPORE TECH ENG	$2.27	$7,027	(0.6)	2.2	0.0	5.1	9.7	9.0	4.1		-13.3%	-7.7%	-8.3%	9.1%	1.0%	0.93	47.9%		2.96%	68.1%
064350-KR	HYUNDAI ROTEM CO L	$15.33	$1,303	(0.8)	(5.7)	(9.0)	0.0	18.1	24.9		-114.2%	-110.8%	1605.6%	-108.1%	104.0%		1.31	74.0%		0.00%	
RHM-DE	RHEINMETALL AG	$66.48	$2,896	0.8	(7.0)	0.3	9.7	4.7	3.6	12.3		-38.1%	547.7%	14.0%	20.6%	-1.8%	0.51	54.2%		1.63%	
DE	DEERE & CO	$103.09	$32,666	(0.5)	11.7	24.1	22.6	36.2	35.2	9.5	-7.6%	-5.1%	-33.1%	-16.6%	-7.3%		0.73	364.4%	B+	2.40%	49.9%
TEX	TEREX CORP	$32.15	$3,405	0.7	12.8	32.9	47.1	74.6	74.0	8.8	-15.5%	44.6%	-52.3%	-42.1%	36.4%		1.70	88.0%	B-	0.92%	28.9%
ASTE	ASTEC INDUSTRIES INC	$66.85	$1,540	(1.5)	5.3	14.8	19.6	73.0	64.3	10.0	44.1%	-11.8%	-4.7%	67.6%	22.7%	0.0%	1.38	0.7%	B	0.60%	19.9%
Average			$13,351	(0.4)	2.8	11.9	21.0	39.9	38.5	9.3	-12.0%	-15.2%	256.4%	-10.7%	24.7%	1.3%	1.15	88.2%		1.41%	37.4%
Median			$4,181	(0.6)	2.8	14.3	21.1	31.1	31.0	9.5	-0.9%	-8.4%	-6.2%	-4.2%	15.1%	0.5%	1.12	51.1%		1.37%	30.3%
SPX	S&P 500 INDEX	$2,265		(0.2)	3.0	4.7	8.4	12.1	10.8			7.7%	1.2%	7.6%	12.4%						

Ticker	Website	2015 ROE	P/B	P/E 2013	2014	2015	TTM	NTM	2016	2017E	2015 NPM	2015 P/S	OM	ROIC	EV/ EBIT	P/CF Current	P/CF 5-yr	Sales Growth NTM	STM	Pst 5yr	Book Equity
OSK	http://www.oshkoshcorporation.com	11.0%	2.49	18.4	18.1	22.6	22.9	19.8	22.6	20.6	6.1%	1.39	6.2%	7.8%	12.0			5.5%	0.5%	-3.7%	$26.74
GD	http://www.generaldynamics.com	24.4%	4.68	24.8	22.2	19.2	18.6	17.5	17.8	17.3	8.8%	1.68	13.7%	20.5%	10.9	14.1	11.0	2.4%	2.8%	-0.6%	$37.16
S63-SG	http://www.stengg.com	27.1%	5.14	15.2	17.5	18.9	21.5		20.7	18.9	8.3%	1.57	9.3%	17.0%	18.0	14.5	14.0			1.1%	$0.44
064350-KR		-22.4%	1.12	9.2	-85.2	-5.0	-6.4	45.3	61.3	30.1	-9.2%	0.46	-5.5%	-11.2%	-16.3	-14.3		0.6%		3.6%	$13.73
RHM-DE	http://www.rheinmetall.com	12.0%	1.89	63.3	102.3	15.8	14.4		13.8	11.5	3.3%	0.51	3.0%	7.3%	17.3	5.9	5.8			5.4%	$35.19
DE	http://www.deere.com	24.4%	4.36	11.3	11.9	17.9	21.4	23.2	21.4	23.1	7.1%	1.27		5.0%	20.4	9.0		-13.0%	1.5%		$23.63
TEX	http://www.terex.com	7.4%	1.80	16.7	11.5	24.2	34.4	40.7	41.8	30.6	2.2%	0.52	4.4%	3.9%	8.9	14.0	7.7	-21.2%	2.9%	8.2%	$17.88
ASTE	http://www.astecindustries.com	5.1%	2.39	39.6	44.9	47.1	33.3	23.1	28.1	22.9	3.3%	1.57	7.1%	5.4%	18.7	16.5	11.7	16.6%	9.2%	5.0%	$27.94
Average		11.1%	2.98	24.8	17.9	20.1	20.0	28.3	28.4	21.9	3.7%	1.12	5.5%	7.0%	11.2	8.5	10.0	-1.5%	3.4%	2.7%	
Median		11.5%	2.44	17.5	17.8	19.1	21.5	23.1	22.0	21.8	4.7%	1.33	6.2%	6.4%	14.6	14.0	11.0	1.5%	2.8%	3.6%	

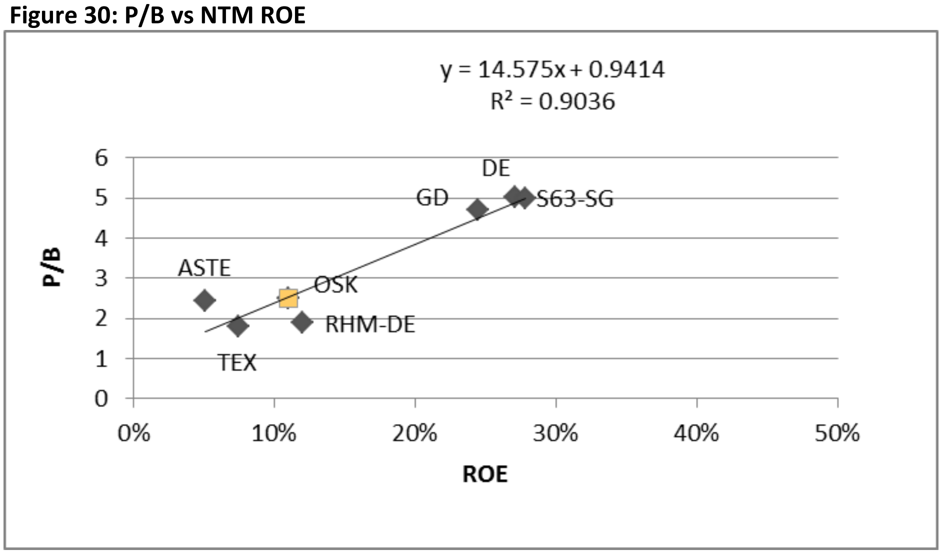
Source: Factset

A more in depth analysis of P/B and ROE is shown in figure 29. The calculated R-squared of the regression indicates that over 90% of a firm's P/B is explained by its 2015 ROE. OSK has an average P/B and ROE among its comparables. According to this, OSK is just slightly undervalued. I believe that this regression is relatively accurate, but undervalues OSK slightly. Hyundai Rotem was removed from this valuation as it has a negative ROE.

- Estimated P/B = Estimated 2017 ROE (11.6%) x 14.575 + (.9414) = 2.63
- Target Price = Estimated P/B (2.63) x 2017E BVPS (27.55) = $72.51

Discounting back to the present at a 11% cost of equity leads to a target price of $65.26 using this metric.

Figure 30: P/B vs NTM ROE



Source: Factset

OSK's BVPS was $26.74 in fiscal year 2016. This is in line with OSK's competitors.

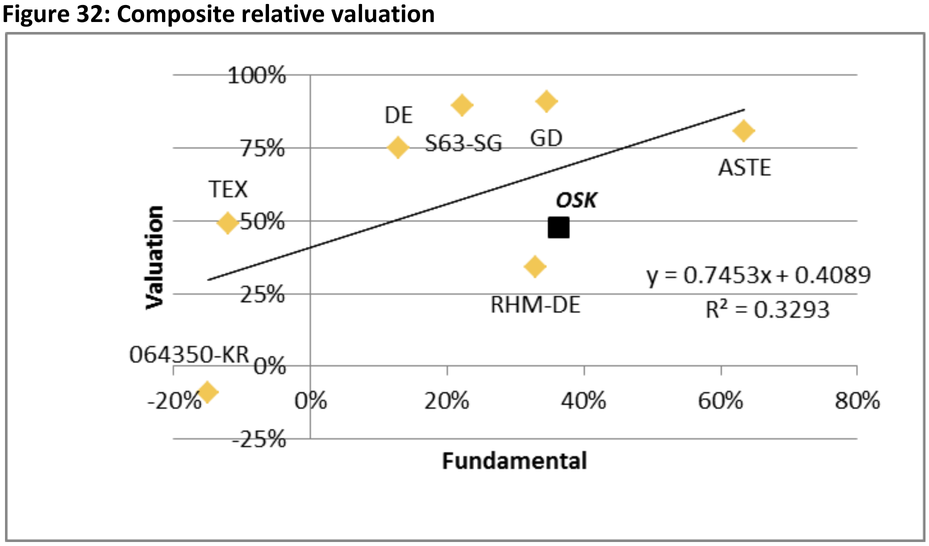
For a final comparison, I created a composite ranking of several valuation and fundamental metrics. Since the variables have different scales, each was converted to a percentile before calculating the composite score. An equal weighting of long term growth rate, ROE, 2016 and 2017E earnings growth, and NTM sales growth was compared to an equal weight composite of P/B, P/S and P/CF. The regression line had an R-squared of .33. OSK is below the regression line; it is relatively inexpensive compared to its comparables based on fundamentals.

Figure 31: Composite valuation, % of range

		Fundamental Percent of Max					Valuation				
		20.0%	20.0%	20.0%	20.0%	20.0%	33.3%	33.3%	33.3%		
Ticker	Ticker	LTG	2016 EPS GR	2017 EPS GR	ROE	NTM Sales GR	P/B	P/S	P/CF	Fund	Value
OSK	OSHKOSH CORP	100%	0%	9%	40%	33%	50%	82%	12%	36%	48%
GD	GENERAL DYNAMICS CORP	57%	12%	3%	88%	14%	94%	100%	79%	35%	91%
S63-SG	SINGAPORE TECH ENG	32%	-12%	9%	97%	-14%	100%	91%	78%	22%	89%
064350-KR	HYUNDAI ROTEM CO L	66%	-160%	100%	-80%	-1%	22%	27%	-77%	-15%	-9%
RHM-DE	RHEINMETALL AG	95%	21%	20%	43%	-14%	38%	31%	34%	33%	34%
DE	DEERE & CO	74%	-25%	-7%	100%	-78%	99%	75%	51%	13%	75%
TEX	TEREX CORP	69%	-62%	35%	27%	-128%	36%	31%	81%	-12%	49%
ASTE	ASTEC INDUSTRIES INC	78%	100%	22%	18%	100%	48%	94%	100%	64%	81%

Source: IMCP

Figure 32: Composite relative valuation



Source: IMCP

<u>Discounted Cash Flow Analysis</u>

A three stage discounted cash flow model was also used to value OSK.

For the purpose of this analysis, the company's cost of equity was calculated to be 11.1% using the Capital Asset Pricing Model. The underlying assumptions used in calculating this rate are as follows:

- The risk free rate, as represented by the ten year Treasury bond yield, is 2.54%.
- A ten year beta of 1.15 was utilized as it is the average beta of comparables, and the firm is exposed to the economic cycle.

- A long term market rate of return of 10% was assumed, since historically, the market has generated an annual return of about 10%.

Given the above assumptions, the cost of equity is 11.1% (2.54 + 1.15 (10.0 – 2.54)).

Stage One - The model's first stage simply discounts fiscal years 2017 and 2018 free cash flow to equity (FCFE). These per share cash flows are forecasted to be $5.01 and $1.79, respectively. Discounting these cash flows, using the cost of equity calculated above, results in a value of $5.97 per share. Thus, stage one of this discounted cash flow analysis contributes $5.97 to value.

Stage Two - Stage two of the model focuses on fiscal years 2019 to 2023. During this period, FCFE is calculated based on revenue growth, NOPAT margin and capital growth assumptions. The resulting cash flows are then discounted using the company's 11% cost of equity. I assume 5% sales growth in 2019 through 2023 as OSK's markets stabilize and the company maintains stable growth. The ratio of NWC to sales and NFA turnover will remain at 2018 levels. Also, the NOPAT margin is expected to stay the same at 4.4% as OSK will finalize restructuring efforts. Finally, after-tax interest is expected to grow by 5.0% each year as the result of increases in borrowing.

Figure 33: FCFE and discounted FCFE, 2017 – 2023

	2017	2018	2019	2020	2021	2022	2023
FCFE	$5.01	$1.79	$1.79	$1.90	$2.01	$2.13	$2.26
Discounted FCFE	$4.51	$1.45	$1.31	$1.25	$1.19	$1.13	$1.08

Added together, these discounted cash flows total $5.95.

Stage Three – Net income for the years 2019 – 2023 is calculated based upon the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from $3.23 in 2017 to $4.70 in 2023.

Figure 34: EPS estimates for 2017 – 2023

	2017	2018	2019	2020	2021	2022	2023
EPS	$3.23	$3.63	$3.80	$4.01	$4.23	$4.46	$4.70

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. OSK historically trades very closely to the market P/E, but for this case we assume that OSK will trade 1.3x to the market P/E. This is because the company is expected to see improved earnings growth in the coming years. If we assume the market P/E is 17, OSK's P/E will be 20.40 at the end of its terminal year. This P/E may be a bit too high, but investors seem to be enthusiastic about OSK and the firm is currently trading at a high P/E which needs to be taken into account.

Given the assumed terminal earnings per share of $4.70 and a price to earnings ratio of 20.40, a terminal value of $95.95 per share is calculated. Using the 11.1% cost of equity, this number is discounted back to a present value of $45.87.

Total Present Value – Given the above assumptions and utilizing a three stage discounted cash flow model, an intrinsic value of $57.79 is calculated (5.97 + 5.95 + 45.87). Given OSK's current price of $66.72, this model indicates that the stock is slightly overvalued.

Scenario Analysis

Oshkosh Corporation is difficult to value because it is difficult to predict U.S. defense spending and hard to predict the housing market that impacts a number of its segments. I valued OSK under twelve scenarios by changing combinations of three key factors.

Sales Growth – Improving growth assumes that OSK is able to continue and even improve its product sales. Sales would grow by 6% each year and exceed 2012 sales levels of $8 billion and almost reach $9 billion by 2023. I give this outcome a 10% probability because of the uncertainties present, especially in the defense segment. Stable growth uses the base case 5% growth, and is given a 50% probability. Weak growth assumes that OSK does not gain as many new defense contracts and access equipment growth is lower. The growth rate is 4%. I give this outcome a 40% probability because defense contracts are uncertain post the presidential election.

EBIT Margin – If OSK improves or maintains its sales growth it will become more efficient and operating expenses will decrease as time goes on. If sales growth is improving or stable, there is a 60% probability that OSK's EBIT margin significantly increases to 7.0% and 8.5% in 2017 and 2018 respectively, and a 40% probability that the margin stays modest at 6% and 6.5% respectively. If there is weak growth, I assign a 50% probability for both significant and modest EBIT cost savings.

Gross Margin – I assume that OSK is either stable and maintains margins (17%) because it has the top products in its industry or it declines and margins decrease (15% and 14% in 2017 and 2018). In times of improving sales growth, I assign a probability of 50% to stable, and 50% to declining margin levels. In times of stable sales growth, I assign a probability of 30% to stable, and 70% to declining margin levels. In times of weak sales growth, I assign a probability 10% to stable, and 70% to declining margin levels. This happens if OSK starts to make shortcuts in production and its products become inferior.

Figure 35: Scenario analysis

Sales Growth	EBIT Margin	Gross Margin	DCF Value	Probablity	Weighted Value
Improving Growth (p=0.1)	Significant (p=0.6)	Stable (p=0.5)	$81.90	3%	**$2.46**
		Declining (p=0.5)	$81.87	3%	**$2.46**
	Modest (p=0.4)	Stable (p=0.5)	$59.27	2%	**$1.19**
		Declining (p=0.5)	$59.23	2%	**$1.18**
Stable Growth (p=0.5)	Significant (p=0.6)	Stable (p=0.3)	$79.58	9%	**$7.16**
		Declining (p=0.7)	$79.55	21%	**$16.71**
	Modest (p=0.4)	Stable (p=0.3)	$57.83	6%	**$3.47**
		Declining (p=0.7)	$57.80	14%	**$8.09**
Weak Growth (p=0.4)	Significant (p=0.5)	Stable (p=0.1)	$77.34	2%	**$1.55**
		Declining (p=0.9)	$77.31	18%	**$13.92**
	Modest (p=0.5)	Stable (p=0.1)	$56.45	2%	**$1.13**
		Declining (p=0.9)	$56.24	18%	**$10.12**
Total of Probability Weighted Values:					$69.43

A value of OSK stock was reached using the same discounted cash flow method outlined in the previous section. Each scenario's value was then multiplied by the scenario's probability to yield a probability-weighted value; the sum of these values is the likely price. This technique results in a target price of $69.43.

One can see from this analysis that OSK is very sensitive to changes in sales growth compared to its sensitivity to gross margin and operating efficiency. OSK struggles when sales growth is depressed. Historically, gross margins have been stable which is good for OSK, and if it maintains a healthy EBIT margin and sees healthy growth, the stock value could increase substantially. If sales do not grow and OSK does not increase efficiency, the firm deserves to be valued much lower.

I recommend paying close attention to OSK's sales growth and operating costs over time. The company can continue to grow in value if sales see growth, but if sales growth is depressed or goes negative, the company will have significant risks.

Business Risks

Even though I am optimistic about Oshkosh Corporation, there are a number of factors that may be causes for concern.

Highly cyclical markets:

In FY 2016, OSK's defense segment made up 21.5% of its sales, and defense sales are a product of U.S. military conflicts. If military conflicts decrease, OSK's defense sales will decline (*Source: OSK 10K 16').*

Tax rates:

Much of OSK's business is dependent on government spending. If federal, state, and local taxes were cut substantially, OSK would be at risk as its defense, commercial, and fire and emergency segment's sales would decrease substantially.

Obtaining and keeping defense contracts:

Obtaining defense contracts is not easy and it is highly competitive. On top of this, OSK cannot guarantee that all contracts will be fulfilled, as the US government can delay the contracts until the contract expires or they can cancel it all together (*Source: OSK 10K 16')*.

Access equipment rental uncertainties:

Construction equipment rental companies are the main buyers of OSK access equipment products, and their business varies with the economy. Thus, OSK's largest business is cyclical (*Source: 10K 16').*

Appendix 1: Sales Forecasts

Sales (Millions)							
Items	**Dec-12**	**Dec-13**	**Dec-14**	**Dec-15**	**Dec-16**	**Dec-17**	**Dec-18**
Sales	$8,181	$7,665	$6,808	$6,098	$6,279	6,599	$6,707
Growth	*7.9%*	*-6.3%*	*-11.2%*	*-10.4%*	*3.0%*	*5.1%*	*1.6%*
Access Equipment	2,920	3,121	3,507	3,401	3,012	2,802	2,835
Growth		*6.9%*	*12.4%*	*-3.0%*	*-11.4%*	*-7.0%*	*1.2%*
% of sales	*35.7%*	*40.7%*	*51.5%*	*55.8%*	*48.0%*	*42.5%*	*42.3%*
Commercial	697	767	866	978	979	1,004	1,039
Growth		*10.0%*	*12.9%*	*12.9%*	*0.1%*	*2.5%*	*3.5%*
% of sales	*8.5%*	*10.0%*	*12.7%*	*16.0%*	*15.6%*	*2.0%*	*15.5%*
Defense	3,951	3,050	1,725	940	1,351	1,810	1,801
Growth		*-22.8%*	*-43.5%*	*-45.5%*	*43.8%*	*34.0%*	*-0.5%*
% of sales	*48.3%*	*39.8%*	*25.3%*	*15.4%*	*21.5%*	*27.4%*	*26.9%*
Fire and Emergeny	808	792	757	815	953	1,006	1,056
Growth		*-2.0%*	*-4.5%*	*7.7%*	*17.0%*	*5.5%*	*5.0%*
% of sales	*9.9%*	*10.3%*	*11.1%*	*13.4%*	*15.2%*	*15.2%*	*15.7%*
Intersegment eliminations	(195)	(65)	(45)	(35)	(17)	(22)	(24)
Growth		*-66.7%*	*-30.1%*	*-21.7%*	*-52.5%*	*32.0%*	*10.0%*
% of sales	*-2.4%*	*-0.8%*	*-0.7%*	*-0.6%*	*-0.3%*	*-0.3%*	*-0.4%*
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
United States	6,397	6,035	5,248	4,789	4,757	4,751	4,695
Growth		*-5.7%*	*-13.0%*	*-8.7%*	*-0.7%*	*-0.1%*	*-1.2%*
% of sales	*78.2%*	*78.7%*	*77.1%*	*78.5%*	*75.8%*	*72.0%*	*70.0%*
Other North America	248	235	351	303	220	277	282
Growth		*-5.3%*	*49.3%*	*-13.8%*	*-27.5%*	*26.3%*	*1.6%*
% of sales	*3.0%*	*3.1%*	*5.2%*	*5.0%*	*3.5%*	*4.2%*	*4.2%*
All Other	1,536	1,395	1,209	1,006	1,303	1,571	1,730
Growth		*-9.1%*	*-13.3%*	*-16.8%*	*29.5%*	*20.5%*	*10.2%*
% of sales	*18.8%*	*18.2%*	*17.8%*	*16.5%*	*20.8%*	*23.8%*	*25.8%*

Appendix 2: Income Statement

Income Statements (millions)	2012	2013	2014	2015	2016	2017E	2018E
Sales	$8,181	$7,665	$6,808	$6,098	$6,279	$6,599	$6,707
Direct costs	7190	6473	5626	5059	5223	5477	5567
Gross Margin	991	1192	1183	1039	1056	1122	1140
SG&A, R&D, and other	625	686	679	641	692	726	704
Earnings before Interest and tax	366	506	503	399	364	396	436
Interest	79	61	71	73	57	59	56
Earnings before tax	287	445	432	326	307	337	380
Taxes	57	132	125	99	92	111	125
Income	229	313	307	227	215	226	255
Other	-2	-5	-2	-3	-2	-2	-2
Net income	231	318	309	230	216	228	257
Dividends							
Basic Shares	91.33	87.73	84.12	77.99	73.57	70.71	70.71
Earnings per share	$2.53	$3.62	$3.68	$2.94	$2.94	$3.23	$3.63
Dividends per share	$0.00	$0.00	$0.60	$0.68	$0.76	$0.80	$0.85

Appendix 3: Balance Sheet

Balance Sheets (millions)	2012	2013	2014	2015	2016	2017E	2018E
ASSETS							
Cash	541	734	314	43	322	362	381
Operating assets ex cash	2154	1820	2071	2334	2096	2046	1945
Operating assets	2695	2553	2384	2377	2418	2408	2326
Operating liabilities	1705	1316	1292	1375	1348	1386	1375
NOWC	990	1238	1093	1003	1070	1022	951
NOWC ex cash (NWC)	449	582	779	960	748	660	570
NFA	2253	2212	2202	2176	2096	2056	2274
Invested capital	*$3,243*	*$3,450*	*$3,295*	*$3,178*	*$3,166*	*$3,078*	*$3,224*
Total assets	*$4,948*	*$4,766*	*$4,587*	*$4,553*	*$4,514*	*$4,464*	*$4,599*
LIABILITIES AND SHAREHOLDERS' EQUITY							
Short-term and long-term debt	$955	$955	$895	$928	$846	$826	$811
Other liabilities	435.2	387.2	415.1	339.2	343.5	303.5	268.5
Debt/equity-like securities	0	0	0	0	0	0	0
Equity	1854	2108	1985	1911	1977	1948	2145
Total supplied capital	$3,244	$3,450	$3,295	$3,178	$3,166	$3,078	$3,224
Total liabilities and equity	*$4,948*	*$4,766*	*$4,587*	*$4,553*	*$4,514*	*$4,464*	*$4,599*

Appendix 4: Ratios

Ratios	Sep-12	Sep-13	Sep-14	Sep-15	Sep-16	Sep-17	Sep-18
Profitability							
Gross margin	12.1%	15.5%	17.4%	17.0%	16.8%	17.0%	17.0%
Operating (EBIT) margin	4.5%	6.6%	7.4%	6.5%	5.8%	6.0%	6.5%
Net profit margin	2.8%	4.1%	4.5%	3.8%	3.4%	3.5%	3.8%
Activity							
NFA (gross) turnover		3.43	3.08	2.79	2.94	3.18	3.10
Total asset turnover		1.58	1.46	1.33	1.39	1.47	1.48
Liquidity							
Op asset / op liab	1.58	1.94	1.85	1.73	1.79	1.74	1.69
NOWC Percent of sales		14.5%	17.1%	17.2%	16.5%	15.8%	14.7%
Solvency							
Debt to assets	19.3%	20.0%	19.5%	20.4%	18.7%	18.5%	17.6%
Debt to equity	51.5%	45.3%	45.1%	48.5%	42.8%	42.4%	37.8%
Other liab to assets	8.8%	8.1%	9.1%	7.5%	7.6%	6.8%	5.8%
Total debt to assets	28.1%	28.2%	28.6%	27.8%	26.4%	25.3%	23.5%
Total liabilities to assets	62.5%	55.8%	56.7%	58.0%	56.2%	56.4%	53.4%
Debt to EBIT	2.61	1.89	1.78	2.33	2.32	2.09	1.86
EBIT/interest	4.62	8.33	7.05	5.50	6.39	6.76	7.83
Debt to total net op capital	29.4%	27.7%	27.2%	29.2%	26.7%	26.8%	25.2%
ROIC							
NOPAT to sales		4.6%	5.3%	4.5%	4.1%	4.0%	4.4%
Sales to IC		2.29	2.02	1.88	1.98	2.11	2.13
Total		10.6%	10.6%	8.6%	8.0%	8.5%	9.3%
Total using EOY IC	9.0%	10.3%	10.9%	8.7%	8.0%	8.6%	9.1%
ROE							
5-stage							
EBIT / sales		6.6%	7.4%	6.5%	5.8%	6.0%	6.5%
Sales / avg assets		1.58	1.46	1.33	1.39	1.47	1.48
EBT / EBIT		88.0%	85.8%	81.8%	84.3%	85.2%	87.2%
Net income /EBT		71.5%	71.6%	70.4%	70.5%	67.6%	67.5%
ROA		6.5%	6.6%	5.0%	4.8%	5.1%	5.7%
Avg assets / avg equity		2.45	2.29	2.35	2.33	2.29	2.21
ROE		16.1%	15.1%	11.8%	11.1%	11.6%	12.5%
3-stage							
Net income / sales		4.1%	4.5%	3.8%	3.4%	3.5%	3.8%
Sales / avg assets		1.58	1.46	1.33	1.39	1.47	1.48
ROA		6.5%	6.6%	5.0%	4.8%	5.1%	5.7%
Avg assets / avg equity		2.45	2.29	2.35	2.33	2.29	2.21
ROE		16.1%	15.1%	11.8%	11.1%	11.6%	12.5%
Payout Ratio		0.0%	16.4%	23.1%	25.8%	24.8%	23.4%
Retention Ratio		100.0%	83.6%	76.9%	74.2%	75.2%	76.6%
Sustainable Growth Rate		16.1%	12.6%	9.1%	8.3%	8.7%	9.6%

Appendix 5: Comp Sheet

Comp Sheet

		Current	Market	Price Change						Earnings Growth								LT Debt/	S&P	LTM Dividend	
Ticker	Name	Price	Value	1 day	1 Mo	3 Mo	6 Mo	52 Wk	YTD	LTG	NTM	2014	2015	2016	2017	Pst 5yr	Beta	Equity	Rating	Yield	Payout
OSK	OSHKOSH CORP	$66.72	$4,968	0.6	(4.6)	31.1	37.2	67.1	70.9	12.9	15.4%	1.4%	-20.0%	0.0%	9.7%		1.80	41.8%	B	1.11%	26.1%
GD	GENERAL DYNAMICS CORP	$175.25	$53,367	0.4	2.8	13.9	25.4	25.3	27.6	7.3	5.9%	11.4%	16.0%	7.8%	2.8%		0.84	34.3%	A	1.69%	31.7%
S63-SG	SINGAPORE TECH ENG	$2.22	$6,859	0.0	(1.8)	(2.7)	2.9	5.9	6.6	4.1		-13.3%	-7.7%	-8.3%	9.1%	1.0%	0.93	47.9%		2.96%	68.1%
064350-KR	HYUNDAI ROTEM CO L	$15.30	$1,300	0.8	(4.9)	(9.4)	0.3	18.3	25.6		-114.1%	-110.8%	1605.6%	-108.1%	104.0%		1.31	74.0%		0.00%	
RHM-DE	RHEINMETALL AG	$66.87	$2,913	0.2	(6.3)	(0.2)	8.2	4.5	4.0	12.3		-38.1%	547.7%	14.0%	20.6%	-1.8%	0.51	54.2%		1.63%	
DE	DEERE & CO	$103.12	$32,676	0.0	0.9	23.7	22.3	30.2	35.2	9.5	-7.6%	-5.1%	-33.1%	-16.6%	-7.3%	-6.2%	0.73	364.4%	B+	2.40%	49.9%
TEX	TEREX CORP	$32.25	$3,415	0.8	4.2	40.0	43.4	63.6	74.5	8.8	-15.5%	44.6%	-52.3%	-42.1%	36.4%		1.70	88.0%	B-	0.92%	28.9%
ASTE	ASTEC INDUSTRIES INC	$67.90	$1,565	(0.0)	3.1	17.0	18.8	62.3	66.8	10.0	44.1%	-11.8%	-4.7%	67.6%	22.7%	0.0%	1.38	0.7%	B	0.60%	19.9%
Average			$13,383	0.4	(0.8)	14.2	19.8	34.7	38.9	9.3	-12.0%	-15.2%	256.4%	-10.7%	24.7%	-1.7%	1.15	88.2%		1.41%	37.4%
Median			$4,192	0.3	(0.5)	15.5	20.6	27.7	31.4	9.5	-0.9%	-8.4%	-6.2%	-4.2%	15.1%	-0.9%	1.12	51.1%		1.37%	30.3%
SPX	S&P 500 INDEX	$2,264		0.1	2.7	4.6	7.1	9.7	10.8			7.7%	1.2%	7.6%	12.4%						

		2015		P/E							2015	2015			EV/	P/CF	P/CF	Sales Growth			Book
Ticker	Website	ROE	P/B	2013	2014	2015	TTM	NTM	2016	2017E	NPM	P/S	OM	ROIC	EBIT	Current	5-yr	NTM	STM	Pst 5yr	Equity
OSK	http://www.oshkoshcorporation.com	11.0%	2.50	18.4	18.1	22.7	22.9	19.9	22.7	20.7	6.1%	1.39	6.2%	7.8%	12.0			5.5%	0.5%	-3.7%	$26.74
GD	http://www.generaldynamics.com	24.4%	4.72	24.9	22.4	19.3	18.7	17.7	17.9	17.4	8.8%	1.70	13.7%	20.5%	10.9	14.1		2.4%	2.8%		$37.16
S63-SG	http://www.stengg.com	27.1%	5.01	14.8	17.1	18.5	21.0		20.2	18.5	8.3%	1.54	9.3%	17.0%	18.0	13.9	14.0			1.1%	$0.44
064350-KR		-22.4%	1.11	9.2	-85.0	-5.0	-6.4	45.6	61.2	30.0	-9.2%	0.46	-5.5%	-11.2%	-16.3	-13.7		-0.2%		3.6%	$13.73
RHM-DE	http://www.rheinmetall.com	12.0%	1.90	63.7	102.9	15.9	14.5		13.9	11.5	3.3%	0.52	3.0%	7.3%	17.3	6.0	5.8			5.4%	$35.19
DE	http://www.deere.com	27.9%	4.98	11.3	11.9	17.9	21.4	23.2	21.4	23.1	7.1%	1.27	10.8%	5.0%	20.6	9.0		-12.9%	1.5%	-3.7%	$20.71
TEX	http://www.terex.com	7.4%	1.80	16.7	11.6	24.2	34.5	40.8	41.9	30.7	2.2%	0.52	4.4%	3.9%	8.9	14.5	7.7	-21.3%	3.0%	8.2%	$17.88
ASTE	http://www.astecindustries.com	5.1%	2.43	40.2	45.6	47.8	33.8	23.4	28.5	23.3	3.3%	1.59	7.1%	5.4%	18.7	17.9	11.7	16.6%	9.2%	5.0%	$27.94
Average		11.6%	3.06	24.9	18.1	20.2	20.0	28.4	28.5	21.9	3.7%	1.12	6.1%	7.0%	11.2	8.8	9.8	-1.6%	3.4%	2.3%	
Median		11.5%	2.46	17.6	17.6	18.9	21.2	23.3	22.1	21.9	4.7%	1.33	6.7%	6.4%	14.6	13.9	9.7	1.1%	2.8%	3.6%	
spx	S&P 500 INDEX			20.9	19.4	19.2			17.8	15.9											

Appendix 6: 3-stage DCF Model

3 Stage Discounted Cash Flow

	Year						
	1	2	3	4	5	6	7
	First Stage		**Second Stage**				
Cash flows	2017	2018	2019	2020	2021	2022	2023
Sales Growth	*5.1%*	*1.6%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
NOPAT / S	*4.0%*	*4.4%*	*4.4%*	*4.4%*	*4.4%*	*4.4%*	*4.4%*
S / NWC	*10.00*	*11.76*	*11.76*	*11.76*	*11.76*	*11.76*	*11.76*
S / NFA (EOY)	*3.21*	*2.95*	*2.95*	*2.95*	*2.95*	*2.95*	*2.95*
S / IC (EOY)	*2.43*	*2.36*	*2.36*	*2.36*	*2.36*	*2.36*	*2.36*
ROIC (EOY)	*9.8%*	*10.3%*	*10.3%*	*10.3%*	*10.3%*	*10.3%*	*10.3%*
ROIC (BOY)		*10.8%*	*10.8%*	*10.8%*	*10.8%*	*10.8%*	*10.8%*
Share Growth		*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Sales	$6,599	$6,707	$7,042	$7,394	$7,764	$8,152	$8,560
NOPAT	$265	$292	$307	$322	$338	$355	$373
Growth		*10.1%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
- Change in NWC	-88	-90	29	30	31	33	35
NWC EOY	*660*	*570*	*599*	*629*	*660*	*693*	*728*
Growth NWC		*-13.6%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
- Chg NFA	-40	218	114	119	125	132	138
NFA EOY	*2,056*	*2,274*	*2,387*	*2,507*	*2,632*	*2,764*	*2,902*
Growth NFA		*10.6%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
Total inv in op cap	-129	128	142	149	157	165	173
Total net op cap	2716	2844	2986	3135	3292	3456	3629
FCFF	$394	$164	$165	$173	$181	$190	$200
% of sales	*6.0%*	*2.4%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*	*2.3%*
Growth		*-58.3%*	*0.2%*	*5.0%*	*5.0%*	*5.0%*	*5.0%*
- Interest (1-tax rate)	39	37	38	38	39	40	40
Growth		*-4.9%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*	*1.5%*
FCFE w/o debt	$355	$127	$127	$134	$142	$151	$160
% of sales	*5.4%*	*1.9%*	*1.8%*	*1.8%*	*1.8%*	*1.9%*	*1.9%*
Growth		*-64.2%*	*-0.2%*	*6.0%*	*6.0%*	*6.0%*	*5.9%*
/ No Shares	70.7	70.7	70.7	70.7	70.7	70.7	70.7
FCFE	$5.01	$1.79	$1.79	$1.90	$2.01	$2.13	$2.26
Growth		*-64.2%*	*-0.2%*	*6.0%*	*6.0%*	*6.0%*	*5.9%*
* Discount factor	0.90	0.81	0.73	0.66	0.59	0.53	0.48
Discounted FCFE	$4.51	$1.45	$1.31	$1.25	$1.19	$1.13	$1.08
			Third Stage				
Terminal value P/E							
Net income	$228	$257	$269	$284	$299	$315	$333
% of sales	*3.5%*	*3.8%*	*3.8%*	*3.8%*	*3.9%*	*3.9%*	*3.9%*
EPS	$3.23	$3.63	$3.80	$4.01	$4.23	$4.46	$4.70
Growth		*12.6%*	*4.7%*	*5.5%*	*5.5%*	*5.5%*	*5.4%*
Terminal P/E							20.40
* Terminal EPS							$4.70
Terminal value							$95.95
* Discount factor							0.48
Discounted terminal value							$45.87

Summary

First stage	$5.97	Present value of first 2 year cash flow	
Second stage	$5.95	Present value of year 3-7 cash flow	
Third stage	$45.87	Present value of terminal value P/E	
Value (P/E)	**$57.79**	= value at beg of fiscal yr	2017

Appendix 7: SWOT Analysis

Strengths	Weaknesses
Superior products Brand recognition Market share	Global sales Low ROE Gross margin
Opportunities	**Threats**
International expansion Possible defense contracts Increase in defense spending	Defense contract uncertanties Cost of supplies Interest rate hikes

Appendix 8: Porter's 5 Forces

Threat of New Entrants - Low

There are barriers of entry into the defense industry. The industry has well established defense contractors, but they are not at risk of losing market share. Entrance into the trucks/construction/farm machinery industry is very difficult because of the superior technology of existing firms.

Threat of Substitutes - Medium

The buyers of access equipment products can substitute OSK products with an inferior product, but buyers do not usually compromise on cheaper products.

Supplier Power - High

The parts that OSK uses to produce its products are relatively expensive, and the suppliers to OSK have control over prices. OSK decreases supplier power by buying in bulk, and it is often its own supplier for some segments.

Buyer Power – High

The defense industry is controlled by the buyer. The U.S. government decides how much it pays for the products and the defense contractors are at the will of the government's control over the contracts. The trucks/construction/farm machinery industry has less buyer power than the defense industry as the buyers do not have control over contracts. Also, the industry is more cyclical and this gives more power to the seller.

Intensity of Competition – Very High

The defense industry is very competitive. Defense contractors are constantly vying for new defense contracts. Competitors will regularly sue for contracts.