Analyst: Todd Blatnik

March 7, 2018

Sporting Goods Retail

Dicks Sporting Goods

Recommendation	**BUY**
Target (today's value)	$45.00
Current Price	$32.47
52-week range	$23.88 - $52.31

Share Data	
Ticker:	DKS
Market Cap. (Billion):	$3.49
Inside Ownership	22.7%
Inst. Ownership	71.9%
Beta	0.95
Dividend Yield	2.77%
Payout Ratio	24.4%
Cons. Long-Term Growth Rate	6.6%

	'15	**'16**	**'17E**	**'18E**	**'19E**
Sales (billions)					
Year	$7.3	$7.9	$8.6	$9.2	$9.9
Gr %	-	9.0%	8.6%	7.4%	6.9%
Cons	-	-	-	$86.5	$88.0
EPS					
Year	$2.87	$2.59	$3.25	$3.02	$3.36
Gr %	-	-9.8%	25.8%	-7.1%	11.1%
Cons	-	-	$3.00	$2.78	$2.99

Ratio	**'15**	**'16**	**'17E**	**'18E**	**'19E**
ROE (%)	18.2%	15.5%	15.5%	13.4%	13.0%
Industry	20.7%	38.9%	34.8%	18.4%	17.4%
NPM (%)	4.5%	3.6%	3.6%	3.3%	3.4%
Industry	7.5%	4.7%	4.2%	4.9%	5.2%
A. T/O	2.09	2.03	2.03	1.90	1.87
ROA (%)	9.5%	7.4%	7.4%	6.2%	6.3%
Industry	12.3%	8.7%	7.4%	8.0%	8.6%
D/A	6.1%	10.9%	10.9%		

Valuation	**'16**	**'17E**	**'18E**	**'19E**
P/E	18.6	12.0	11.7	10.9
Industry	23.2	17.4	17.6	21.0
P/S	0.79	0.38	0.37	0.36
P/B	3.2	1.7	1.6	1.3
P/CF	9.0	4.5	4.4	5.2
EV/EBITDA	8.2	11.2	11.2	8.3

Performance	**Stock**	**Industry**
1 Month	5.9%	0.2%
3 Month	7.8%	5.7%
YTD	13.0%	4.1%
52-week	-38.3%	7.9%
3-year	-42.5%	30.0%

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Summary: I recommend a buy rating with a target price of $45. Although DKS has an opportunity to improve customer experience and online sales, shrinking margins and Amazon's threat are significant headwinds. I am still optimistic for the future, but I realize the threat the retail market, as a whole, is facing.

Key Drivers:

- New store sales: Dicks Sporting Goods has an added average of $8.6M in revenue per new store location, and is one of the only sporting goods stores still opening new store locations. The firm had 767 store locations at the end of 2016 and is growing at an average rate of 7% since 2008.
- Same store sales: same store sales growth has been relatively steady around 2% per year and 3.5% for calendar year 2016. Same store sales growth of Dicks Sporting Goods is a percent lower than its top four competitors (using a simple 10-year average).
- Online and Omni-channel sales growth: DKS' online sales growth is growing at an average rate of 39%. Online sales contributed to 11.9% of sales in 2016. DKS is working to the online experience to add simplify and customer loyalty.
- Macroeconomic trends: as the macro-economy improves, so does retail sales growth. I believe sporting goods retail will outperform U.S. retail sales (excluding motor vehicle and parts).

Valuation: Using a relative valuation approach, Dicks Sporting Goods appears to be undervalued in comparison to its peers in the sporting goods retail industry. Due to greater precision of inputs, DCF analysis provides the best way to value the stock. A combination of the approaches suggests that Dicks Sporting Goods is undervalued as the stock's value is about $45 and the shares trade at $33.

Risks: Threats to the business include exposure to interest rate risk, competitive retail environments, consumer confidence and other macroeconomic factors, inflation risk, and damage to its supply chain.

Company Overview

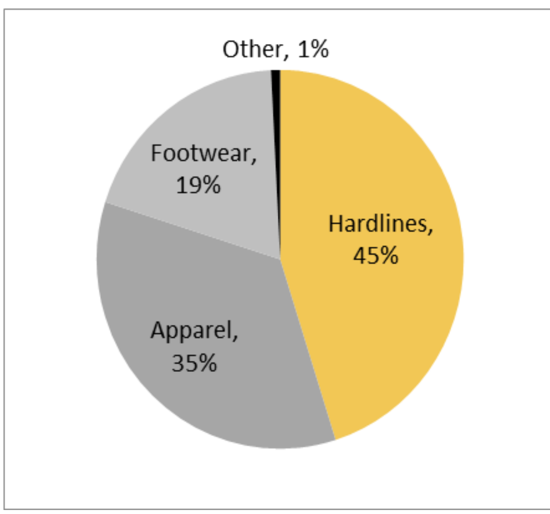
Dicks Sporting Goods (DKS) operates as a retail sporting goods company with stores located only in the United States. DKS engages in the retail of extensive assortments of sporting goods equipment, apparel, footwear, and accessories for men, women, and children. The company also owns and operates Golf Galaxy, Field & Stream, and other specialty concepts stores. Dicks Sporting Goods offers a robust eCommerce platform that is steadily growing revenues. The company was founded by Richard T. Stack in 1948 and is headquartered in Coraopolis, PA.

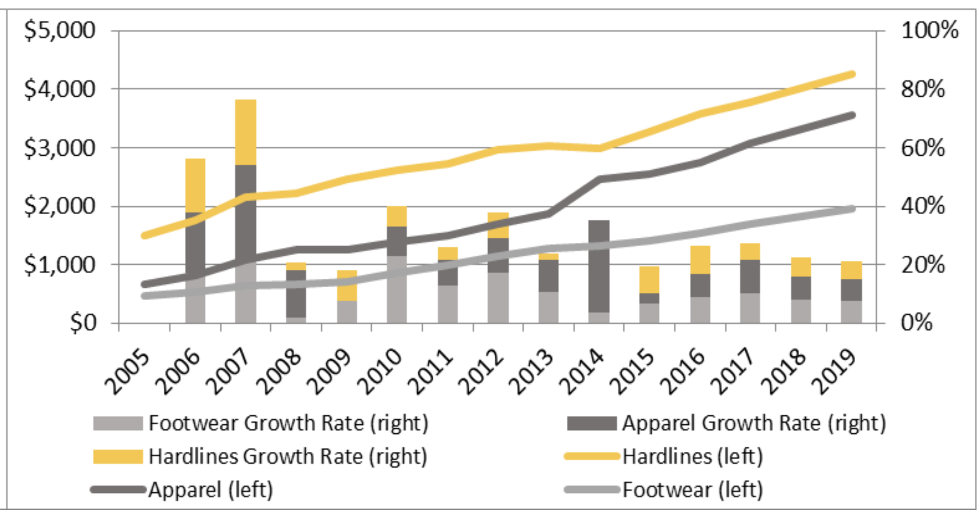
Dicks Sporting Goods generates revenue from three main segments of hardline, apparel, and footwear through a blend of store staff, in-store services, shop-in-shops, online, and retail stores. In 2016, the company purchased merchandise from approximately 1,500 different vendors in which Nike and Under Armour accounted for 20% and 12% of merchandise, respectively.

- Hardline (45% of sales): Dicks Sporting Goods has a vast variety of hardline products that extend from equipment in golf, hockey, baseball, basketball, football, soccer, running, cycling, swimming, weightlifting, cross-training, tennis, hunting, fishing, and winter sports, to name a few. Retail stores have in-store displays and customized centers for trying new equipment in familiar environments. For example, some locations have an indoor track for the Footwear Center, bait and tackle shop, Sportsman's Lodge, and a Golf Pro Shop.
- Apparel (35% of sales): The firm's apparel segment consists of custom-made athletic apparel, sportswear, and outerwear for a variety of activities. The color, design, and style of apparel are continuously updated to the latest fashions trends. The majority of basic sportswear apparel is T-shirts, shorts, sweats, and warm-ups.
- Footwear (19% of sales): The company's Footwear Center features hardwood floors and a track for testing athletic shoes in select locations. The company offers a large selection of athletic shoes for walking, running, tennis, fitness, cross training, basketball, baseball, football, soccer, and hiking.

Dicks Sporting Goods' sales in all three key segments have strong year-over-year growth of 9% in 2016 shown in Figure 2. Hardline sales represent 45% of revenues, apparel represents 35% of revenues, and footwear represents 19% of revenues in 2016.

Figures 1 and 2: Revenue Sources for DKS, year-end 2016 (left) and Revenue history since 2005 (right)





Source: Company Reports

Source: Company Reports

Business/Industry Drivers

Though several factors may contribute to the growth of Dicks Sporting Goods, the following are the most important business drivers:

1) New Store Sales
2) Same Store Sales
3) eCommerce and Omni-channel Sales Growth
4) Macroeconomic Trends

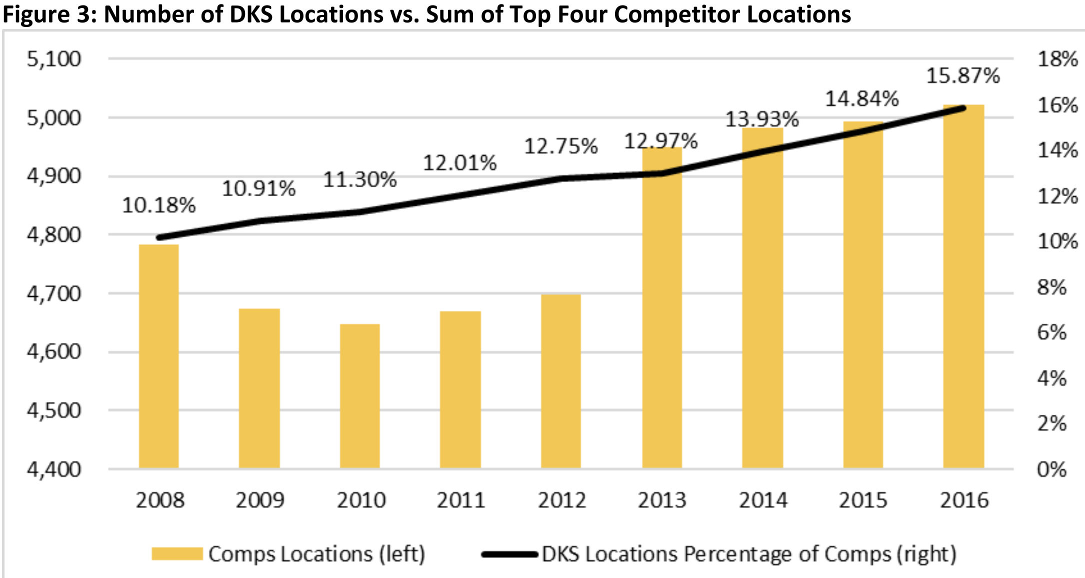
New Store Sales

The number of DKS locations continues to expand bringing an average of $8.6 Million per store.

542 new stores opened since 2006. An average of 49 new store locations opened per year since 2006. On average, each new store contributes an additional $8.6 million. This totals an average $421 million in new revenue per year. As the average number of new stores is consistent year-over-year, I project an additional 40 stores in 2017 and another 45 stores in 2018. I believe there will be more new stores locations in 2018 than 2017 because of DKS' growing lease negotiating power. As competing retail companies begin to consolidate stores, retail space is becoming more abundant. Dicks Sporting Goods' power to negotiate new and current lease prices is rising.

Figure 3 shows the growth of Dicks Sporting Goods' locations from 2006 to 2016 compared to its top four competitors: Foot Locker, Hibbett Sports, Big 5 Sporting Goods, and Sportsman's Warehouse Holdings, Inc. One can see that the industry's number of stores is cyclical while the number of DKS locations is growing each year. The top four competitors are not expanding to new store locations as quickly as DKS.

Figure 3: Number of DKS Locations vs. Sum of Top Four Competitor Locations



Source: Bloomberg & Company Reports

Same Store Sales

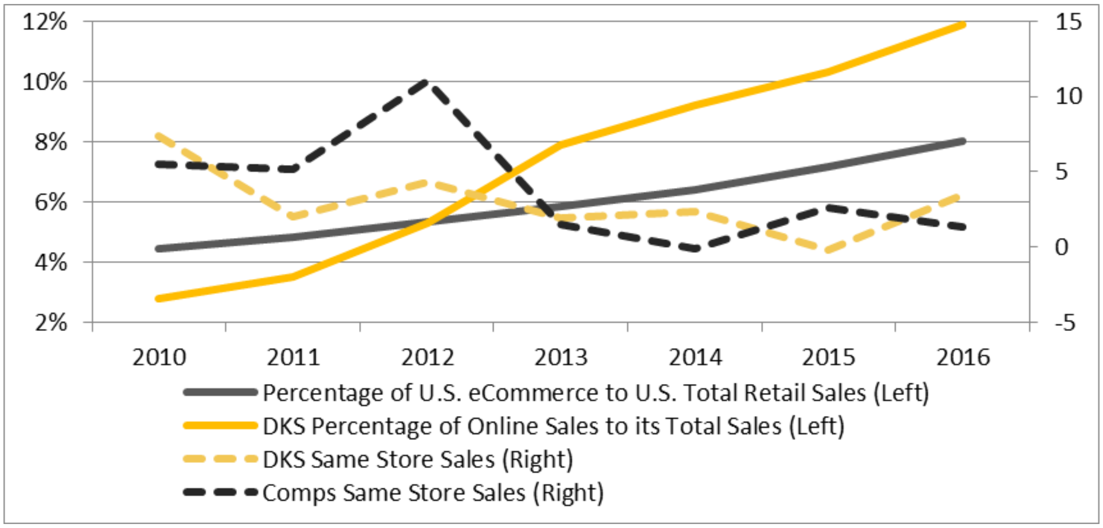
Dicks Sporting Goods' same store sales are growing; however, at a lower rate than the past and about three quarters of a percent less than the 7-year average same store sales of its top four competitors (Foot Locker, Hibbett Sports, Big 5 Sporting Goods, and Sportsman's Warehouse Holdings, Inc.). Dicks Sporting Goods' same store sales 7-year average growth are 3.04% while the same store sales 7-year average growth of its four competitors is 3.86%.

DKS was a large beneficiary of Sports Authority customers after Sports Authority went out of business in March of 2016. Dicks Sporting Goods' same store sales increased from -0.2% in 2015 to 3.50% in 2016. For 2017, I am expecting another 1% increase in same store sales attributable to gaining additional business from Sports Authority customers.

Same store sales are growing at decreasing rates mostly driven by online sales growth, except for DKS

The recent slowing in same store sales growth could be attributable to the eCommerce sales growth. As displayed in Figure 4 below, Dicks Sporting Goods' percentage of online sales to total DKS revenue is growing faster than the percentage of U.S. online retail to total U.S. retail revenue. As online retail sales gain overall revenue share, same store sales growth decreases overall.

Figures 4: Same Store Sales Growth vs. Online Sales



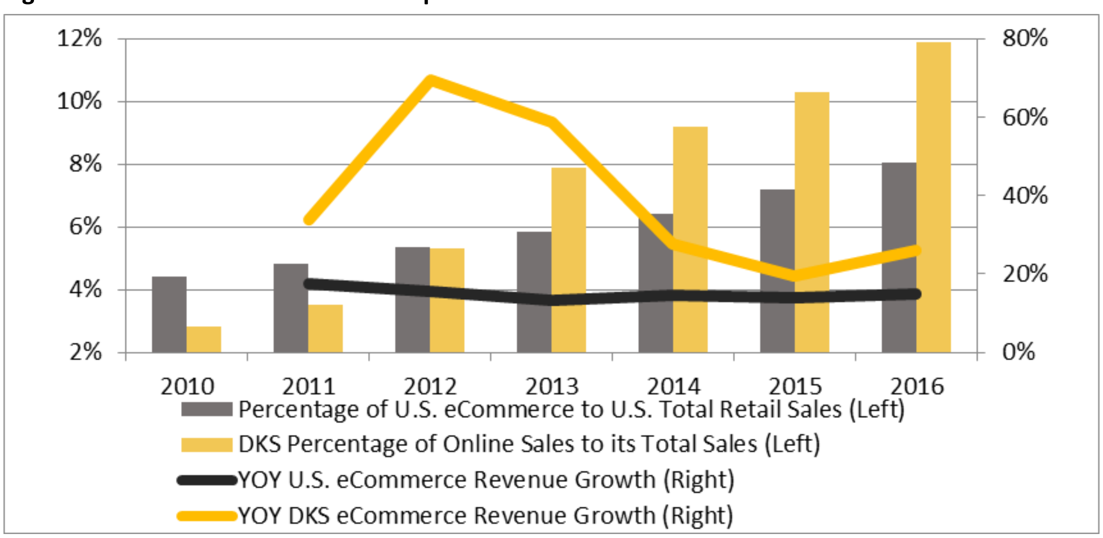
Source: Census Bureau

eCommerce and Omni-Channel Sales Growth

DKS online sales are growing faster than its competitors' online sales

Dicks Sporting Goods online sales are growing at a faster rate than total U.S. online sales. Figure 5 shows the percentage of DKS online sales growing nearly twice as fast as the percentage of U.S. online sales, and I believe DKS' growth will continue as the firm improves the online experience.

Figure 5: Online Sales Growth vs. Competitor



Source: Company Reports, Census Bureau

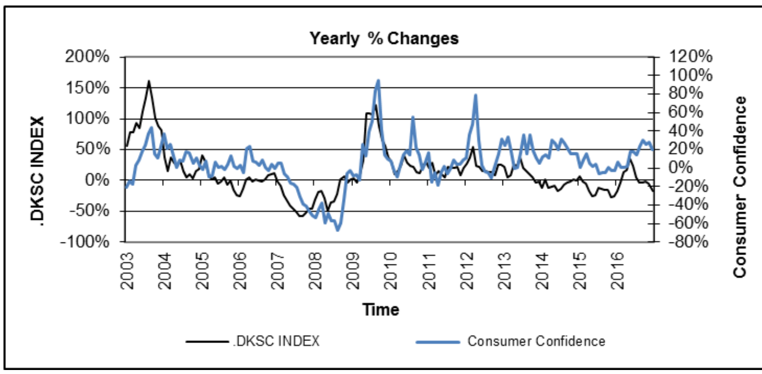
Online growth will help DKS gain market share. Online experience and shopping convenience are important to the consumer, and the CEO Edward Stack is committed to making immediate improvements. As the customer online experience improves, I believe the company will be able to keep larger online retailers, like Amazon, out of the sporting goods retail marketplace.

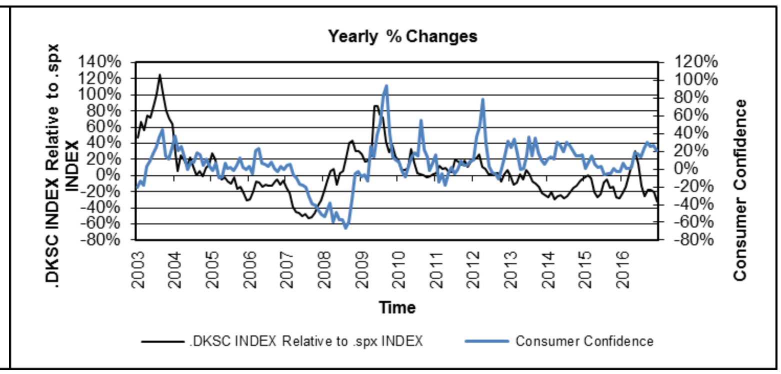
Macroeconomic Factors

As consumer confidence increases, so does DKS' comp index

The price index of Dicks Sporting Goods' comp group (Foot Locker, Hibbett Sports, Big 5 Sporting Goods, and Sportsman's Warehouse Holdings, Inc.) is positively correlated with the consumer confidence index (Figure 6). Some sporting goods items, such as clothing, may be a necessity; however, most items fulfill wants and hobbies. As consumers feel more confident about the economy and their economic status, they are more inclined to spend money on accessory goods and services that fulfill consumer hobbies and wants. Therefore, there is naturally a strong correlation between the price movement of the sporting goods retail comps and consumer confidence.

Figures 6 and 7: Consumer Confidence compared to DKS Comps (left) and consumer confidence compared to DKS comps relative to the S&P 500 index (right)





Source: Bloomberg Terminal

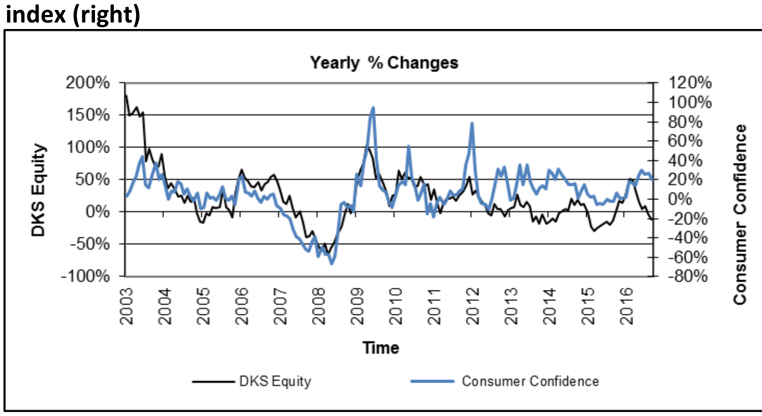
Source: Bloomberg Terminal

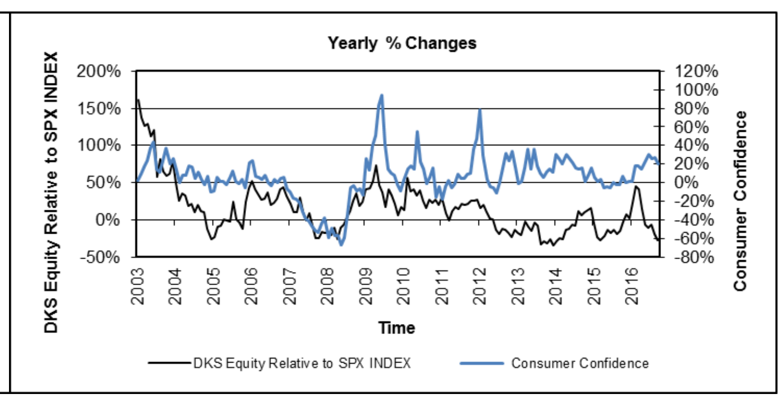
DKS outperforms its competitor index when displayed in relative terms to the S&P 500

The comps decline as the consumer confidence sunk during the recessionary period of 2007 and 2008. When the consumer confidence rose again in 2009 and 2010, so did the price of the comps and DKS.

Figure 8 shows the correlation (0.55) between DKS and consumer confidence. The correlation between the comps and the consumer confidence is 0.53. Figures 6 and 9 displays the comps and DKS in relation to the S&P 500 index, and both outperform as the consumer confidence rises.

Figures 8 and 9: Consumer Confidence compared to DKS (left) and consumer confidence compared to DKS relative to the S&P 500 index (right)





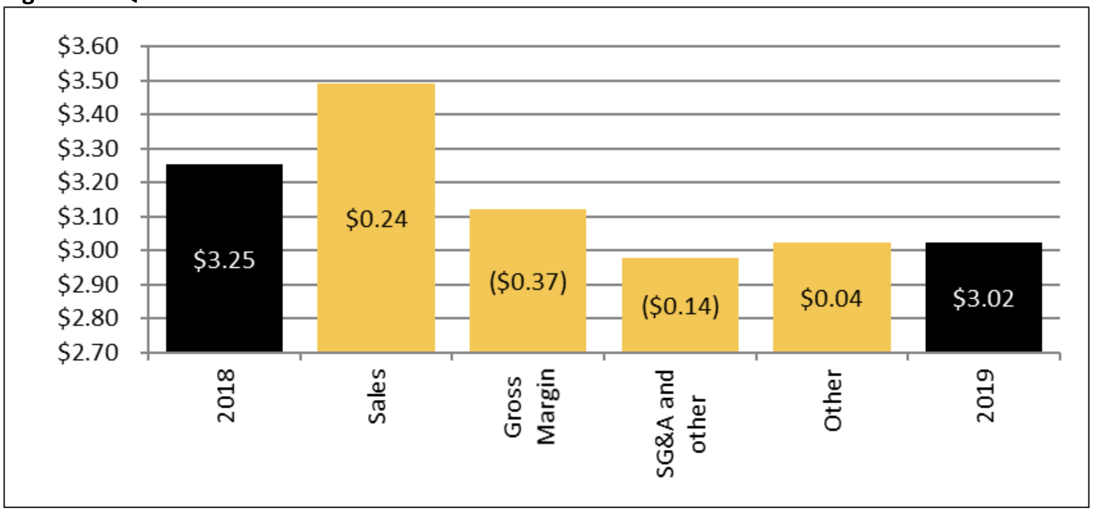
Source: Bloomberg Terminal

Source: Bloomberg Terminal

Financial Analysis

I anticipate EPS to decrease to $3.02 from $3.25 in FY 2018. Sales growth is expected to increase EPS of $0.24 from store location growth, online sales growth, and consolidation of the industry. However, I expect gross margin to lower EPS by $0.37. The decrease in gross margin will be driven by increased pressure on retail competition to lower prices. I anticipate SG&A/sales to rise and cause EPS to fall by $0.14 due to additional payroll, supply chain, and logistical expenses. Lastly, I forecast that share buybacks will increase EPS by $0.04 to bring total EPS to $3.02 for the fiscal year of 2018.

Figure 10: Quantification of FY 2018 EPS drivers



Source: Company Reports, IMCP

<u>Sales – Estimates vs. Consensus</u>

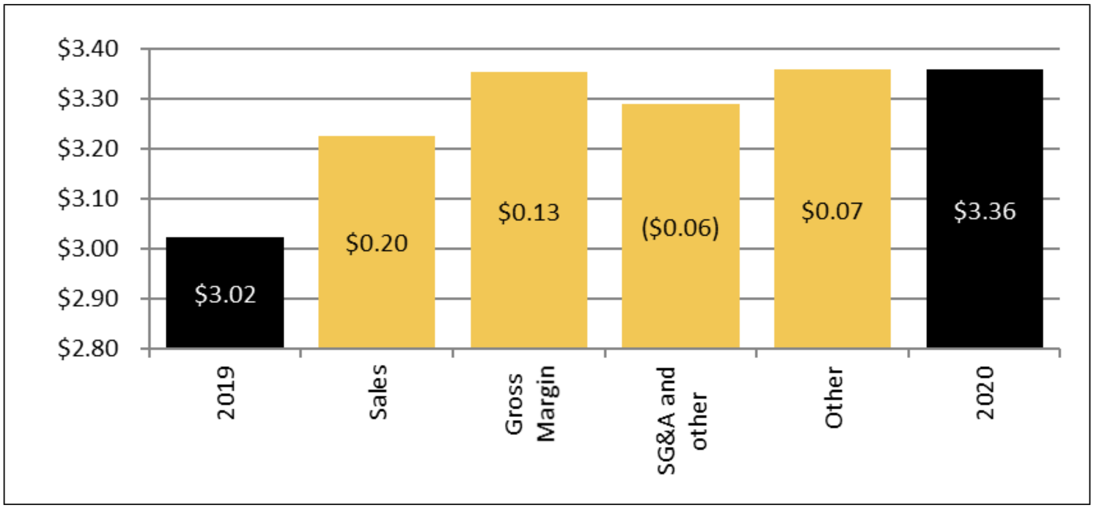
2018: $9,243 vs. $8,762

<u>EPS – Estimates vs. Consensus</u>

2018: $3.02 vs. $2.50

I anticipate 2019 EPS to increase to $3.36 from $3.02. Sales growth will drive an increase in EPS by $0.20 as I anticipate further location expansion and improvement in online sales. I expect gross margin to improve slightly as online sales improve, which raises EPS by $0.13. I believe SG&A/sales margins will bring EPS down $0.06 due to further expenses in supply chain and logistics. Lastly, I expect more share buybacks to increase EPS by $0.07 bringing the total EPS to $3.36 for FY 2019.

Figure 11: Quantification of FY 2019 EPS drivers



Source: Company Reports, IMCP

<u>Sales – Estimates vs. Consensus</u>
2019: $9,881 vs. $8,945

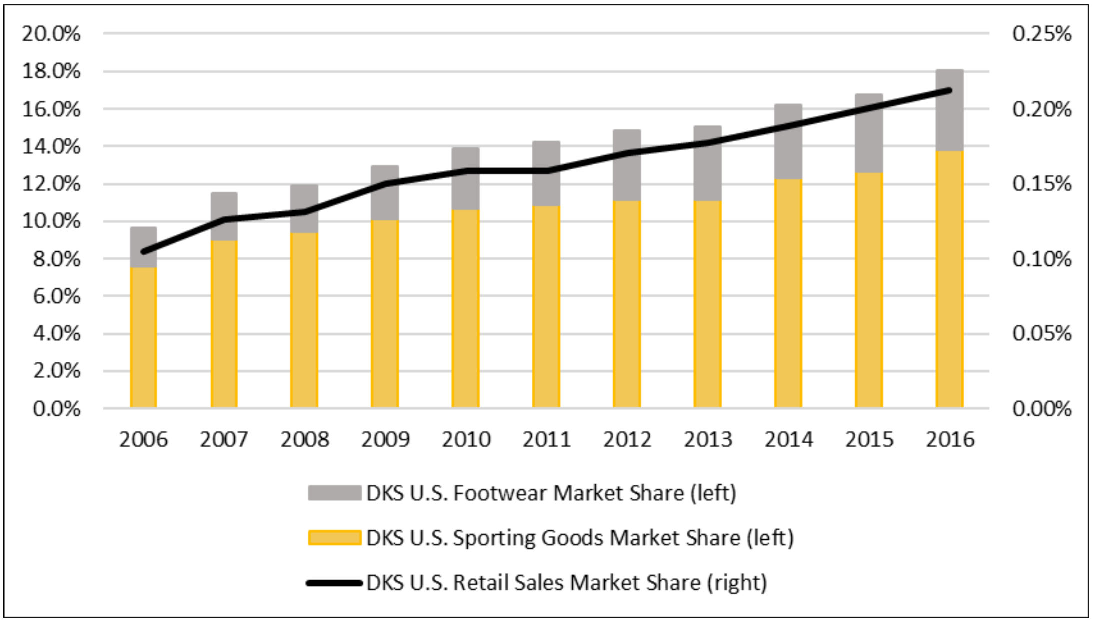
<u>EPS – Estimates vs. Consensus</u>
2019: $3.36 vs. $2.60

My estimates are more optimistic than the consensus as I believe that there will be greater pressure for consolidation in this retail industry and DKS will be the beneficiary of those customers. DKS is an established company that holds a strong brand. I believe that the company's continued location expansion and online sales growth will drive most of the success for sales, EPS, and market share growth.

<u>Revenues</u>

Dicks Sporting Good's revenue is growing at a slowing rate. The company is maturing; however, it has a lot of room for growth. DKS revenue at the end of 2016 was 17% of the United States retail sporting goods market. The company continues to take over market share of the consolidating industry. Furthermore, the market share of U.S. sporting goods retail sales to total U.S. retail sales are growing at an average rate of 0.5% since 2001 and 1.21% since 2006. The average sales growth from 2002 to 2017 is 15% and 10% from 2010 to 2017, and I predict an average sales growth of 7% in 2018 and 2019.

Figure 12: DKS' Market Share of U.S. Retail Sporting Goods

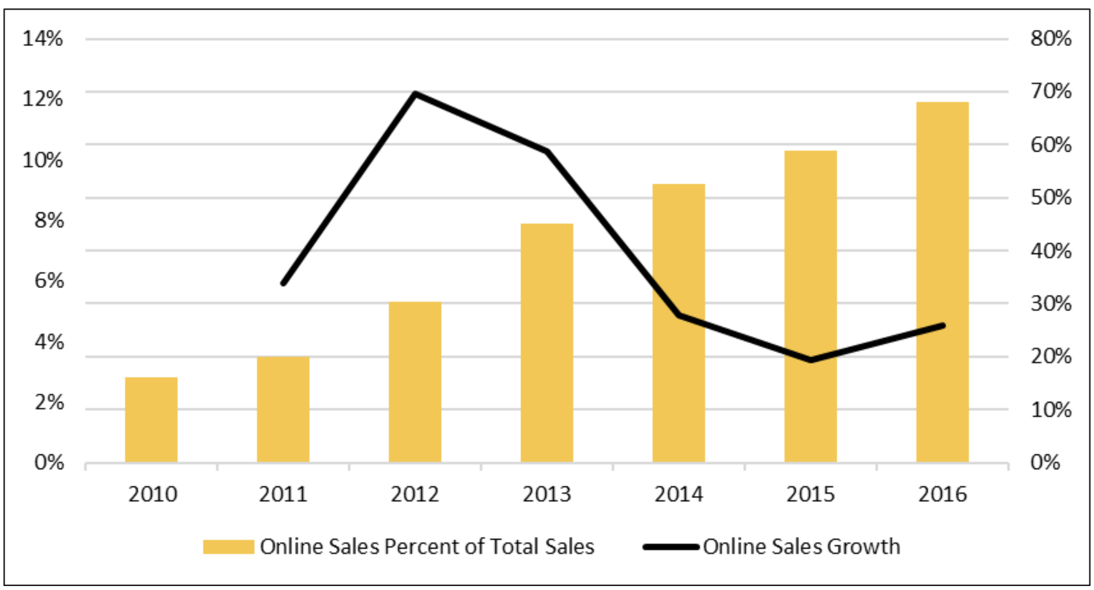


Source: Company Reports, U.S. Census Bureau

DKS is the giant in sporting goods retail and will continue to grow market share

Dicks Sporting Goods online sales have grown strongly but will likely face even stronger competition from Amazon's online sales and other direct-to-consumer brands like Nike and Under Armor, which represents 20% and 12% of DKS' merchandise, respectively. Figure 13 shows DKS online sales growth to total sales.

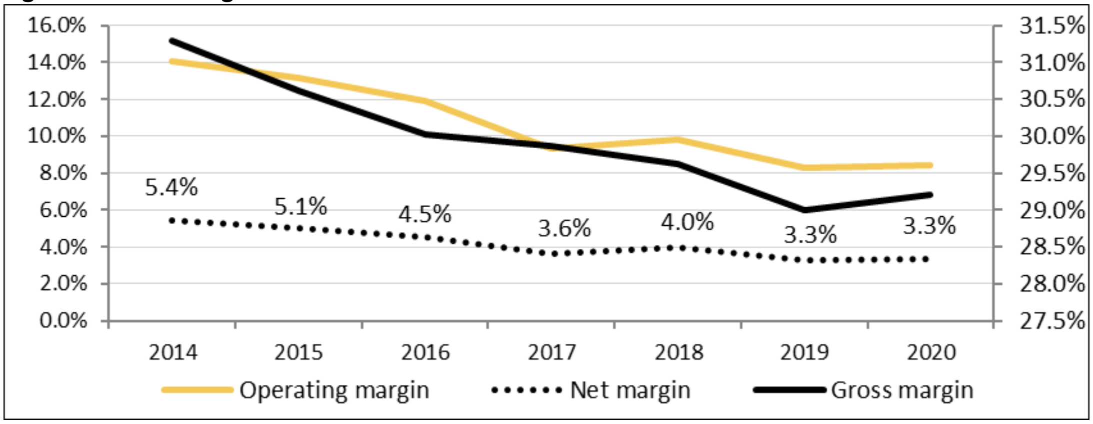
Figure 13: DKS Online Sales Growth



Source: Company Reports

Dicks Sporting Goods potential barrier to entrance from Amazon is its physical presence. Having physical presence in the retail sporting goods space is an advantage because customers still prefer to touch and feel equipment and merchandise before they purchase. However, customers could use DKS' stores to try out the equipment before ordering through Amazon at a lower cost. Still, Amazon is a real threat, so DKS will remain pressured to keep prices low, which could hurt profit margins to stay competitive.

Figure 14: DKS' Margin Decline



Source: Company Reports, IMCP

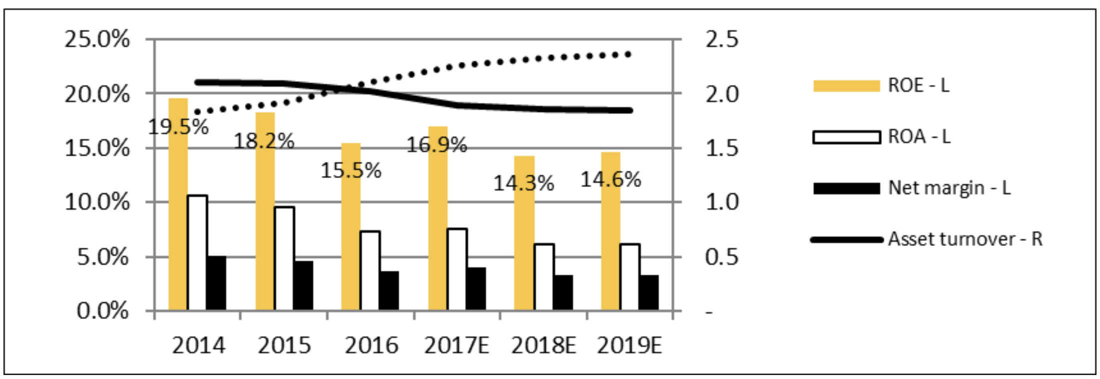
Return on Equity

Almost all long term debt is paid off and 99.1% debt is revolving credit

ROE has steadily declined even though leverage is rising. The company is relying heavily on revolving credit to fund operational expansions and location growth. Dicks Sporting Goods has been growing stores at a rate of about 38 stores per year since 2007, and I anticipate this growth rate will remain steady into 2018 and 2019. The company will continue to participate in acquisitions with strong potential to increase purchasing activity due to the industry's consolidation. The main negative driver for ROE is operating margins, which have been under pressure for a while. I expect them to stabilize in 2018, which will also stabilize ROE.

Figure 15 and Figure 16: ROE breakdown, 2014 – 2019E

5-stage ROE	2014	2015	2016	2017E	2018E	2019E
EBIT / sales	8.1%	7.4%	5.7%	5.9%	5.0%	5.1%
Sales / avg assets	2.11	2.09	2.03	1.90	1.86	1.85
EBT / EBIT	99.4%	99.3%	98.7%	98.7%	99.4%	99.4%
Net income /EBT	62.5%	62.2%	64.7%	68.3%	66.2%	65.9%
ROA	10.7%	9.5%	7.4%	7.5%	6.1%	6.2%
Avg assets / avg equity	1.83	1.92	2.10	2.26	2.33	2.37
ROE	19.5%	18.2%	15.5%	16.9%	14.3%	14.6%



Source: Company Reports, IMCP

Free Cash Flow

Figure 16: Free cash flows 2013 - 2019E

Free Cash Flow - Without Cash and Debt	2013	2014	2015	2016	2017E	2018E	2019E
NOPAT	$327	$341	$333	$277	$338	$298	$325
Growth		*4.2%*	*-2.3%*	*-17.0%*	*22.1%*	*-11.7%*	*9.0%*
NWC*	437	459	503	434	572	693	840
Net fixed assets	1,451	1,593	1,747	2,260	2,487	2,719	2,950
Total net operating capital*	$1,888	$2,052	$2,249	$2,694	$3,059	$3,412	$3,789
Growth		*8.7%*	*9.6%*	*19.8%*	*13.5%*	*11.5%*	*11.1%*
- Change in NWC*		22	44	(69)	138	121	147
- Change in NFA		141	154	514	227	231	231
FCFF*		$177	$136	($168)	(27)	($54)	($53)
Growth			*-23.5%*	*-224.2%*	*-83.9%*	*101.0%*	*-3.2%*
- After-tax interest expense	2	2	2	4	5	2	2
FCFE**		$175	$133	($172)	(32)	($56)	($55)
Growth			*-24.1%*	*-229.3%*	*-81.6%*	*77.8%*	*-2.6%*

Source: Company Reports, IMCP

FCF will remain low-to-negative as I predict continued expansion and acquisitions

DKS' free cash flow has been rapidly falling and is currently negative. I believe that the company's free cash flow will remain low-to-negative as the company will continue to make acquisitions. The large decrease in free cash flow to equity in 2016 was due to $118 million in acquisitions. DKS has repurchased over $1 billion in common stock over the past 5 years, and I anticipate they will continue to repurchase common stock as the stock price is at a 7-year all-time-low.

I anticipate that FCFF and FCFE will remain low-to-negative over the next couple of years. I believe that NOPAT, net fixed assets, and net working capital will continue to improve, which will hold the FCFE and FCFF steady. Net fixed assets is expected to increase by 13.5% in 2017, 11.5% in 2018, and 11.1% in 2019.

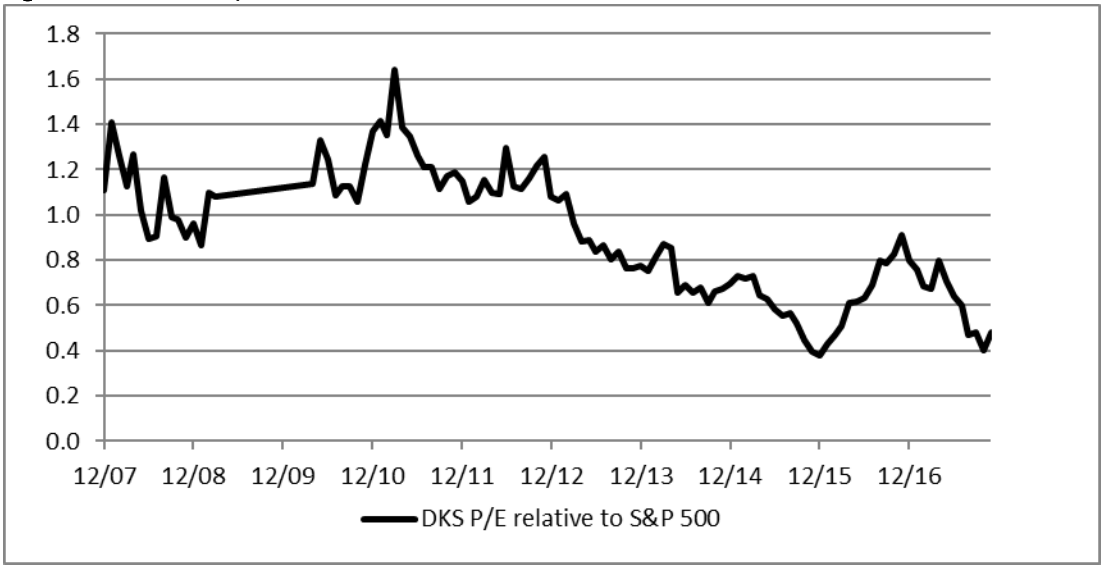
Valuation

Dicks Sporting Goods was valued using multiples and a 3-stage discounting cash flow model. Based on earnings multiples, the stock is undervalued relative to other firms and is currently trading at approximately $32. Relative valuation shows Dicks Sporting Goods to be undervalued compared to its peers. Price to book valuation yielded a target of $49.64 while a price to sales valuation yielded a price much lower at $44.44. A detailed DCF analysis values DKS slightly lower, at $42.79; I give this value a bit more weight because it incorporates assumptions that reflect DKS' ongoing business changes. Finally, a probability-weighted scenario analysis yields a price of $45.62. As a result of these valuations, I value the stock at $45.

Trading History

DKS is currently trading near its all-time low relative to the S&P 500. This is most likely the result of recent earnings growth depression and the current competitiveness of the retail industry. DKS' current NTM P/E is at 12.6, while the five-year average P/E is 18.4. The recent drop in P/E is mostly due to a decline in sales growth and the loss of sales to Amazon that has been hurting the entire retail industry.

Figure 17: DKS LTM P/E relative to S&P 500



Source: FactSet

Assuming the relative P/E improves as the company recovers, the NTM P/E could rise to 13.5.

- Price = P/E x EPS = 13.5 x $3.36 = $45.36

Using a 13.5 NTM P/E on 2019 EPS yields a price of $45.36. Given DKS potential for EPS to rise, this seems to be a fair valuation.

Relative Valuation

Dicks Sporting Goods is currently trading at a P/E lower than most of its peers with a P/E TTM of 12.3 compared to the peer average of 18.3. Investors are only willing to pay at a discount for DKS because the company's margins have been decreasing over the recent years, as has the overall retail industry. DKS's P/B and P/S ratios are also significantly lower than those of its peer's – both are roughly half the average for the group. This is a reflection of DKS' relatively poor ROE and net margin compared to its competitors.

Figure 18: DKS comparable companies

		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	2015	2016	2017	2018	Pst 5yr	Beta	Equity	Rating	Yield	Payout
DKS	DICKS SPORTING GOODS INC	$33.33	$3,580	2.3	10.9	33.5	(8.2)	(37.9)	16.0	6.6	-3.0%	-0.7%	-9.8%	12.0%	0.0%	4.1%	0.04	27.6%	B+	2.37%	24.3%
FL	FOOT LOCKER INC	$47.45	$5,751	2.5	6.5	51.0	(1.6)	(32.6)	1.2	-0.2	6.6%	7.8%	27.4%	-9.2%	0.0%	22.4%	0.34	4.7%	A-	2.57%	30.4%
NKE	NIKE INC	$64.67	$105,210	0.6	4.0	27.2	11.1	23.4	3.4	9.5	5.4%	16.3%	15.8%	75.8%	0.0%	15.8%	0.52	29.5%	A+	1.18%	32.0%
BGFV	BIG 5 SPORTING GOODS CORP	$6.08	$130	0.4	(17.9)	(15.6)	(47.2)	(62.4)	(20.1)		-67.5%	2.9%	11.4%	5.1%	3.7%	7.6%	-1.10	24.3%	B	7.89%	60.0%
UAA	UNDER ARMOUR INC	$15.12	$6,631	(1.2)	11.3	(8.6)	(24.2)	(50.2)	4.8	7.8	-50.0%	-44.9%	-15.9%	80.7%	3.7%	-0.9%	0.58	0.8%	B+	0.00%	
ADS-DE	ADIDAS AG	$204.73	$41,527	1.3	(3.2)	(13.1)	(5.6)	15.4	0.8	21.6	27.0%	40.4%	53.9%	-83.9%	3.7%	9.7%	-0.78	309.0%		0.00%	
HIBB	HIBBETT SPORTS INC	$24.40	$466	(1.4)	18.4	86.3	26.4	(27.7)	19.6	-8.7	-8.5%	1.7%	-6.8%	1.8%	-0.4%	4.7%	0.58	0.8%	B+	0.00%	
SPWH	SPORTSMANS WAREHOUSE HLDGS	$5.36	$228	(0.9)	(1.5)	24.7	8.1	(37.7)	(18.9)	10.0	14.5%	94.1%	6.1%	7.1%	20.0%		-0.78	309.0%		0.00%	
ELY	CALLAWAY GOLF CO	$14.29	$1,351	0.8	1.5	2.1	13.2	27.8	2.6	15.0	-69.1%	-14.3%	1022.2%	-5.9%	10.5%		1.14	0.0%	B-	0.29%	2.1%
Average			$18,319	0.5	3.3	20.8	(3.1)	(20.2)	1.0	7.7	-16.1%	11.5%	122.7%	9.3%	4.6%	9.1%	0.06	78.4%		1.59%	29.8%
Median			$3,580	0.6	4.0	24.7	(1.6)	(32.6)	2.6	8.7	-3.0%	2.9%	11.4%	5.1%	3.7%	7.6%	0.34	24.3%		0.29%	30.4%
SPX	S&P 500 INDEX	$2,786		0.7	4.6	9.2	14.0	22.7	4.2			-0.1%	0.5%	10.3%	11.7%						

		2016		P/E							2016	2016			EV/	P/CF	P/CF	Sales Growth			Book
Ticker	Website	ROE	P/B	2014	2015	2016	TTM	NTM	2017	2018	NPM	P/S	OM	ROIC	EBIT	Current	5-yr	NTM	STM	Pst 5yr	Equity
DKS	http://www.dickssportinggoods.com	14.4%	1.86	17.2	12.3	20.5	12.3	12.6	11.5	11.5	3.5%	0.45	5.6%	15.4%	11.2			5.1%	0.7%	8.7%	$17.95
FL	http://www.footlocker-inc.com	22.9%	2.19	15.6	16.7	14.3	12.0	11.2	10.5	10.5	7.7%	0.74	10.9%	24.1%	8.2	9.3	11.6	1.5%	2.1%	6.7%	$21.67
NKE	http://www.nike.com	35.4%	8.93	25.3	28.3	19.9	28.0	26.6	14.4	14.4	12.2%	3.07	12.2%	28.1%	20.2	24.8		6.5%	7.7%	7.3%	$7.24
BGFV	http://www.big5sportinggoods.com	8.2%	0.64	21.5	14.3	22.2	6.1	18.7	7.4	7.1	1.6%	0.13	3.5%	7.1%	12.5	3.1	8.2	-2.5%	5.3%	2.5%	$9.48
UAA	http://www.underarmour.com	9.5%	3.18	35.8	77.2	64.0	47.2	94.5	18.4	17.8	4.1%	1.37	6.5%	7.7%	31.1	15.5	35.6	2.8%	-0.4%	26.8%	$4.76
ADS-DE	http://www.adidas-group.com	13.3%	5.35	29.7	29.6	31.2	27.9	21.9	249.7	240.9	5.3%	2.15	8.6%	13.9%	25.6	18.0	16.9	6.5%		7.6%	$38.30
HIBB	http://www.hibbett.com	16.9%	1.50	16.7	10.3	13.6	13.9	15.2	8.7	8.7	5.4%	0.48	6.3%	18.8%	7.2	7.8	13.1	2.8%	-0.4%	5.8%	$16.26
SPWH	http://www.sportsmanswarehouse.com	69.4%	5.32	21.5	19.5	13.4	10.1	8.8	7.1	6.0	3.8%	0.29	6.5%	19.2%	8.7	4.9		6.5%		15.7%	$1.01
ELY	http://www.callawaygolf.com	28.8%	2.04	36.7	52.3	5.4	7.5	24.4	7.5	6.8	21.9%	1.55	9.0%	37.5%	20.3	13.1	93.9	7.9%		-0.3%	$7.01
Average		24.3%	3.44	24.4	28.9	22.7	18.3	26.0	37.3	36.0	7.3%	1.14	7.7%	19.1%	16.1	12.0	29.9	4.1%	2.5%	9.0%	
Median		16.9%	2.19	21.5	19.5	19.9	12.3	18.7	10.5	10.5	5.3%	0.74	6.5%	18.8%	12.5	11.2	15.0	5.1%	1.4%	7.3%	
spx	S&P 500 INDEX			17.3	17.2	18.8			21.2	19.0											

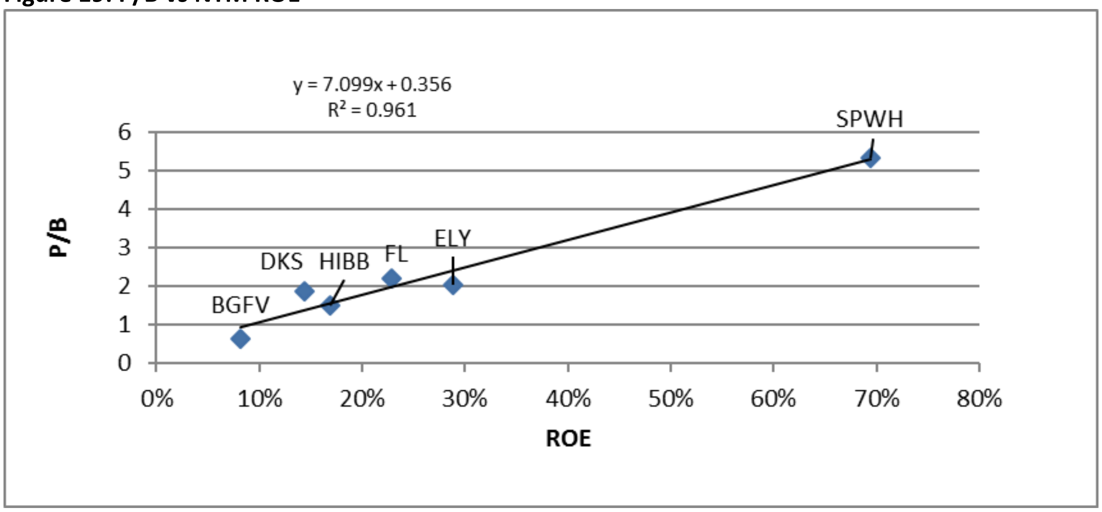
Source: FactSet

A more thorough analysis of P/B and ROE is shown in figure 19. The calculated R-squared of the regression indicates that over 96% of a sampled firm's P/B is explained by its sales growth. Note that Nike, Under Armour, and Adidas were excluded as they were outliers. DKS has the one of the lower P/Bs and ROEs of this grouping, and according to this measure, DKS is slightly undervalued.

- Estimated P/B = Estimated 2018 ROE (14.3%) * 7.099 + .356 = 1.37
- Target Price = Estimated P/B (1.37) x 2018E BVPS ($21.64) = $29.67

Discounting back to the present at a 9.62% cost of equity leads to a target price of $27.07 using this metric. Given DKS' potential for earnings growth and continued profitability, this seems to be an unusually low valuation.

Figure 19: P/B vs NTM ROE



Source: FactSet & IMCP

DKS has one of the lowest ROEs of its competitors.

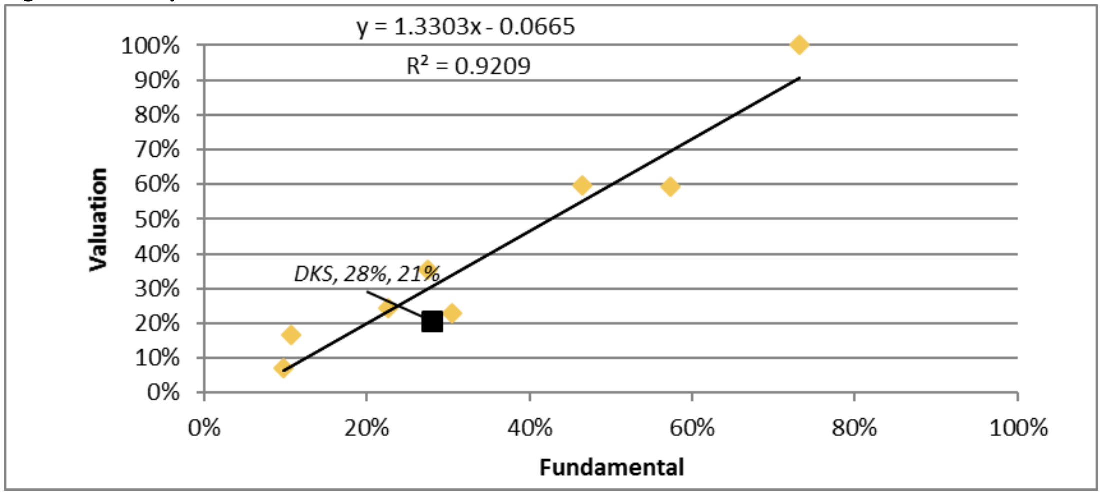
For a final comparison, I created a composite ranking of several valuation and fundamental metrics. Since the variables have different scales, each variable was converted to a percentile of the maximum before calculating the composite score. A weight of 5% for NTM earnings growth, 5% 2018 earnings growth, 25% next twelve months' sales growth, 40% second twelve months' sales growth, and 25% past five years' sales growth to 100% price to book. DKS is below the line, so it is inexpensive based on its fundamentals.

Figure 20: Composite valuation, % of range

		Fundamentals					Valuation			
	Weight	5.0%	5.0%	25.0%	40.0%	25.0%	100.0%			
		Earnings Growth		Sales Growth						
Ticker	Name	NTM	2018	NTM	STM	Pst 5yr	P/B	Yield	Fund	Value
DKS	DICKS SPORTING GOODS INC	-11%	15%	64%	9%	33%	21%	12%	28%	21%
FL	FOOT LOCKER INC	24%	-11%	19%	27%	25%	25%	11%	23%	25%
NKE	NIKE INC	20%	94%	83%	100%	27%	100%	24%	73%	100%
BGFV	BIG 5 SPORTING GOODS CORP	-250%	6%	-32%	69%	9%	7%	4%	10%	7%
UAA	UNDER ARMOUR INC	-185%	100%	35%	-5%	100%	36%	52%	27%	36%
ADS-DE	ADIDAS AG	100%	-104%	82%	47%	29%	60%	52%	46%	60%
HIBB	HIBBETT SPORTS INC	-32%	2%	35%	-5%	22%	17%	52%	11%	17%
SPWH	SPORTSMANS WAREHOUSE HLDGS	54%	9%	82%	47%	59%	60%	52%	57%	60%
ELY	CALLAWAY GOLF CO	-256%	-7%	100%	47%	-1%	23%	100%	31%	23%

Source: FactSet

Figure 21: Composite relative valuation



Source: FactSet & IMCP

Discounted Cash Flow Analysis

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

For the purpose of this analysis, the company's cost of equity was calculated to be 9.62% 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 2.38% (12/26/17).
- A beta of 0.95 was utilized since the company is less risky than the market. While retail is cyclical, DKS is a large firm and has reasonable stable sales.
- 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 9.62% (2.38 + 0.95 (10.0-2.38)).

Stage One - The model's first stage simply discounts fiscal years 2018 and 2019 free cash flow to equity (FCFE). These per share cash flows are forecasted to be $0.10 and $0.11, respectively. Discounting these cash flows using the cost of equity calculated above, the results are a value of $0.18 per share. Thus, stage one of this discounted cash flow analysis contributes $0.18 to value.

Stage Two - Stage two of the model focuses on fiscal years 2020 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 9.62% cost of equity. I assume 3.0% sales growth in 2020 through 2023. The ratio of NOWC to sales and NFA turnover will remain at 2020 levels of 11.26% and 3.35%, respectively. The NOPAT margin is expected to rise to 5.0% in 2024 from 3.0% in 2020. I believe this will happen as online sales expand and supply chain becomes more efficient. Finally, after-tax interest is expected to stay the same at 3% per year as the result of modest increases in borrowing.

Figure 22: FCFE and discounted FCFE, 2018 - 2024

	2018	2019	2020	2021	2022	2023	2024
FCFE	$0.10	$0.11	$2.65	$3.20	$3.81	$4.49	$5.23
Discounted FCFE	$0.09	$0.09	$2.01	$2.22	$2.41	$2.59	$2.75

Source: FactSet & IMCP

Added together, the second stage discounted cash flows total $11.98.

Stage Three – Net income for the years 2020 – 2024 is calculated based on the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from $3.02 in 2018 to $6.76 in 2024.

Figure 23: EPS estimates for 2018 - 2024

	2018	2019	2020	2021	2022	2023	2024
EPS	$3.02	$3.36	$3.86	$4.48	$5.17	$5.93	$6.76

Source: FactSet & IMCP

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. I believe that Dicks Sporting Goods is still growing and is in the early-to-mid stages of renovating its business operations to better suit for the future of retail. A P/E ratio of 13.5 is assumed at the end of Dicks Sporting Goods terminal year. This is below the group's historical average of 26.0; however, I would expect the stock to trade at a discount to the S&P 500, which has a normal P/E of 15-16.

Given the assumed terminal earnings per share of $6.76 and a P/E ratio of 13.5, a terminal value of $91.29 per share is calculated. Using the 9.62% cost of equity, this number is discounted back to a present value of $48.00.

Total Present Value – given the above assumptions and utilizing a three-stage discounted cash flow model, an intrinsic value of $60.17 is calculated (0.19 + 11.98 + 48.00). Given DKS' current price of $32.75, this model indicates that the stock is significantly undervalued.

<u>Scenario Analysis</u>

Dicks Sporting Goods is difficult to value with certainty because of the quickly changing retail landscapes, changing e-commerce platforms, and the difficulties in predicting consumers' preference in brand identity. Giving the uncertainty of what is to come, a bull and bear case provides a solid demonstration for quantifying all likely scenarios.

Figure 23 illustrates my assumptions for the bear and bull case scenario analysis. Dicks Sporting goods is a cyclical company, which has greater sales when the economy is prosperous. In the bull case, I assume a P/E of 16 as investors get excited about the sales growth and expansion of store locations during a strong economy. A beta of 0.90 is given because DKS is more stable than its peers in the sporting goods retail industry, and during an economic expansion, DKS would have strong ability to take over more retail sporting goods market share. NOPAT/S and S/NFA also increases as higher sales growth push up margins and asset turnover. The value increased to $56.89, which is 19% higher than the base case.

In the bear case scenario, I lowered sales growth about 2% from the base case. In this scenario, I am assuming a weaker economy along with the management not being able to adapt to the quickly changing retail environment. I chose a P/E multiple of 11 and a beta of 1.1 as growth slows and loss of traction occurs. NOPAT/S and S/NFA will also decrease with sales. The value decreases to $22.70, which is 53% lower than the base case.

Figure 23: DCF target price scenario analysis

Base Case Expecations	2018	2019	2020	2021	2022	2023	2024
Beta	0.95						
Sales Growth	7.4%	6.9%	3.0%	3.0%	3.0%	3.0%	3.0%
NOPAT/S	3.2%	3.3%	3.6%	4.0%	4.3%	4.7%	5.0%
S/NFA	3.40	3.35	3.35	3.35	3.35	3.35	3.35
Terminal Year P/E	13.50						
Bear Case Expectations	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Beta	1.1						
Sales Growth	5.5%	4.5%	2.0%	1.5%	1.0%	1.0%	1.0%
NOPAT/S	3.1%	2.9%	3.3%	3.4%	3.4%	3.4%	3.4%
S/NFA	3.00	2.90	2.90	2.90	2.90	2.85	2.85
Terminal Year P/E	11.00						
Bull Case Expectations	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Beta	0.9						
Sales Growth	9.5%	8.5%	7.0%	6.5%	6.0%	6.0%	5.5%
NOPAT/S	3.9%	3.9%	4.0%	4.0%	4.0%	4.0%	4.0%
S/NFA	5.00	4.70	4.50	4.35	4.25	4.10	4.00
Terminal Year P/E	16.00						

Source: FactSet & IMCP

Base Case Expecations	
Value (P/E of 13.5	**$48.00**
Bear Case Expectations	
Value (P/E of 11.0	**$22.70**
Bull Case Expectations	
Value (P/E of 16.0	**$56.89**

Business Risks

Although I have many reasons to be optimistic about Dicks Sporting Goods, there are several good reasons why I find the stock to be fairly priced only a few dollars higher than its 7-year low:

Exposure to interest rate risk:

The company's revolving credit facility supports liquidity and capital needs ($521 million as of Q3'17). Its interest rate under the credit agreement is benchmarked to the adjusted LIBOR rate plus an applicable margin percentage.

Competitive marketplace:

The sporting goods retail market is highly fragmented and intensely competitive. The firm's current and prospective competitors include many large retail companies that are not directly sporting goods retailers but have a much greater market presence and resources for financing, marketing, and branding. Additionally, consumers have the ability to compare prices via smartphones to seek the lowest prices from competing retailers.

Macroeconomic risk factors:

The company's business is highly dependent on consumer discretionary spending, which is dependent on the U.S. consumer confidence and overall health of the economy.

Inflation risk:

Dicks Sporting Goods has a risk of inflation such as increased cost of their products and overhead cost that may adversely affect its operating margin on gross profit & selling and general & administrative expenses as a percentage of sales. The selling prices of its products do not increase with inflation.

Weather:

The company depends heavily on its suppliers, distribution centers, manufacturers, and support centers to provide it with the sufficient quantities of quality product in a timely manner. If a natural disaster or other serious event happens to prevent the delivery of merchandise to the stores, this could adversely affect DKS' financial condition.

Source: Company reports, IMCP

Appendix 1: Porter's 5 Forces

Threat of New Entrants – Relatively Low

The threat of new entrants remains relatively low in the sporting goods retail industry. The barriers to entry are not very high; however, entry to the sporting goods retail industry requires massive capital, marketing, and online presence. The greatest threat to sporting goods retail is a loss of sales to Amazon (who also partnered with Nike) or a major increase in direct-to-consumer sales from key brands like Nike and Under Armour.

Threat of Substitutes – Relatively High

Dicks Sporting Goods' greatest threats to substitutes are Amazon and direct-to-consumer retailers. DKS relies heavily on its branded merchandise to attract customers. If customers prefer to buy directly from direct-to-consumer brands like Nike and Under Armour, the company will suffer a major loss in revenues. However, Dicks Sporting Goods currently has many partnerships with major brands that will help prevent loss of sales, which is why I believe the threat of substitutes at relatively high instead of high.

Supplier Power – Medium

The two major suppliers of Dicks Sporting Goods are Nike at 20% and Under Armour at 12%. After that, every other supplier is under 10% of sales. Supplier power is medium because Under Armour and Nike could have a material impact if they curtailed supplies. However, this is very unlikely to happen as all brands rely on retailers like Dicks Sporting Goods to sell and distribute their merchandise.

Buyer Power – Very High

Buying power is very high as customers have many retail stores and online platforms to purchase sporting goods retail items. DKS has an advantage partnering with key brands to maintain exclusivity of certain products; however, this is does not take away much power from the consumer as similar items are available elsewhere.

Intensity of Competition – High

The retail sporting goods industry is very competitive; however, Dicks Sporting Goods remains a giant in the industry and continues to expand its locations and market share. Other sporting goods retailers are not expanding as fast as Dicks Sporting Goods and do not have as recognizable of a name.

Appendix 2: SWOT Analysis

Strengths	Weaknesses
High brand recognition Brand partnerships Ideal Locations	Slowing Same-store-sales Decreasing margins Negative FCF
Opportunities	**Threats**
Online sales Growing customer experience Renewing partnerships	Amazon's online sales Direct to consumer brands Futher decline in margin

Appendix 3: Income Statement

Income Statement (in millions)	2013	2014	2015	2016	2017E	2018E	2019E
Sales	$6,213	$6,814	$7,271	$7,922	$8,607	$9,243	$9,881
Direct costs	4,269	4,727	5,088	5,556	6,057	6,562	6,996
Gross Margin	1,944	2,087	2,183	2,366	2,550	2,680	2,885
SG&A and other	1,407	1,533	1,648	1,916	2,045	2,218	2,381
EBIT	537	554	535	450	505	462	504
Interest	3	3	4	6	7	3	3
EBT	534	551	531	444	498	459	501
Taxes	209	212	200	171	165	163	178
Income	325	339	331	273	333	296	323
Other	(12)	(5)	0	(14)	(7)	(8)	(7)
Net income	338	344	330	287	340	304	330
Basic Shares	123	119	115	111	105	100.6	98.2
EPS	$2.75	$2.89	$2.87	$2.59	$3.25	$3.02	$3.36
DPS	$0.52	$0.51	$0.56	$0.61	$0.65	$0.68	$0.69
Growth Statistics							
Sales		*9.7%*	*6.7%*	*9.0%*	*8.6%*	*7.4%*	*6.9%*
Direct Costs		*10.7%*	*7.6%*	*9.2%*	*9.0%*	*8.4%*	*6.6%*
Gross Margin		*7.3%*	*4.6%*	*8.4%*	*7.8%*	*5.1%*	*7.6%*
SG&A and other		*8.9%*	*7.5%*	*16.3%*	*6.7%*	*8.5%*	*7.3%*
EBIT		*3.2%*	*-3.4%*	*-15.9%*	*12.3%*	*-8.5%*	*9.0%*
Interest		*9.8%*	*24.8%*	*46.0%*	*16.1%*	*-59.0%*	*16.7%*
EBT		*3.2%*	*-3.6%*	*-16.4%*	*12.2%*	*-7.8%*	*9.0%*
Taxes		*1.6%*	*-5.3%*	*-14.7%*	*-3.5%*	*-1.2%*	*9.0%*
Continuing income		*4.2%*	*-2.5%*	*-17.5%*	*22.1%*	*-11.1%*	*9.0%*
Other		*-57.7%*	*-105.9%*	*-4829%*	*-50.0%*	*7.4%*	*-11.6%*
Net income		*2.0%*	*-4.0%*	*-13.0%*	*18.4%*	*-10.7%*	*8.5%*
Basic Shares		*-3.0%*	*-3.4%*	*-3.6%*	*-5.8%*	*-3.9%*	*-2.4%*
EPS		*5.1%*	*-0.7%*	*-9.8%*	*25.8%*	*-7.1%*	*11.1%*
DPS		*-2.0%*	*9.3%*	*8.9%*	*6.2%*	*4.0%*	*2.4%*
Common Size							
Sales	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*	*100.0%*
Direct Costs	*68.7%*	*69.4%*	*70.0%*	*70.1%*	*70.4%*	*71.0%*	*70.8%*
Gross Margin	*31.3%*	*30.6%*	*30.0%*	*29.9%*	*29.6%*	*29.0%*	*29.2%*
SG&A and other	*22.6%*	*22.5%*	*22.7%*	*24.2%*	*23.8%*	*24.0%*	*24.1%*
EBIT	*8.6%*	*8.1%*	*7.4%*	*5.7%*	*5.9%*	*5.0%*	*5.1%*
Interest	*0.0%*	*0.0%*	*0.1%*	*0.1%*	*0.1%*	*0.0%*	*0.0%*
EBT	*8.6%*	*8.1%*	*7.3%*	*5.6%*	*5.8%*	*5.0%*	*5.1%*
Taxes	*3.4%*	*3.1%*	*2.8%*	*2.2%*	*1.9%*	*1.8%*	*1.8%*
Continuing income	*5.2%*	*5.0%*	*4.5%*	*3.4%*	*3.9%*	*3.2%*	*3.3%*
Other	*-0.2%*	*-0.1%*	*0.0%*	*-0.2%*	*-0.1%*	*-0.1%*	*-0.1%*
Net income	*5.4%*	*5.1%*	*4.5%*	*3.6%*	*4.0%*	*3.3%*	*3.3%*

Appendix 4: Balance Sheet

Balance Sheet (in millions)	2013	2014	2015	2016	2017E	2018E	2019E
Cash	182	222	119	165	170	103	38
Operating assets ex cash	1,438	1,577	1,694	1,831	2,162	2,311	2,569
Operating assets	1,620	1,799	1,813	1,996	2,332	2,414	2,607
Operating liabilities	1,002	1,118	1,191	1,397	1,590	1,618	1,729
NOWC	618	681	622	599	742	797	877
NOWC ex cash (NWC)	437	459	503	434	572	693	840
NFA	1,451	1,593	1,747	2,260	2,487	2,719	2,950
Invested capital	*$2,070*	*$2,273*	*$2,368*	*$2,859*	*$3,229*	*$3,515*	*$3,827*
Marketable securities	-	-	-	-	-	-	-
Total assets	*$3,071*	*$3,392*	*$3,559*	*$4,256*	*$4,820*	*$5,133*	*$5,556*
Short-term and long-term debt	$7	$6	$6	$5	$5	$5	$5
Other liabilities	370	435	573	924	1,124	1,324	1,474
Debt/equity-like securities	-	-	-	-	-	-	-
Equity	1,692	1,832	1,789	1,929	2,090	2,176	2,338
Total supplied capital	*$2,070*	*$2,273*	*$2,368*	*$2,859*	*$3,219*	*$3,505*	*$3,817*
Total liabilities and equity	*$3,071*	*$3,392*	*$3,559*	*$4,256*	*$4,810*	*$5,123*	*$5,546*
Growth Statistics							
Cash		*22.0%*	*-46.3%*	*38.5%*	*3.2%*	*-39.1%*	*-63.7%*
Operating assets ex cash		*9.6%*	*7.4%*	*8.1%*	*18.1%*	*6.9%*	*11.2%*
Operating assets		*11.0%*	*0.8%*	*10.1%*	*16.9%*	*3.5%*	*8.0%*
Operating liabilities		*11.6%*	*6.5%*	*17.3%*	*13.9%*	*1.7%*	*6.9%*
NOWC		*10.0%*	*-8.7%*	*-3.7%*	*23.9%*	*7.4%*	*10.1%*
NOWC ex cash (NWC)		*5.1%*	*9.6%*	*-13.6%*	*31.7%*	*21.2%*	*21.2%*
NFA		*9.7%*	*9.7%*	*29.4%*	*10.1%*	*9.3%*	*8.5%*
Invested capital		*9.8%*	*4.2%*	*20.7%*	*12.9%*	*8.9%*	*8.9%*
Marketable securities							
Total assets		*10.4%*	*4.9%*	*19.6%*	*13.2%*	*6.5%*	*8.3%*
Short-term and long-term debt		*-12.5%*	*-8.3%*	*-9.9%*	*-12.8%*	*0.0%*	*0.0%*
Other liabilities		*17.4%*	*31.8%*	*61.3%*	*21.6%*	*17.8%*	*11.3%*
Debt/equity-like securities							
Equity		*8.3%*	*-2.3%*	*7.8%*	*8.3%*	*4.1%*	*7.4%*
Total supplied capital		*9.8%*	*4.2%*	*20.7%*	*12.6%*	*8.9%*	*8.9%*
Total liabilities and equity		*10.4%*	*4.9%*	*19.6%*	*13.0%*	*6.5%*	*8.3%*

Appendix 5: Sales Forecast by Segment

Sales (in millions)							
Items	**2013**	**2014**	**2015**	**2016**	**2017E**	**2018E**	**2019E**
Sales	6,213	6,814	7,271	7,922	8,607	9,243	9,881
Growth		*9.7%*	*6.7%*	*9.0%*	*8.6%*	*7.4%*	*6.9%*
Hardline	3,030	2,992	3,264	3,574	3,782	4,028	4,269
Growth		*-1.3%*	*9.1%*	*9.5%*	*5.8%*	*6.5%*	*6.0%*
% of sales	*48.8%*	*43.9%*	*44.9%*	*45.1%*	*43.9%*	*2.0%*	*43.2%*
Apparel	1,867	2,461	2,553	2,756	3,068	3,313	3,562
Growth		*31.8%*	*3.7%*	*8.0%*	*11.3%*	*8.0%*	*7.5%*
% of sales	*30.0%*	*36.1%*	*35.1%*	*34.8%*	*35.6%*	*35.8%*	*6.0%*
Footwear	1,273	1,316	1,403	1,529	1,685	1,819	1,956
Growth		*3.4%*	*6.6%*	*9.0%*	*10.2%*	*8.0%*	*7.5%*
% of sales	*20.5%*	*19.3%*	*19.3%*	*19.3%*	*19.6%*	*19.7%*	*19.8%*
Other	43	45	51	63	72	82	94
Growth		*4.7%*	*13.3%*	*23.5%*	*14.4%*	*14.4%*	*14.0%*
% of sales	*0.7%*	*0.7%*	*0.7%*	*0.8%*	*0.8%*	*0.9%*	*1.0%*

Appendix 6: Cash Flow Statement

Cash Flow Statement (in millions)						
Items	**2014**	**2015**	**2016**	**2017E**	**2018E**	**2019E**
Cash from Operatings (understated - depr'n added to net assets)						
Net income	$344	$330	$287	$340	$304	$330
Change in Net Working Capital ex cash	(22)	(44)	69	(138)	(121)	(147)
Cash from operations	$322	$287	$356	$203	$183	$183
Cash from Investing (understated - depr'n added to net assets)						
Change in NFA	($141)	($154)	($514)	($227)	($231)	($231)
Change in Marketable Securities	$0	$0	$0	$0	$0	$0
Cash from investing	($141)	($154)	($514)	($227)	($231)	($231)
Cash from Financing						
Change in Short-Term and Long-Term Debt	($1)	($1)	($1)	($1)	$0	$0
Change in Other liabilities	64	138	351	200	200	150
Change in Debt/Equity-Like Securities	0	0	0	0	0	0
Dividends	(61)	(65)	(68)	(68)	(68)	(68)
Change in Equity ex NI and Dividends	(143)	(309)	(79)	(112)	(150)	(100)
Cash from financing	($141)	($236)	$203	$20	($18)	($18)
Change in Cash	40	(103)	46	(5)	(67)	(66)
Beginning Cash	182	222	119	165	170	103
Ending Cash	$222	$119	$165	$160	$103	$38

Appendix 7: Key Ratios

Key Ratios	2013	2014	2015	2016	2017E	2018E	2019E
Profitability							
Gross margin	31.3%	30.6%	30.0%	29.9%	29.6%	29.0%	29.2%
Operating (EBIT) margin	8.6%	8.1%	7.4%	5.7%	5.9%	5.0%	5.1%
Net profit margin	5.4%	5.1%	4.5%	3.6%	4.0%	3.3%	3.3%
Activity							
NFA (gross) turnover		4.48	4.35	3.95	3.63	3.55	3.49
Total asset turnover		2.11	2.09	2.03	1.90	1.86	1.85
Liquidity							
Op asset / op liab	1.62	1.61	1.52	1.43	1.47	1.49	1.51
NOWC Percent of sales		9.5%	9.0%	7.7%	7.8%	8.3%	8.5%
Solvency							
Debt to assets	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%
Debt to equity	0.4%	0.4%	0.3%	0.3%	0.2%	0.2%	0.2%
Other liab to assets	12.1%	12.8%	16.1%	21.7%	23.3%	25.8%	26.5%
Total debt to assets	12.3%	13.0%	16.3%	21.8%	23.4%	25.9%	26.6%
Total liabilities to assets	44.9%	46.0%	49.7%	54.7%	56.4%	57.4%	57.7%
Debt to EBIT	0.01	0.01	0.01	0.01	0.01	0.01	0.01
EBIT/interest	183.27	172.34	133.40	76.82	74.26	165.94	155.10
Debt to total net op capital	0.4%	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%
NOPAT to sales	5.3%	5.0%	4.6%	3.5%	3.9%	3.2%	3.3%
Sales to NOWC		10.49	11.17	12.98	12.84	12.02	11.80
Sales to NFA		4.48	4.35	3.95	3.63	3.55	3.49
Sales to IC		3.14	3.13	3.03	2.83	2.74	2.69
Total ROIC		15.7%	14.4%	10.6%	11.1%	8.8%	8.9%
NOPAT to sales	5.3%	5.0%	4.6%	3.5%	3.9%	3.2%	3.3%
Sales to EOY NOWC	10.05	10.01	11.70	13.23	11.60	11.60	11.26
Sales to EOY NFA	4.28	4.28	4.16	3.50	3.46	3.40	3.35
Sales to EOY IC	3.00	3.00	3.07	2.77	2.67	2.63	2.58
Total ROIC using EOY IC	15.8%	15.0%	14.1%	9.7%	10.5%	8.5%	8.5%
ROE							
5-stage							
EBIT / sales		8.1%	7.4%	5.7%	5.9%	5.0%	5.1%
Sales / avg assets		2.11	2.09	2.03	1.90	1.86	1.85
EBT / EBIT		99.4%	99.3%	98.7%	98.7%	99.4%	99.4%
Net income /EBT		62.5%	62.2%	64.7%	68.3%	66.2%	65.9%
ROA		10.7%	9.5%	7.4%	7.5%	6.1%	6.2%
Avg assets / avg equity		1.83	1.92	2.10	2.26	2.33	2.37
ROE		19.5%	18.2%	15.5%	16.9%	14.3%	14.6%
Payout Ratio		17.8%	19.6%	23.7%	20.0%	22.4%	20.6%
Retention Ratio		82.2%	80.4%	76.3%	80.0%	77.6%	79.4%
Sustainable Growth Rate		16.1%	14.7%	11.8%	13.6%	11.1%	11.6%

Appendix 8: 3-Stage DCF Model (Base case)

First Stage			Second Stage				
	2018	2019	2020	2021	2022	2023	2024
Sales Growth	*7.4%*	*6.9%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
NOPAT / S	*3.2%*	*3.3%*	*3.6%*	*4.0%*	*4.3%*	*4.7%*	*5.0%*
S / NOWC	*11.60*	*11.26*	*11.26*	*11.26*	*11.26*	*11.26*	*11.26*
S / NFA (EOY)	*3.40*	*3.35*	*3.35*	*3.35*	*3.35*	*3.35*	*3.35*
S / IC (EOY)	*2.63*	*2.58*	*2.58*	*2.58*	*2.58*	*2.58*	*2.58*
ROIC (EOY)	*8.5%*	*8.5%*	*9.4%*	*10.3%*	*11.1%*	*12.0%*	*12.9%*
ROIC (BOY)		*9.2%*	*9.7%*	*10.6%*	*11.5%*	*12.4%*	*13.3%*
Share Growth		*-2.4%*	*-3.0%*	*-3.0%*	*-3.0%*	*-3.0%*	*-3.0%*
Sales	$9,243	$9,881	$10,178	$10,483	$10,797	$11,121	$11,455
NOPAT	$298	$325	$370	$417	$466	$518	$573
Growth		*9.0%*	*13.7%*	*12.7%*	*11.9%*	*11.2%*	*10.6%*
- Change in NOWC	55	81	26	27	28	29	30
NOWC EOY	*797*	*877*	*904*	*931*	*959*	*988*	*1,017*
Growth NOWC		*10.1%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
- Chg NFA	231	231	88	91	94	97	100
NFA EOY	*2,719*	*2,950*	*3,038*	*3,129*	*3,223*	*3,320*	*3,419*
Growth NFA		*8.5%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
Total inv in op cap	286	312	115	118	122	125	129
Total net op cap	3515	3827	3942	4060	4182	4307	4437
FCFF	$12	$13	$255	$298	$344	$393	$444
% of sales	*0.1%*	*0.1%*	*2.5%*	*2.8%*	*3.2%*	*3.5%*	*3.9%*
Growth	*0.0%*	*9.9%*	*1823.6%*	*17.1%*	*15.4%*	*14.1%*	*13.0%*
- Interest (1-tax rate)	2	2	2	2	2	2	2
Growth	*0.0%*	*16.7%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
+ Net new debt	0	0	0	0	0	0	0
Debt	5	5	5	5	5	5	5
Debt / tot net op capital	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*	*0.1%*
FCFE w/o debt	$10	$11	$253	$296	$342	$390	$441
% of sales	*0.1%*	*0.1%*	*2.5%*	*2.8%*	*3.2%*	*3.5%*	*3.9%*
Growth		*8.7%*	*2165.7%*	*17.2%*	*15.5%*	*14.1%*	*13.0%*
/ No Shares	100.6	98.2	95.3	92.4	89.6	86.9	84.3
FCFE	$0.10	$0.11	$2.65	$3.20	$3.81	$4.49	$5.23
Growth		*11.4%*	*2235.8%*	*20.8%*	*19.0%*	*17.7%*	*16.5%*
			$ -	$ -	$ -	$ -	$ -
* Discount factor	0.91	0.83	0.76	0.69	0.63	0.58	0.53
Discounted FCFE	$0.09	$0.09	$2.01	$2.22	$2.41	$2.59	$2.75
Third Stage							
Terminal value P/E							
Net income	$304	$330	$367	$414	$464	$516	$570
% of sales	*3.3%*	*3.3%*	*3.6%*	*4.0%*	*4.3%*	*4.6%*	*5.0%*
EPS	$3	$3	$4	$4	$5	$6	$7
Growth	*0.0%*	*11.1%*	*14.9%*	*16.2%*	*15.4%*	*14.6%*	*14.0%*
Terminal P/E							13.50
* Terminal EPS							$6.76
Terminal value							$91.29
* Discount factor							0.53
Discounted terminal value							$48.00
Summary							
First stage	$0.19	Present value of first 2 year cash flow					
Second stage	$11.98	Present value of year 3-7 cash flow					
Third stage	$48.00	Present value of terminal value P/E					
Value (P/E)	**$60.17**	= value at beg of fiscal yr	2018				