**Analyst: Rogelio Cuevas** INVESTMENT MANAGEMENT CERTIFICATE PROGRAM February 16, 2018

| Recommendation | NEUTRAL |
|---|---|
| **Target (today's value)** | $187 |
| **Current Price** | $185.27 |
| **52-week range** | $140.90 - $207.60 |

| Share Data | |
|---|---|
| Ticker: | HD |
| Market Cap. (Billion): | $216.35 |
| Inside Ownership | 0.4% |
| Inst. Ownership | 72.4% |
| Beta | 0.93 |
| Dividend Yield | 1.92% |
| Payout Ratio | 46.6% |
| Cons. Long-Term Growth Rate | 14.8% |

| | '15 | '16 | '17E | '18E | '19E |
|---|---|---|---|---|---|
| Sales (billions) | | | | | |
| Year | $885 | $946 | $101 | $107 | $113 |
| Gr % | 6.4% | 6.9% | 6.4% | 6.8% | 5.5% |
| Cons | - | - | $6.3 | $106 | $107 |
| EPS | | | | | |
| Year | $5.49 | $6.47 | $7.39 | $8.24 | $8.93 |
| Gr % | 18.1% | 19.4% | 14.2% | 11.5% | 8.4% |
| Cons | $5.36 | $6.33 | $7.38 | $9.32 | $10.12 |

| Ratio | '15 | '16 | '17E | '18E | '19E |
|---|---|---|---|---|---|
| ROE (%) | 89.6% | 149% | 213% | 302% | 564% |
| Industry | 36.4 | 50.6% | 51.2% | 87.1% | 219% |
| NPM (%) | 7.9% | 8.4% | 8.7% | 8.8% | 8.8% |
| Industry | 4.4% | 4.4% | 4.4% | 4.5% | 5% |
| A. T/O | 2.23 | 2.29 | 2.23 | 2.33 | 2.34 |
| ROA (%) | 17.1% | 18.7 | 18.7% | 20.3% | 21% |
| Industry | 9.5% | 9.8% | 9.9% | 10.3% | 12% |
| D/A | 50.1% | 54.9% | 56.8% | 63.6% | 66.2 |

| Valuation | '16 | '17E | '18E | '19E |
|---|---|---|---|---|
| P/E | 23.5 | 22.2 | 19.9 | 18.3 |
| Industry | 22 | 21 | 19.9 | 18.4 |
| P/S | 1.84 | 2.19 | 2.02 | 1.93 |
| P/B | 20.8 | 86 | 255.3 | 116.9 |
| P/CF | 17 | 18.9 | 16.2 | 15.1 |
| EV/EBIT | 14.2 | 13.5 | 15 | 14.6 |

| Performance | Stock | Industry |
|---|---|---|
| 1 Month | -5.7% | -1.1% |
| 3 Month | 12% | 32.3% |
| YTD | -2.2% | 12.7% |
| 52-week | 59.3% | 2.4% |
| 3-year | 65.6 | -24.5% |

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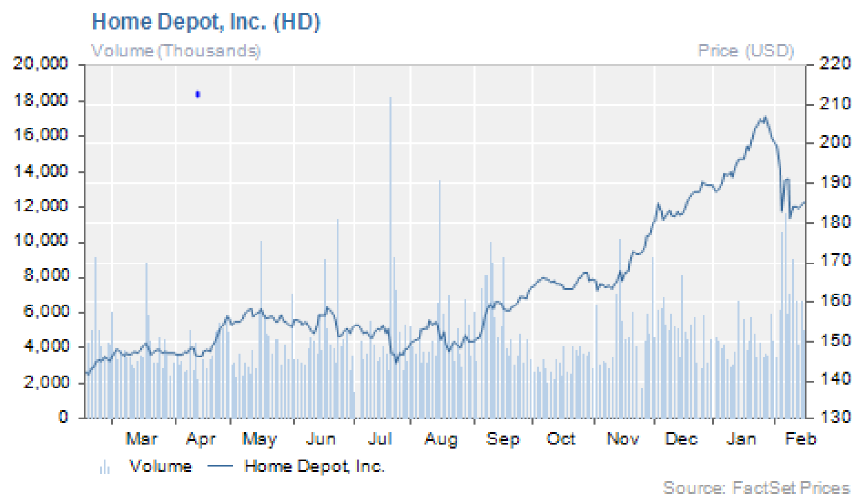
Home Improvement Retail

# The Home Depot, Inc




**Summary:** I recommend a neutral rating with a target of $187. Although HD has had outstanding growth and operating efficiency, we are close to the end of the housing cycle. Because of this, I expect sales and earnings growth to mature. The stock is fairly valued based on relative and DCF analysis.

*Key Drivers:*

- Housing Market: The housing market has recovered tremendously since the downturn in 2006. Main housing indicators such as private residential Investments, housing starts, and new home Sales have proven demand in the home improvement retail space.

- Competitors: Home Depot is the strongest retailer within the home improvement environment. Home Depot has higher sales growth, margins, and ROE relative to Lowes. Future investment initiatives should help Home Depot continue to outgrow Lowes.

- Hurricanes: Hurricanes Harvey and Irma is an important short-term positive driver for company sales. After hurricane Sandy, Home Depot's growth jumped ~1.2% over three quarters. I expect hurricanes Harvey and Sandy to cause more damage, creating even more sales growth for Home Depot

*Valuation:* DCF analysis indicates Home Depot is overvalued. Relative multiple valuation suggests the stock is fairly valued. A combination of the approaches implies that Home Depot is fairly valued, as the stock's value is about $187 and the shares trade at $185

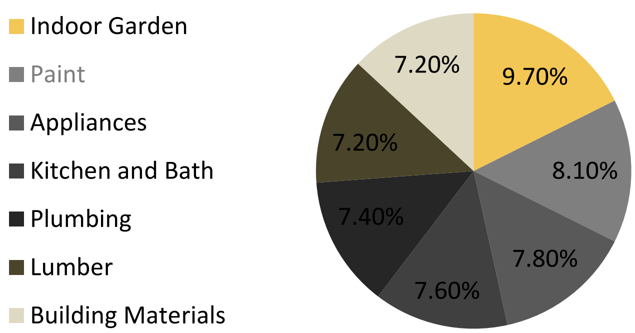
*Risks:* Threats to the business include information technology failure, commodity prices, relationships with suppliers, uncertainty in the housing market and economic conditions, and currency fluctuations.

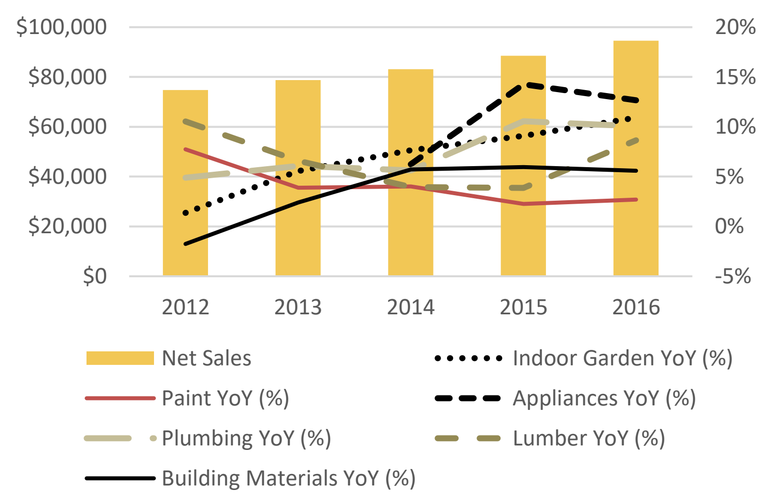
## Company Overview

Home Depot, Inc (HD) is the leading home improvement retailer in the world with $94 billion net sales during fiscal year of 2016. Home Depot sells a variety of building materials, home improvement products, lawn and garden products, and a wide selection of installation services such as roofing, kitchen cabinets, vinyl siding, and more. Home Depot operates 2,278 stores in all 50 states and overseas including Guam, US Virgin Islands, Canada, and Mexico. Stores average 104,000 square feet, with an additional space of 24,000 feet occupied by the garden department. HD also has a variety of other departments ranging from lumber, flooring, paint, plumbing, and more.

Home Depot has three customer groups: “Do-It-Yourself (DIY),” “Do-It-For-Me (DIFM),” and Pro Customers. “Do-It-Yourself” typically serves homeowners who perform their own installations and renovations whereas “Do-It-For-Me (DIFM)” serves home owners that purchase building materials and hire third party individuals to perform their remodeling and installations. Lastly, the Pro customer base consists of professional remodelers, contractors, tradesmen, and institutional customers. Home Depot’s pro customers have added outstanding growth to sales, proven by growth in transactions and ticket growth. Currently, pro customers make up 40% of sales, while the DIY and DIFM customers make up 60%.

**Figures 1 and 2: Revenue Sources for HD, year-end 2016 (left) and Sales (in millions & Segment Growth YoY%**




*Source: Company reports*

## *Business/Industry Drivers*

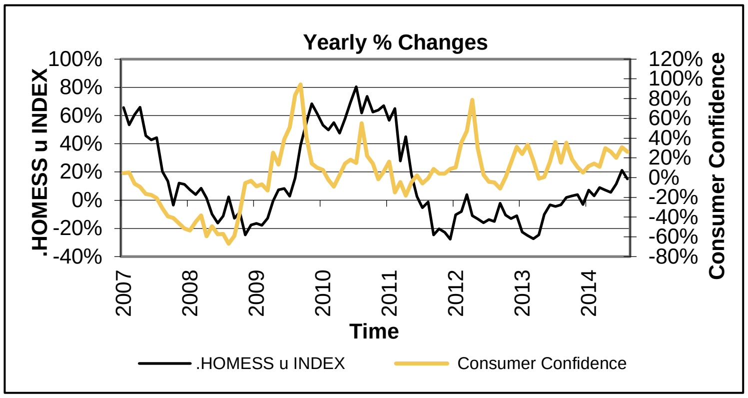
There are many factors that affect the success of Home Depot, but the most important drivers include:

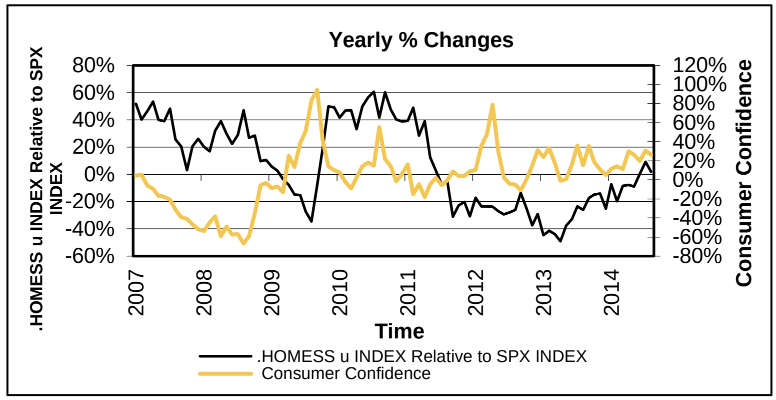
1) Housing Market Recovery
2) Competitor Analysis
3) Hurricanes Harvey & Irma

<u>Housing Market Recovery</u>

The US home improvement industry is primarily driven by two big retailers, Home Depot and Lowes. Home Depot has the largest market share, with FY 2016 record sales of $94B and $62B for Lowes. The industry is very cyclical; it is driven primarily by consumer confidence and consumer spending which has benefited the housing market. Since the market downturn in 2008, we have seen tremendous growth in the home improvement industry led by employment, wage growth, and a low interest rate economy. A low unemployment rate of 4.1%, has led more consumers to remodel and buy new homes.

**Figures 3 and 4: Home Builders Composite Vs Consumer Confidence (left), Relative to S&P 500**

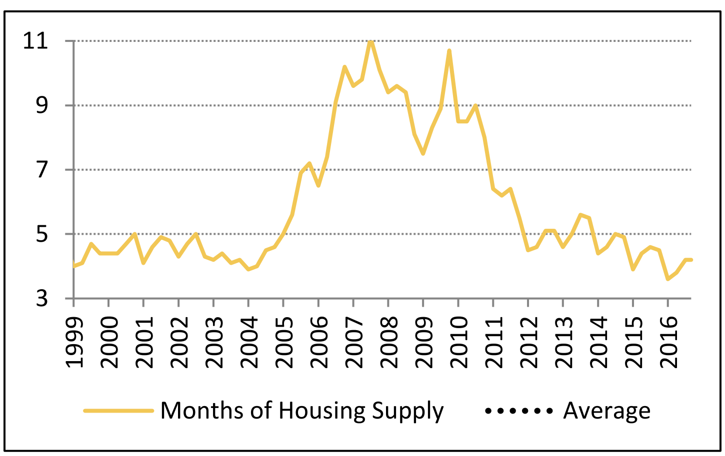


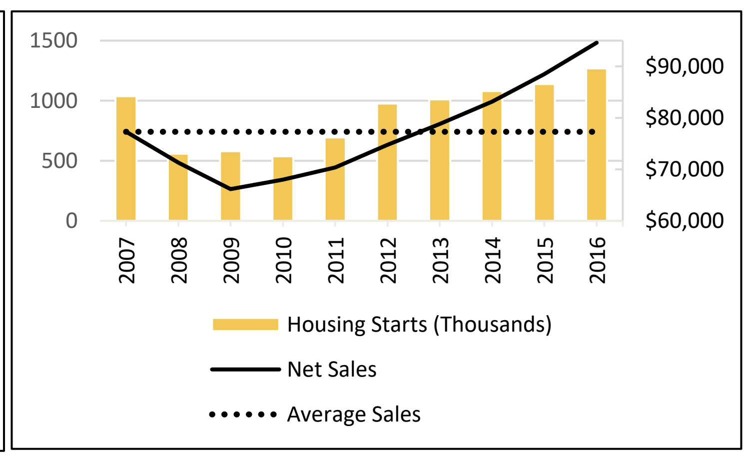




*Source: Bloomberg, Company Reports*

Demand for homes has remained strong throughout the recovery, as we have recently seen 4.3 months of supply in the market, still down from all time averages of 6 months. Months in supply has clearly driven home price appreciation, boosting the S&P Case-Shiller US National Home Price index to, slightly higher than 2006 which was 194. Modest growth in housing starts has been the biggest driver for sales in demand for HD; however, housing starts has still grown at an average rate of 4.0% since the low levels of 2008. We will experience temporary slowdown due to hurricane Harvey and Irma, which have pushed back new construction.

**Figures 5 and 6: Months of Housing Supply (left), Housing Starts Vs Net Sales**



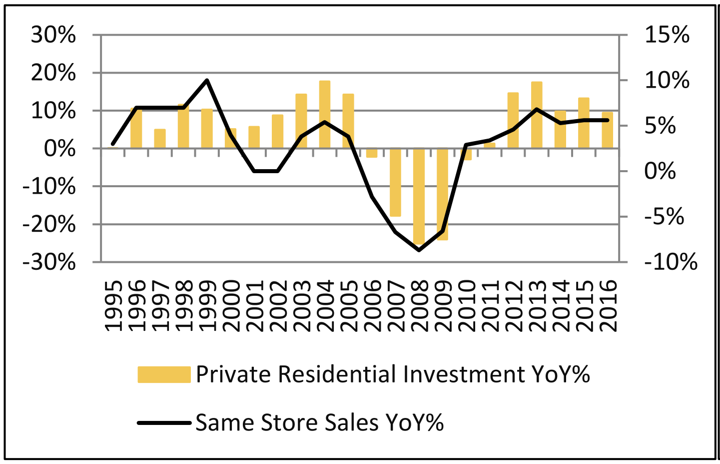

*Source: Bloomberg, Company Reports*

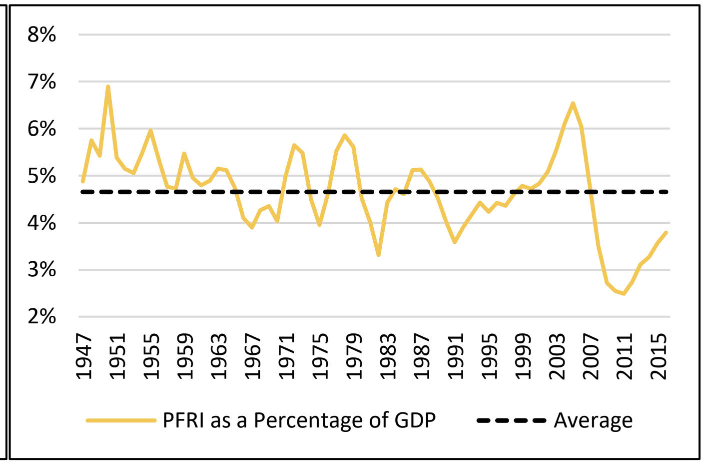
The private residential investment index (PRI) has yet to fully recover to historical norms.

The private residential investment (PRI) index is also positively correlated with Home Depot's same store sales. Recently, PRI has decelerated as it reported disappointing growth in the 2Q17. Even though PRI has grown slowly, we have yet to recover to historical averages of 4.65% of GDP. Therefore, we have much growth ahead. Housing affordability is still high and consumer confidence is not expected to fall.

The affordability index is based on a mix of median home prices, median income and mortgage rates. Affordability has yet become problematic, as we are still living in a low interest and inflation economy and home prices are only just back to the price peak. It is currently standing at 151% (6/30/2017), down 27% from higher levels in 2013.

**Figures 7 and 8: PRI % Growth Vs Same Store Sales % Growth, PRI as % of GDP**



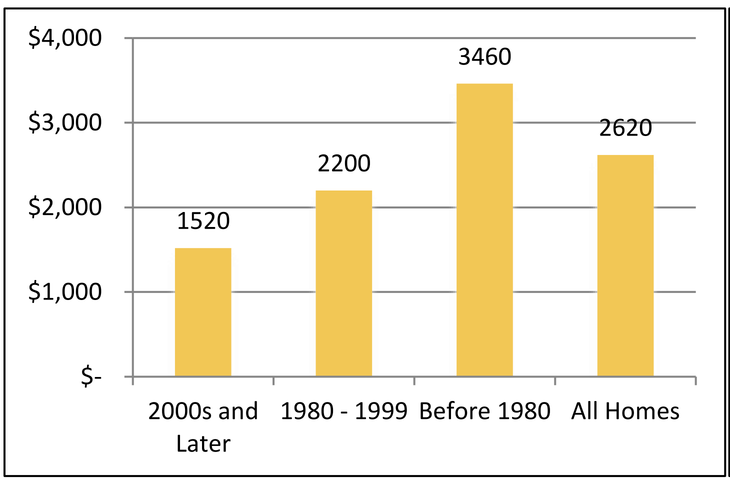



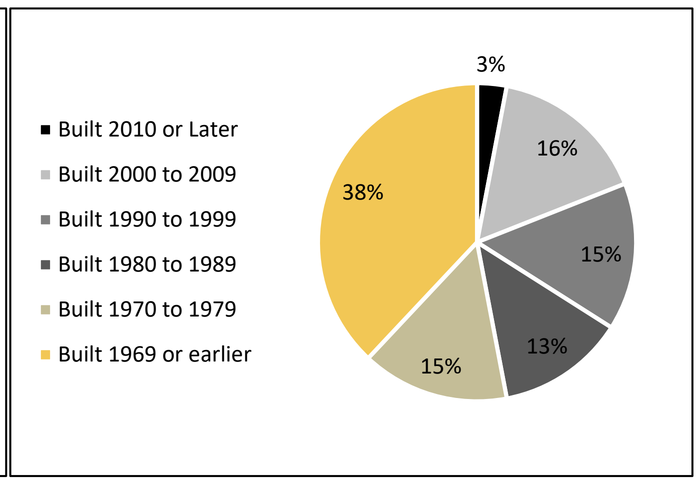

*Source: Bloomberg, Company Reports*

66% of the housing stock in the U.S is older than 30 years compared to only 60% in 2006.

The aging housing stock is another main driver of the housing market and home improvement retailers. Low levels of construction in the past has increased the average age of homes over time. Housing stock aging trends have led to spending on remodeling, as older homes require additional renovations. Currently, 66% of the housing stock in the U.S is older than 30 years, up from 60% in 2006.

**Figures 9 and 10: Average Expenditure per year built, (left) and Housing Stock %**




*Source: NAHB, JCHS Harvard*

Home Depot has ~30% of the U.S home improvement market share.

<u>Competitor Analysis</u>

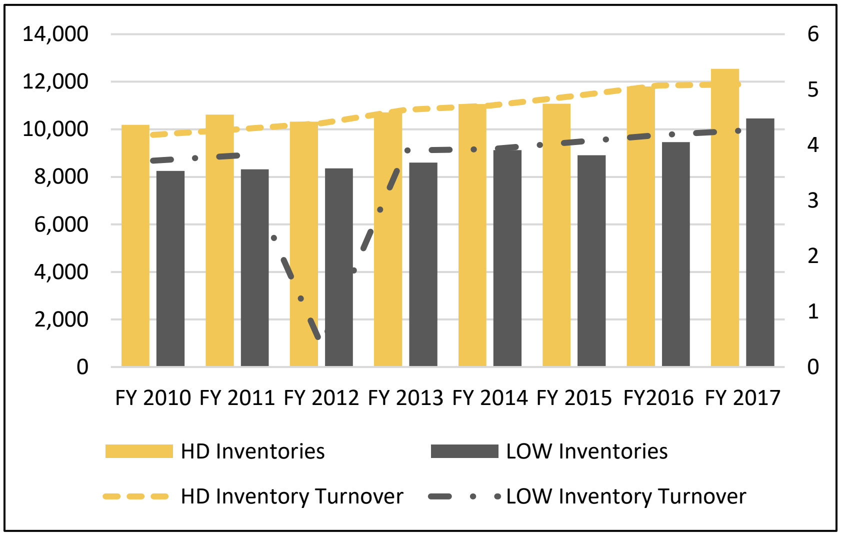
The home improvement retail industry is highly competitive, especially between Home Depot and Lowes. Currently, Home Depot has ~30% of the U.S home-improvement market ($336B) vs ~20% for Lowes. With a healthier housing market recovery, more foot traffic has set the tone in both stores. Home Depot, obsessed with customer satisfaction, has prioritized its “three-legged stool” of customer experience, product authority, and productivity over the years. The firm’s investments in its supply chain have helped maximize the retail experience, especially with Pro-customers.

Project Sync is one of HD’s most recent initiatives that went live to 90% of its U.S stores during the fiscal year 2016. Through Project Sync, Home Depot has been able to centralize distribution through

Home Depot's implementation of Project Sync, has improved its inventory turnover.

Rapid Deployment Centers (RDCs), which deliver products to the consumer quicker and more efficiently. With this initiative, Home Depot is able to satisfy deliveries in two days, while also improving customer satisfaction. In contrast, Lowes has been struggling in the past year to increase inventory turnover. Despite Lowe's robust customer satisfaction, the firm is still struggling to keep up with Home Depot's supply chain success.

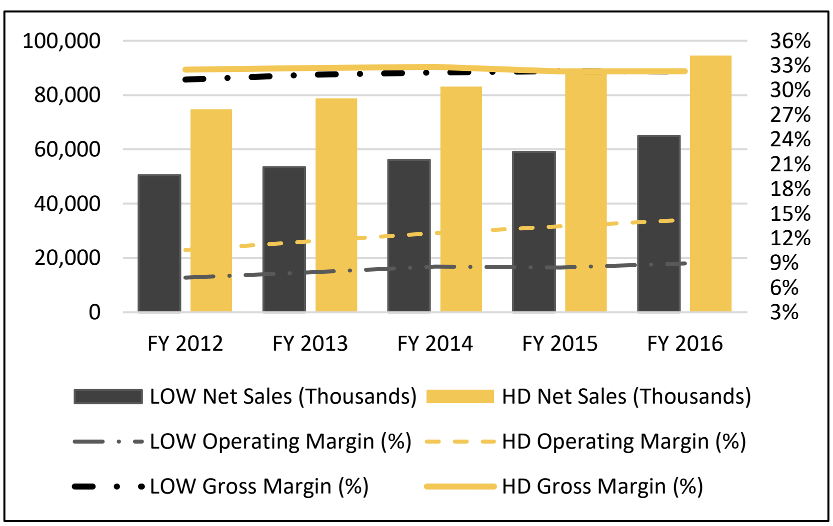
**Figures 11 and 12: Inventory (left) Vs Inventory Turnover Days (right)**




*Source: Company Reports*

In addition, improvement of margins is another key metric that differentiates both competitors. Home Depot and Lowes have similar 2017 gross margins of 32.3% for HD and 32.3% for Lowes; on the other hand, Home Depot's gross margins are still down 0.5% from all time high gross margins of 32.8% in 2015. Even though HD has struggled to increase gross margins, it should experience more improvement in the future with the implementation of Pro Sync, margins could also rise as the firm has been able to increase same store sales by improving the "interconnected retail experience" and focusing on its omnichannel strategies.

**Figures 13 and 14: Gross Margin (left), Vs Net Sales**

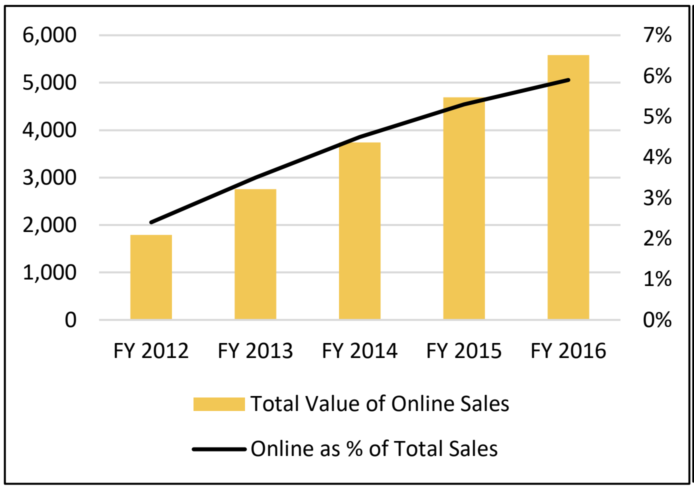


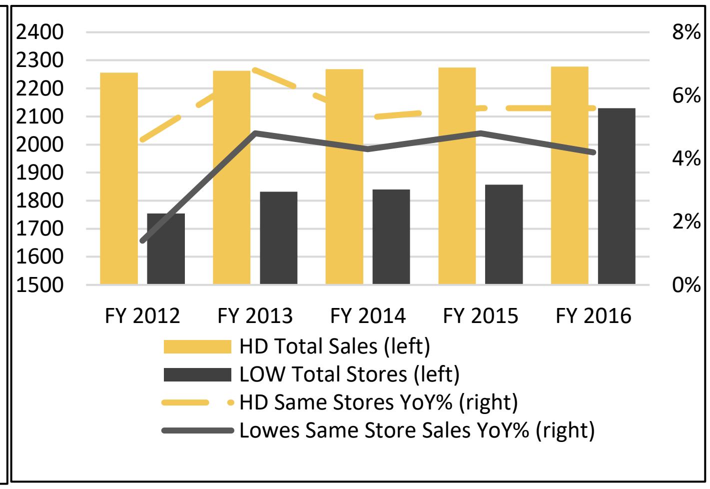

*Source: Company Reports*

Currently, Home Depot offers FIRST phones to employees to help customers navigate through different products online, check out in the isles during peak traffic hours, and check for inventory status. During fiscal year 2017, Home Depot also added new features to its online website to improve search capabilities and speed the checkout experience. Furthermore, HD has recognized that customers are looking for fast delivery services. Home Depot launched its Customer Order Management (COM) platform in all of U.S stores in 2016, which has provided footing for other services such as "Buy Online," "Deliver from Stores," "Buy online Ship to Store (BOSS)," and "Buy online, Return in Store (BORIS)." 40% of online sales are actually picked up in the store.

In addition, COM includes a dynamic ETA feature for customer online orders, which provides a more accurate delivery date and time for customers. As previously mentioned, Home Depot's investment in supply chain on Project Sync improves delivery time to two days for online and in store orders. As a result, Home Depot has experienced tremendous growth in online sales, which has boosted same store sales relative to Lowes.

**Figures 15 and 16: HD Online Sales (left) HD & LOW Stores and Same Store Sales**



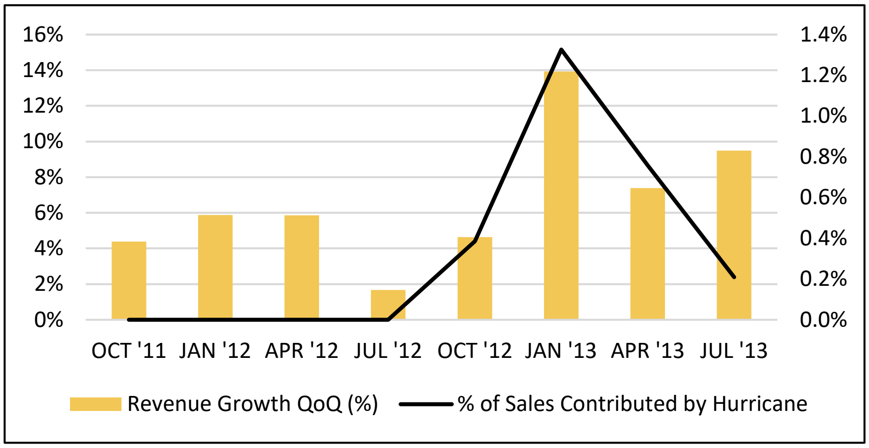

*Source: Company Reports*

Home Depot has not opened any new stores in the U.S since 2014. On the contrary, Lowes boosted sales in Canada when it acquired Rona during 2016. Lowes' store count rose to 299 stores in Canada, up from 44 stores in 2016. This acquisition occurred during a year when same stores sales growth deteriorated.

Hurricane Harvey & Irma

Hurricanes Harvey and Irma are an important short-term driver. Both hurricanes devastated many homes which will require repair. Home Depot and Lowes should see a boost in demand for home improvement products and materials over the next three quarters. The major states impacted by the hurricanes are Florida, Texas, Puerto Rico, Louisiana, Georgia, and Alabama. Currently, Home Depot has 178 stores in Texas, 152 in Florida, 9 in Puerto Rico, 27 in Louisiana, 90 in Georgia, and 28 in Alabama, accounting for 25% of total U.S Stores.

**Figure 17: HD Quarterly Sales & Impact of Hurricane**



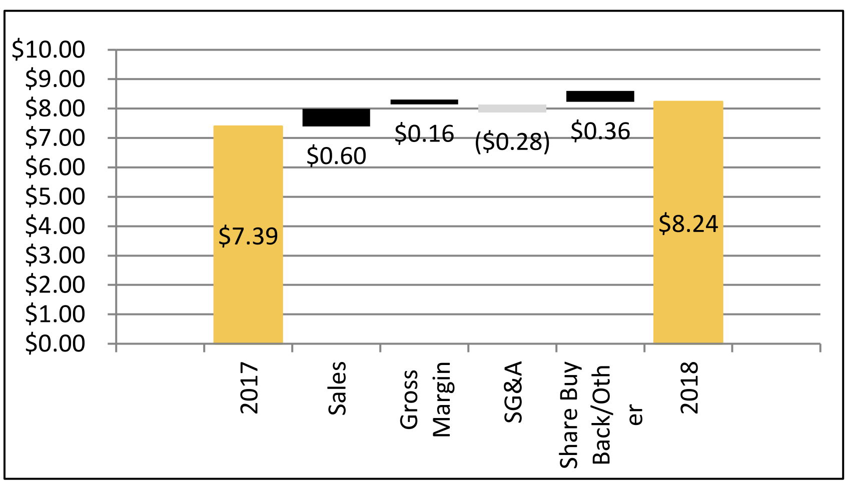

*Source: Company Reports*

New York and New Jersey suffered $62B in damage from hurricane Sandy. Home Depot had $434m in sales over 3 quarters following the hurricane, or ~70 basis points of the total damage. Hurricane Harvey and Irma are estimated to have $175B in damage, which will influence 3Q18-1Q19. Therefore, Home Depot should expect hurricanes Harvey and Irma to add ~$875m over the next three quarters, or about 1% of sales.

## Financial Analysis

HD has done exceptionally well capitalizing on the housing market recovery. I anticipate the housing recovery will continue throughout FY 2018, which will add $0.60 to earnings through growth in sales. In 3Q17, HD announced its focus on driving increased store productivity by investing in store associates and improving their omnichannel strategies. I anticipate HD will continue improving efficiency by investing in supply chain capabilities, therefore, adding $0.16 EPS through gross margin gains. However, I expect SG&A to rise as a percent of sales and cost $0.28 in EPS as the firm spends more to improve customer service. In addition, HD has had history of delivering shareholder value by raising dividends and buying back shares. I expect HD to continue this trend in FY 2018, adding $0.36 to EPS.

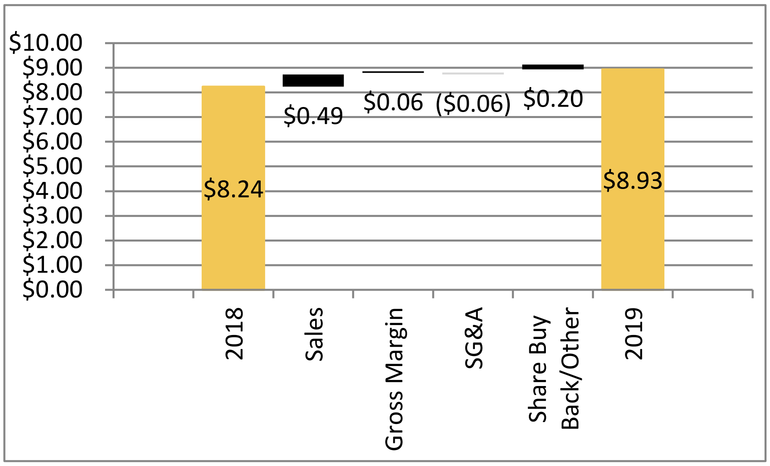
**Figure 18: Quantification of 2018 EPS drivers**




*Source: IMCP*

In FY 2019, I anticipate the housing market recovery to begin to mature but sales growth will still add $0.49 to EPS. As HD continues to adapt to the evolving retail environment and deliver capabilities through supply chain enhancement, I anticipate higher gross margins to add $0.06; however, this change will be an offset to investments in associates and stores that will rise SG&A as a percentage of sales and cost $0.06 to EPS. Finally, I expect HD to continue to buy back shares at a lower rate, adding $0.18 to EPS.

**Figure 19: Quantification of 2019 EPS drivers**




*Source: Company Reports, IMCP*

I am slightly more optimistic than consensus estimates for FY 2018 and FY 2019. I anticipate seeing continued growth in 2019 and 2020 as the housing market continues to recover.

**Figure 20: EPS Consensus vs Estimates**

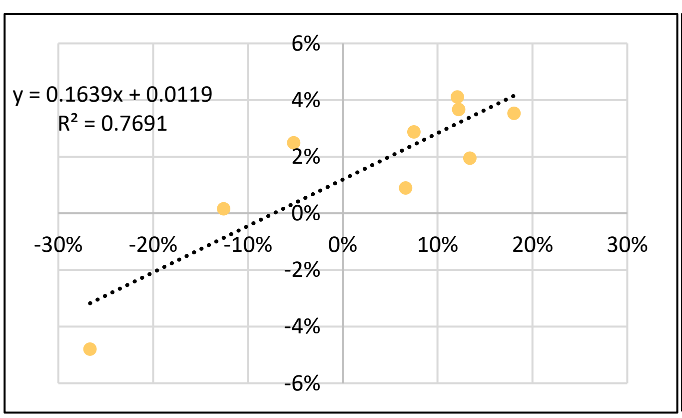
| | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|---|
| Revenues | $78,812 | $83,176 | $88,519 | $94,595 | $100,661 | $107,478 | $113,386 |
| Revenues - Consensus | | | | | $100,664 | $106,940 | $111,664 |
| YoY Growth | | 5.54% | 6.42% | 6.86% | 6.41% | 6.77% | 5.50% |
| EPS | $3.78 | $4.74 | $5.49 | $6.47 | $7.39 | $8.25 | $8.93 |
| EPS - Consensus | | | | | $7.38 | $8.24 | $8.81 |
| YoY Growth | | 25.49% | 15.74% | 17.96% | 14.14% | 11.64% | 8.24% |

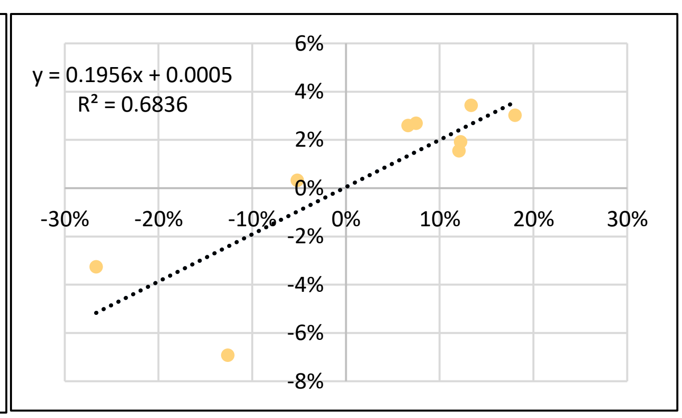
*Source: Company Reports, IMCP*

Revenues

Home Depot's sales have grown each year since the downturn in 2008. PRI expenditure has had a high correlation with transaction growth, average ticket price, and sales growth. In 2019, I expect customer transactions per store to grow 3.3% from 2018, due to improvements in product availability and a continued improvement in the overall housing market.

**Figure 21: PRI x-axis, Transaction Growth y-axis (left), PRI x-axis, Average Ticket Growth y-axis**




*Source: Bloomberg, Company Reports, IMCP*

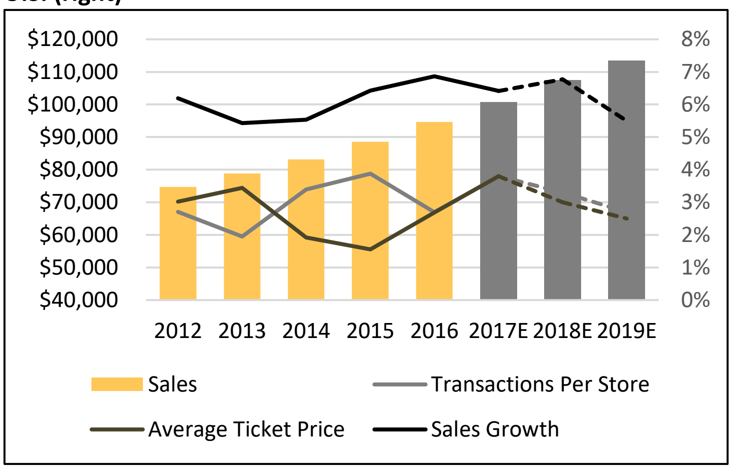
**Figure 22: EPS Consensus vs Estimates**

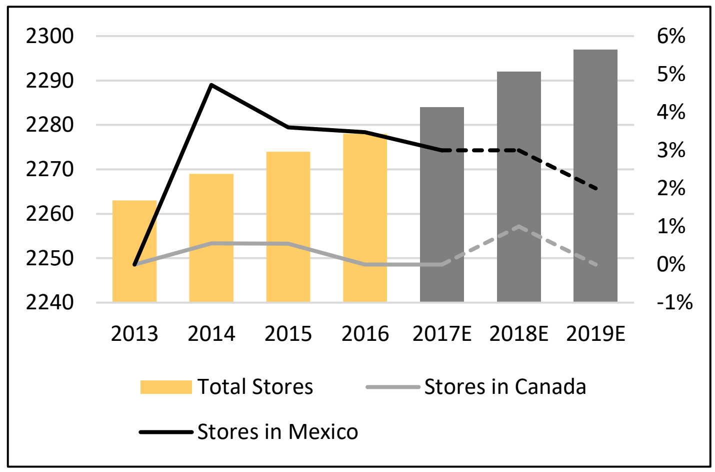
| Data | Correlation |
|---|---|
| PRI Vs Transactions | **0.88** |
| PRI Vs Averge Ticket Price | **0.83** |
| PRI Vs Sales | **0.93** |

*Source: IMCP*

In addition, I anticipate the average ticket price to grow to 3% in FY 2019, and 2% FY 2020, boosted by housing starts and new home sales. I expect the reconstruction of homes due to hurricanes to continue through FY 2019, adding to the 3% growth in the average ticket price. Lastly, I do not expect store growth in the U.S, a continuation of past trends. However, management expects to capture additional market share in Mexico as GDP improves, therefore, I forecasted store growth of 3% in FY 2019 and 2% in FY 2020 for a total of 2297 stores. Consequently, I expect sales to grow 6.77% from FY 2019 and 5.50% FY 2020.

**Figures 23 & 24: Sales Vs Transaction per store, Average ticket price, & Sales growth (left), Total stores Vs. Stores outside the U.S. (right)**




*Source: Company Reports, IMCP*

**Figure 25: Sales Assumptions**

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|---|---|
| U.S Stores | 1977 | 1977 | 1977 | 1977 | 1977 | 1979 | 1981 | 1983 |
| Growth | 0.15% | 0.00% | 0.00% | 0.00% | 0.00% | 0.10% | 0.10% | 0.10% |
| Canada | 180 | 180 | 181 | 182 | 182 | 182 | 184 | 184 |
| Growth | 0.00% | 0.00% | 0.56% | 0.55% | 0.00% | 0.00% | 1.00% | 0.00% |
| Mexico | 106 | 106 | 111 | 115 | 119 | 123 | 127 | 130 |
| Growth | 16.48% | 0.00% | 4.72% | 3.60% | 3.48% | 3.00% | 3.00% | 2.00% |
| **Total Stores** | 2263 | 2263 | 2269 | 2274 | 2278 | 2284 | 2292 | 2297 |
| Transactions/Store | 0.60 | 0.61 | 0.64 | 0.66 | 0.68 | 0.70 | 0.73 | 0.75 |
| Growth | 2.71% | 1.95% | 3.39% | 3.88% | 2.70% | 3.80% | 3.30% | 2.70% |
| Average Ticket | 54.89 | 56.78 | 57.87 | 58.77 | 60.35 | 62.64 | 64.52 | 66.14 |
| Growth | 3.02% | 3.44% | 1.92% | 1.56% | 2.69% | 3.80% | 3.00% | 2.50% |
| **Sales** | $74,754.00 | $78,812.00 | $83,176.00 | $88,519.00 | $94,595.00 | $100,661.10 | $107,477.54 | $113,385.73 |
| **Growth YoY%** | 6.19% | 5.43% | 5.54% | 6.42% | 6.86% | 6.41% | 6.77% | 5.50% |

*Source: Company Reports, IMCP*

<u>Operating Margins</u>

Most recently, management's plan for the future has become focused on three strategic priorities: enhancing the customer experience, positioning for the future, and creating value. Management expects to focus on positioning itself as a "One Home Depot," with aggressive investments in stores, associates, interconnected customer experience, and supply chain capabilities. With this plan, I project stronger top line growth throughout the next couple years at a cost of less flow-through. Management expects to add pressure in their competitive space while adding value and tapping in further into the Pro-business market share. Management expects EBIT margins to stay relatively flat ranging from 14.5%-15%, however, management has had a history of conservative projections. Therefore, I project EBIT margins to grow to the high part of the range, to 14.8% in FY 2019 and 2020.

**Figure 26: Sales Growth and Margins Assumptions**

| Income Statement | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|---|
| Sales Growth | | 5.54% | 6.42% | 6.86% | 6.41% | 6.77% | 5.50% |
| Gross margin | 34.75% | 34.81% | 34.19% | 34.16% | 34.40% | 34.40% | 34.50% |
| SG&A and other % of sales | 23.12% | 22.22% | 20.89% | 19.97% | 19.12% | 19.60% | 19.70% |
| EBIT margin | 11.63% | 12.59% | 13.30% | 14.19% | 14.60% | 14.80% | 14.80% |
| Tax rate | 36.40% | 36.40% | 36.40% | 36.30% | 36.40% | 35.00% | 35.00% |

*Source: Company Reports, IMCP*

One of HD's core values is the enhancement of customer service. HD also has the reputation of rewarding their associates with competitive wages and benefits for customer service excellence. I project HD to continue this trend, which will bring down SG&A margin to 19.60% in FY 2019 and 19.70% in 2020. In addition, HD projects to add more value in their Pro-business by expanding their portfolio of brands. Brands like Ryobi, Milwaukee Tool, and Husky have remained some of the favorite brands for contractors. I expect the expansion of brands to add selling expenses, thus affecting SG&A margins in the first year, and then improving again the following years. Lastly, I expect the tax rate to decrease to 35% FY 2019 & 2020.

Return on Equity

Home Depot has had a high ROE relative to peers in the last few years, and I anticipate ROE to continue to grow in the next two years. DuPont analysis reveals that ROE is driven primarily by average assets/ average equity, as the firm is becoming highly levered. However, even excluding leverage, it has had high returns. HD has done exceptionally well on their investment in assets, proven by a remarkable return on investment capital (ROIC). The firm appears to operate well with leverage, and I expect EBT/EBIT to decrease over time, as the company increases debt to buy back shares. Therefore, I project ROE to continue to grow in the next couple of years to 302% in FY 2019 and 564.4% by FY 2020.

**Figure 27 & 28: ROIC & ROE**

| ROIC | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|
| NOPAT to sales | 8.0% | 8.5% | 9.0% | 9.5% | 9.6% | 9.6% |
| Sales to IC ex cash | 3.00 | 3.21 | 3.43 | 3.60 | 3.69 | 3.69 |
| Total ROIC ex cash | 24.0% | 27.1% | 31.0% | 34.4% | 35.5% | 35.5% |

| ROE | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|
| EBIT / sales | 12.59% | 13.30% | 14.19% | 15.00% | 14.80% | 14.80% |
| Sales / avg assets | 2.07 | 2.16 | 2.23 | 2.29 | 2.33 | 2.34 |
| EBT / EBIT | 95.29% | 93.60% | 93.03% | 91.72% | 91.67% | 91.51% |
| Net income /EBT | 63.60% | 63.60% | 63.70% | 63.18% | 65.00% | 65.00% |
| ROA | 15.8% | 17.1% | 18.7% | 19.9% | 20.6% | 20.6% |
| Avg assets / avg ec | 3.68 | 5.24 | 7.98 | 10.67 | 14.69 | 27.43 |
| ROE | 58.09% | 89.64% | 149.44% | 212.56% | 301.95% | 564.39% |

*Source: Company Reports, IMCP*

Free Cash Flow

HD's free cash flow has remained steady over the last several years. In fiscal year 2016, the firm took out $20B in debt to finance share buy backs as management wanted to take advantage of the low interest rate environment. In addition, I expect HD to use the rest of the proceeds to increase dividends and invest in the business. In fiscal year 2019 and 2020, I project management to take on $2B of debt each year to finance its $15B share buyback and increase dividends. As mentioned previously, management expects to make significant investments in logistics, omnichannel, employees, and physical stores. Thus, I projected net fixed assets to increase in 2019 and 2020, however, operating capital is growing slower than NOPAT. In fiscal year 2019, I project free cash flow to equity to increase to $10.3B, up from $8.9b in FY 2018. 2020 FCFE is expected to be about the same as 2019.

**Figure 29: Free cash flows 2013-2019E**

| | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|---|
| NOPAT | 5,830 | 6,659 | 7,488 | 8,553 | 9,604 | 10,339 | 10,908 |
| Growth | | 14.22% | 12.45% | 14.23% | 12.28% | 7.66% | 5.50% |
| | | | | | | | |
| NOWC | 4,563 | 4,361 | 4,387 | 4,843 | 5,036 | 5,268 | 5,354 |
| Net fixed assets | 25,239 | 24,644 | 25,489 | 25,242 | 26,264 | 27,210 | 28,705 |
| Total net operating capital | $29,802.00 | $29,005.00 | $29,876.00 | $30,085.00 | $31,300.00 | $ 32,477.59 | $ 34,059.72 |
| Growth | | -2.67% | 3.00% | 0.70% | 4.04% | 3.76% | 4.87% |
| | | | | | | | |
| - Change in NOWC | | (202) | 26 | 456 | 193 | 232 | 86 |
| - Change in NFA | | (595) | 845 | (247) | 1,022 | 946 | 1,496 |
| | | | | | | | |
| FCFF | | 7,456 | 6,617 | 8,344 | 8,389 | 9,162 | 9,326 |
| Growth | | | -11.25% | 26.11% | 0.53% | 9.22% | 1.79% |
| | | | | | | | |
| - After-tax interest expense | | 314 | 479 | 596 | 795 | 862 | 926 |
| + Net new short-term and long-term debt | | 295 | 22,776 | 1,810 | 1,086 | 2,000 | 2,000 |
| | | | | | | | |
| FCFE | | 7,437 | 28,914 | 9,558 | 8,680 | 10,300 | 10,400 |
| Growth | | | 288.79% | -66.94% | -9.19% | 18.67% | 0.97% |

*Source: Company Reports, IMCP*

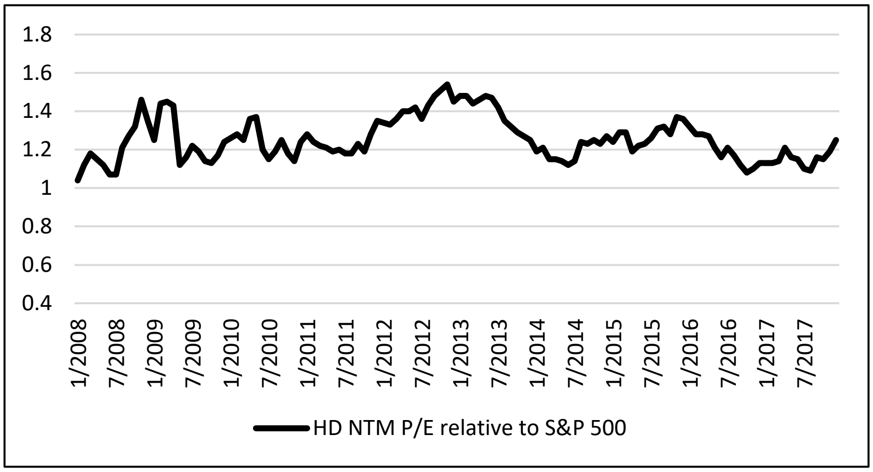
## Valuation

HD was valued using multiples and a 3-stage discounting cash flow model. Based on earnings multiples, the stock is expensive relative to the market and is worth $174. Relative valuation shows HD to be slightly overvalued based on its fundamentals versus those of its peers in the industry. Price to sales valuation yielded a target of $193, but the valuation does not incorporate the tax benefits. A detailed DCF analysis values HD at $174. Finally, I modeled a bull-bear case scenario yielding prices of $186 and $114.

Historical P/E

HD is currently trading below its five-year historical mean of 1.27 relative to the S&P 500. This could be due to Home Depot's growth slowing later in the cycle. HD's current NTM P/E is at 23.60 compared to its five-year average of 19.27. While I expect NTM P/E to return to historical averages, I do not think is likely to be the case in the short-term.

**Figure 30: HD NTM P/E Relative to S&P 500**




*Source: FactSet, IMCP*

Assuming Home Depot maintains a NTM P/E of 23.60 at the end of FY 2018, it should trade at $178 by the end of year.

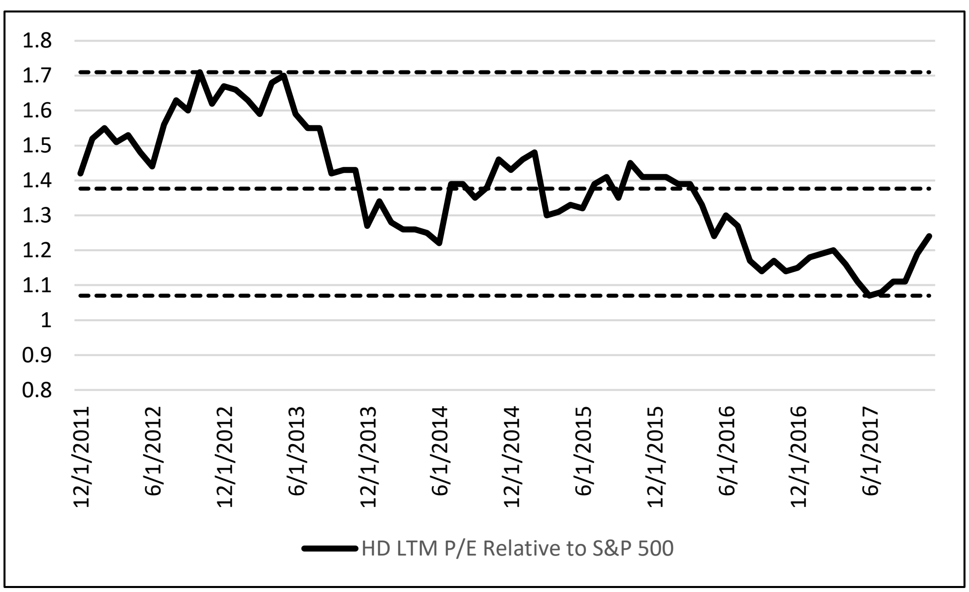
- Price = P/E x EPS = 23.60 x $8.93 = $210.75

Discounting $210.75 back to today at a 11.47% cost of equity (explained in Discounted Cash Flow section) yields a price of $183.74. Given HD's potential for continued sales growth and profitability, this seems to be an unusual low valuation.

HD's relative LTM P/E has had a historical average of 1.37. The S&P 500 has performed very well the last few years, especially in 2017. Because of this, Home Depot's relative P/E has fallen. The housing cycle is far from maturing so I expect the relative P/E to rise back to 1.40.

- Price = (S&P's P/E x LTM HD's Relative P/E) x LTM EPS = (22.5 x 1.40) x $6.47 = $203.81

**Figure 31: HD LTM P/E Relative to S&P 500 – Max, Min, & Mean**




*Source: FactSet, IMCP*

Relative Valuation

Home Depot is currently trading at a P/E higher than most of its peers, with a P/E NTM of 23.6 compared to an average of 21.7. Investors are willing to temporarily pay a premium for HD, since it has robust growth prospects and the firm has lower threats from e-commerce giants like Amazon. Similarly, HD's P/B and P/S are significantly higher than those of its peers – HD's P/B is trading at 92.47 compared to an average of 24.63, and P/S is trading at 2.34 compared to an average of 1.08. HD deserves higher P/B and P/S valuations, as ROE has been very strong and its net margins have been expanding. ROE is propped up by very low equity due to share buy backs and dividend payouts.

**Figure 32: HD Comparable Companies**

| Comp Sheet (1/22/2018) | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 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 | 2016 | 2017 | 2018 | 2019 | Pst 5yr | Beta | Equity | Rating | Yield | Payout |
| HD | HOME DEPOT INC | $201.33 | $235,103 | 1.5 | 8.3 | 23.3 | 31.3 | 48.7 | 6.2 | 13.4 | 18.4% | 18.0% | 14.1% | 11.5% | 8.5% | 21.2% | 1.02 | 954.2% | A+ | 1.88% | 46.6% |
| LOW | LOWE'S COMPANIES INC | $104.95 | $87,104 | 3.5 | 18.1 | 29.1 | 36.6 | 46.6 | 12.9 | 15.8 | 27.6% | 21.3% | 13.3% | 24.6% | 12.6% | 19.7% | 1.08 | 271.2% | A | 1.64% | 36.5% |
| WMT | WAL-MART STORES INC | $104.59 | $309,835 | 0.3 | 5.9 | 21.1 | 37.9 | 54.7 | 5.9 | 5.9 | 27.1% | -5.9% | 2.8% | 10.4% | 7.8% | -0.6% | 0.12 | 53.7% | A | 2.07% | 54.0% |
| TGT | TARGET CORP | $78.10 | $42,453 | 0.3 | 21.9 | 29.2 | 44.4 | 19.4 | 19.7 | 2.8 | 6.1% | 7.4% | -7.1% | 6.8% | 3.8% | 1.9% | 0.31 | 101.3% | B+ | 3.74% | 51.3% |
| COST | COSTCO WHOLESALE CORP | $192.29 | $84,436 | 0.4 | 2.1 | 21.3 | 27.1 | 17.5 | 3.3 | 9.9 | 10.5% | 10.5% | 14.1% | 10.9% | 7.7% | 8.8% | 0.98 | 58.5% | A | 1.05% | 31.0% |
| Average | | | $151,786 | 1.2 | 11.2 | 24.8 | 35.5 | 37.4 | 9.6 | 9.6 | 17.9% | 10.2% | 7.4% | 12.8% | 8.0% | 10.2% | 0.70 | 287.8% | | 2.07% | 43.9% |
| Median | | | $87,104 | 0.4 | 8.3 | 23.3 | 36.6 | 46.6 | 6.2 | 9.9 | 18.4% | 10.5% | 13.3% | 10.9% | 7.8% | 8.8% | 0.98 | 101.3% | | 1.88% | 46.6% |
| SPX | S&P 500 INDEX | $2,810 | | 0.4 | 4.8 | 9.7 | 13.6 | 24.1 | 5.1 | | | 0.5% | 7.5% | 18.2% | 10.5% | | | | | | |

| | | 2017 | | P/E | | | | | | | 2017 | 2017 | | | EV/ | P/CF | P/CF | Sales Growth | | | Book |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ticker | Website | ROE | P/B | 2015 | 2016 | 2017 | TTM | NTM | 2018 | 2019 | NPM | P/S | OM | ROIC | EBIT | Current | 5-yr | NTM | STM | Pst 5yr | Equity |
| HD | http://www.homedepot.com | 339.4% | 92.47 | 24.1 | 20.7 | 25.6 | 27.9 | 23.6 | 24.4 | 22.5 | 8.6% | 2.34 | 14.5% | 29.5% | 14.2 | 22.2 | 16.8 | 5.6% | 6.6% | 6.1% | $2.18 |
| LOW | http://www.lowes.com | 65.4% | 15.19 | 23.1 | 17.8 | 20.6 | 25.2 | 19.7 | 18.6 | 16.6 | 5.5% | 1.27 | 9.8% | 15.3% | 13.7 | 15.9 | 13.5 | 2.5% | 3.7% | 5.3% | $6.91 |
| WMT | http://corporate.walmart.com | 17.3% | 4.08 | 13.4 | 16.0 | 22.2 | 27.8 | 21.9 | 21.3 | 19.8 | 2.6% | 0.61 | 4.5% | 11.2% | 11.3 | 12.5 | 9.1 | 2.7% | 2.5% | 1.7% | $25.66 |
| TGT | http://www.target.com | 23.1% | 3.81 | 15.3 | 14.2 | 13.8 | 16.4 | 15.5 | 15.4 | 14.9 | 3.6% | 0.59 | 5.7% | 11.4% | 10.8 | 7.9 | 8.7 | 4.4% | 1.2% | -0.1% | $20.48 |
| COST | http://www.costco.com | 26.6% | 7.62 | 30.3 | 27.2 | 27.7 | 30.6 | 27.7 | 25.8 | 24.0 | 2.0% | 0.57 | 3.2% | 15.7% | 17.4 | 17.9 | 17.4 | 5.9% | 6.9% | 5.4% | $25.22 |
| Average | | 94.4% | 24.63 | 21.2 | 19.2 | 22.0 | 25.6 | 21.7 | 21.1 | 19.6 | 4.4% | 1.08 | 7.5% | 16.6% | 13.5 | 15.3 | 13.1 | 4.2% | 4.2% | 3.7% | |
| Median | | 26.6% | 7.62 | 23.1 | 17.8 | 22.2 | 27.8 | 21.9 | 21.3 | 19.8 | 3.6% | 0.61 | 5.7% | 15.3% | 13.7 | 15.9 | 13.5 | 4.4% | 3.7% | 5.3% | |
| spx | S&P 500 INDEX | | | 17.2 | 18.7 | 20.8 | | | 18.5 | 16.8 | | | | | | | | | | | |

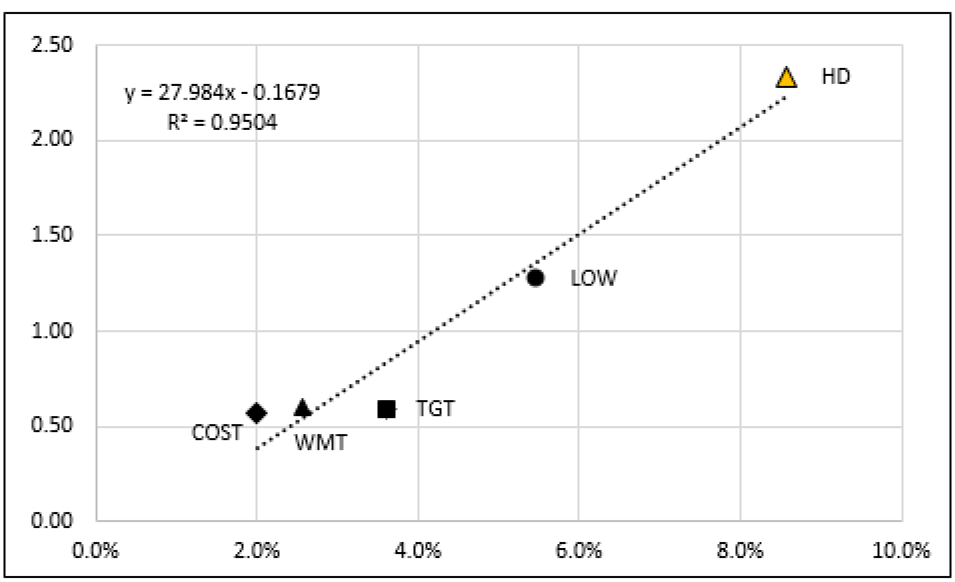
*Source: FactSet, IMCP*

A more thorough analysis of P/S and NPM is illustrated in figure 32. R-squared of the regression concludes that 95% of the firm's P/S is explained by its NPM. I project the NPM to improve in FY 2018, resulting in the following valuation:

- Appropriate P/S = Estimated 2018 NPM (8.82%)*27.984 - .1679 = 2.30
- Target Price = Estimated P/S (2.30) x 2018 SPS ($93.40) = $214.81

Discounting back to the present at an 11.47% cost of equity leads to a target price of $193.

**Figure 33: HD Comparable Companies**




*Source: FactSet, IMCP*

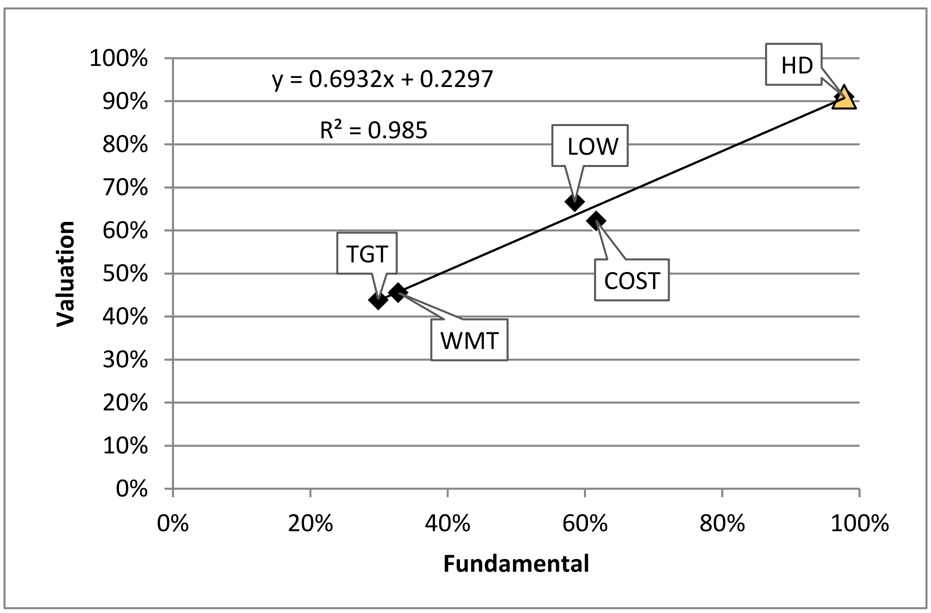
For a final comparison, I created a composite ranking of several valuation and fundamental metrics. Since the variables have different scales, each was converted to a percentile before calculating the composite score. An equal weighting of 2017 NPM and STM sales growth was compared to an equal weight composite of P/S, EV/EBIT. The regression line had an R-squared of 0.98. Based on the results, one can see that HD is on the line, so it is fairly valued based on its fundamentals.

**Figure 34: HD Comparable Companies**

| | | | | | | | Fundamentals | | Valuation | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 50.0% | 50.0% | 50.0% | 50.0% |
| | | Rank | | Target | Weighted | | 2017 | | | EV/ |
| Ticker | Name | Diff | Diff | Value | Fund | Value | NPM | STM | P/S | EBIT |
| HD | HOME DEPOT INC | 2 | 0% | 91% | 98% | 91% | 100% | 96% | 100% | 82% |
| LOW | LOWE'S COMPANIES INC | 1 | -3% | 64% | 59% | 67% | 64% | 53% | 54% | 79% |
| WMT | WAL-MART STORES INC | 4 | 0% | 46% | 33% | 46% | 30% | 36% | 26% | 65% |
| TGT | TARGET CORP | 3 | 0% | 44% | 30% | 44% | 42% | 18% | 25% | 62% |
| COST | COSTCO WHOLESALE CORP | 5 | 3% | 66% | 62% | 62% | 23% | 100% | 24% | 100% |
| Target (for single y-value factor and single or multiple x-factors) | | | | | | | | | | |
| | | | | | | Value | 8.6% | 6.6% | 2.34 | 14.2 |
| | | | | | | Max | 9% | 7% | 2.34 | 17.4 |

*Source: IMCP*

**Figure 35: HD Comparable Companies**




*Source: IMCP*

<u>Discounted Cash Flow Analysis</u>

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

For the purpose of this analysis, the company's cost of equity was calculated to be 11.47% 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 2.65%.

- A beta of 1.2 was utilized since the company has higher risk than the market. HD is a very cyclical company, risk is primarily weighted on the health of the housing market. Because of this, HD deserves a higher beta than the market.
- 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 11.47% (2.65 + 1.2 (10.0 – 2.65)).

*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 $8.59 and $9.25, respectively. Discounting these cash flows, using the cost of equity calculated above, results in a value of $15.15 per share. Thus, stage one of this discounted cash flow analysis contributes $15.15 to value.

*Stage Two* - Stage two of the model focuses on fiscal years 2020 to 2024. 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 11.47% cost of equity. I assume 5% sales growth in 2020 to remain flat through 2024. The ratio of sales to NWC will moderate from 39.40 to 37.00 in 2024, but NFA turnover will remain flat from 2020 through 2024 as a result of investments in technology and supply chain. Also, the NOPAT margin is expected to drop in 2025 from 9.6% to 9.3% in 2020. Finally, after-tax interest is expected to remain at a constant rate of 5% per year as the result of modest increases in borrowing to fund share buy backs and dividends.

**Figure 36 & 37: FCFE Estimates, EPS Estimates**

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| FCFE | $8.59 | $9.25 | $9.44 | $10.09 | $10.78 | $11.51 | $12.30 |
| *Discount factor | 0.90 | 0.80 | 0.72 | 0.65 | 0.58 | 0.52 | 0.47 |
| Discounted FCFE | $7.70 | $7.45 | $6.81 | $6.53 | $6.26 | $6.00 | $5.75 |

*Stage Three* – Net income for the years 2018 – 2024 is calculated based upon the same margin and growth assumptions used to determine FCFE in stage two. EPS is expected to grow from $8.59 in 2019 to $12.47 in 2021.

| | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|
| EPS Estimates | $8.24 | $8.93 | $9.55 | $10.21 | $10.91 | $11.67 | $12.47 |

Stage three of the model requires an assumption regarding the company's terminal price-to-earnings ratio. By 2024, the firm will be mature. It has historically traded at a premium P/E because of its high growth, so I would expect the P/E to decline. However, it is dominant and a well-run firm. Thus, a market P/E is reasonable. By 2025, the S&P 500 may trade at a normal 15-17 P/E, but the market will be slow to price this in so I assume a 21 P/E. As a result, I derive to a price of $174.

<u>Scenario Analysis</u>

Home Depot is difficult to value with accuracy because it is nearly impossible to predict the end of the housing cycle. However, Home Depot has been one of the most impressive retailers in the last five years. HD's robust margin growth and operating efficiency has challenged other competitors in the retail space, especially Lowes. Home Depot has relied primarily on increasing footprint in the stores, which has awarded them with impressive same store sales trends. In addition, HD has worked vigorously to capture the market share in the professional space. The firm has prioritized its "product authority" with the goal to attract professional customers to its stores, thus HD's acquisition of Interline Brands was a huge success. As mentioned previously, Home Depot has been able to operate more efficiently, improving gross and EBIT margins. As a result, Home Depot is on track to higher expansions in investment capital, beating down its competition. Assuming Home Depot continues to improve its efficiency, I valued Home Depot in two different scenarios:

*Bull Case*: Assuming HD continues to acquire additional market share in the professional and remodeling space while generating higher same store sales, I projected sales to grow at 6.3% perpetually. In addition, I project NOPAT margin to stabilize at 9.3% by 2025 from 9.6% in 2020. Lastly, I project share growth to drop 3% every year from 2020 through 2025. As a result, a new price target of $186 was set for HD.

*Bear Case:* Assuming the housing market deteriorates dramatically and the firm fails to capture additional market share, I projected sales to plummet to 3% continuously through 2025. As sales drop, I project operating expenses to remain relatively flat, diminishing NOPAT down to 7% by 2025. As a result, there would be lower free cash flow and lower potential for share buy backs, forecasting no activity for share buy backs. As a result, I derive to a price target of $114.

## Business Risk

Information technology

Failure of technology and security could negatively affect Home Depot. Technology failure could prevent the business to track sales, merchandise ordering, inventory replenishment, and order fulfillment. Lack of security could result in security breaches, cyber-attacks, and computer viruses, which can negatively affect customers' identity as, discovered in FY 2014.

Commodity prices

Volatile changes in commodity prices such as lumber and other raw materials can negatively impact sales and profit margins.

Relationship with suppliers

Home Depot relies heavily on its suppliers on implementing product authority and differentiation. HD works to maintain great alliances with its suppliers, as good relationships lead to sales and higher profit margins. If Home Depot fails to maintain such relationship, the firm will fail to execute product differentiation while generating sales and profits.

Uncertainty in the housing market and economic conditions

The stability of the housing market, including residential construction and home improvement markets, could adversely affect demand for Home Depot products. Negative changes in GDP could affect consumers' confidence and financial condition, causing them to not purchase home improvement products. Other economic conditions that can negatively affect the business are accessibility to mortgages, healthcare costs, interest rate fluctuations, and consumer credit.

Currency fluctuations

Currency fluctuations can negatively impact  international sales and gross margins. Nearly 10% of Home Depot's sales are derived from Canada and Mexico. Volatile changes in the U.S Dollar could potentially affect Mexican Peso and Canadian Dollar, resulting on less demand for Home Depot products.

**Appendix 1: Porter's 5 Forces**

Threat of New Entrants – Low

Barriers to entry in the home improvement industry are very extensive due to the everyday pricing that Home Depot offers. Building a mass portfolio of brands that are offered at Home Depot and Lowes would be very difficult to replicate, not to mention the brand recognition and exceptional customer service that both Lowes and Home Depot have had over the years.

Threats of Substitutes – Medium to Low

Home Depot and Lowes both offer competitive low pricing which eliminates other small merchant competitors. In addition, consumer-shopping behavior such ordering online and delivering in store have been very popular which can eliminate other small competitors from the equation.

Supplier Power – Low

Suppliers are not a threat in the home improvement industry, as most consumers prefer a one stop shop experience rather than purchasing product independently from suppliers. Suppliers may prefer strong relationship with retail stores than to sell merchandise on their own.

Buyer Power – High

Home Depot and Lowes have high buyer power over their suppliers, as there are many companies that sell building materials and tools. Usually, retailers set deals that benefit their margins but negatively affect suppliers' margins.

Intensity of Competition – Very Low

There are few stores that offer a full-service shopping experience like Home Depot and Lowes. These two giants have driven the competitive space; however, Home Depot has managed to surpass Lowes in almost every metric since the economic downturn

**Appendix 2: SWOT Analysis**

| Strengths | Weaknesses |
|---|---|
| High Operating Margins<br>High brand recognition<br>High ROIC | Dependence on U.S Market<br>Imitable Business Format<br>Increasing Debt Levels |
| **Opportunities** | **Threats** |
| Business expansion in Mexico<br>Supply chain Improvements<br>Online Presence | Currency Headwinds<br>Deteriorating Housing Market<br>New Competitor - Amazon |

### Appendix 3: Income Statement

| Income Statement (in millions) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **2013** | **2014** | **2015** | **2016** | **2017E** | **2018E** | **2019E** |
| Sales | $78,812 | $83,176 | $88,519 | $94,595 | $100,661 | $107,478 | $113,386 |
| Direct costs | 51,422 | 54,222 | 58,254 | 62,282 | 66,311 | 70,505 | 74,268 |
| Gross Margin | 27,390 | 28,954 | 30,265 | 32,313 | 34,350 | 36,972 | 39,118 |
| | | | | | | | |
| SG&A, R&D, and other | 18,224 | 18,485 | 18,491 | 18,886 | 19,250 | 21,066 | 22,337 |
| EBIT | 9,166 | 10,469 | 11,774 | 13,427 | 15,100 | 15,907 | 16,781 |
| | | | | | | | |
| Interest | 699 | 493 | 753 | 936 | 1,250 | 1,326 | 1,424 |
| EBT | 8,467 | 9,976 | 11,021 | 12,491 | 13,850 | 14,581 | 15,357 |
| | | | | | | | |
| Taxes | 3,082 | 3,631 | 4,012 | 4,534 | 5,100 | 5,103 | 5,375 |
| Net income | 5,385 | 6,345 | 7,009 | 7,957 | 8,750 | 9,478 | 9,982 |
| Basic Shares | 1,425.0 | 1,338.0 | 1,277.0 | 1,229.0 | 1,184.0 | 1,150.7 | 1,117.3 |
| | | | | | | | |
| Earnings Per Share | $3.78 | $4.74 | $5.49 | $6.47 | $7.39 | $8.24 | $8.93 |
| Dividends Per Share | $1.57 | $1.89 | $2.37 | $2.77 | $3.29 | $3.91 | $4.21 |

## Appendix 4: Balance Sheet

| Balance Sheet (in millions) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **2013** | **2014** | **2015** | **2016** | **2017E** | **2018E** | **2019E** |
| Cash | 1,929 | 1,433 | 2,216 | 2,538 | 3,000 | 2,581 | 2,520 |
| Operating assets ex cash | 13,350 | 13,869 | 14,268 | 15,186 | 15,636 | 17,519 | 18,482 |
| Operating assets | 15,279 | 15,302 | 16,484 | 17,724 | 18,636 | 20,100 | 21,002 |
| Operating liabilities | 10,716 | 10,941 | 12,097 | 12,881 | 13,600 | 14,832 | 15,647 |
| NOWC | 4,563 | 4,361 | 4,387 | 4,843 | 5,036 | 5,268 | 5,354 |
| NOWC ex cash (NWC) | 2,634 | 2,928 | 2,171 | 2,305 | 2,036 | 2,687 | 2,835 |
| NFA | 25,239 | 24,644 | 25,489 | 25,242 | 26,264 | 27,210 | 28,705 |
| *Invested capital* | *$29,802* | *$29,005* | *$29,876* | *$30,085* | *$31,300* | *$32,478* | *$34,060* |
| Marketable securities | - | - | - | - | - | - | - |
| *Total assets* | *$40,518* | *$39,946* | *$41,973* | *$42,966* | *$44,900* | *$47,309* | *$49,707* |
| Short-term and long-term deb | $33 | $328 | $23,104 | $24,914 | $26,000 | $28,000 | $30,000 |
| Other liabilities | 17,247 | 19,355 | 456 | 838 | 1,400 | 2,100 | 2,900 |
| Equity | 12,522 | 9,322 | 6,316 | 4,333 | 3,900 | 2,378 | 1,160 |
| Total supplied capital | *$29,802* | *$29,005* | *$29,876* | *$30,085* | *$31,300* | *$32,478* | *$34,060* |
| Total liabilities and equity | *$40,518* | *$39,946* | *$41,973* | *$42,966* | *$44,900* | *$47,309* | *$49,707* |

**Appendix 5: Sales Forecast**

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017E | 2018E | 2019E |
|---|---|---|---|---|---|---|---|---|
| U.S Stores | 1977 | 1977 | 1977 | 1977 | 1977 | 1979 | 1981 | 1983 |
| Growth | 0.15% | 0.00% | 0.00% | 0.00% | 0.00% | 0.10% | 0.10% | 0.10% |
| Canada | 180 | 180 | 181 | 182 | 182 | 182 | 184 | 184 |
| Growth | 0.00% | 0.00% | 0.56% | 0.55% | 0.00% | 0.00% | 1.00% | 0.00% |
| Mexico | 106 | 106 | 111 | 115 | 119 | 123 | 127 | 130 |
| Growth | 16.48% | 0.00% | 4.72% | 3.60% | 3.48% | 3.00% | 3.00% | 2.00% |
| **Total Stores** | 2263 | 2263 | 2269 | 2274 | 2278 | 2284 | 2292 | 2297 |
| Transactions/Store | 0.60 | 0.61 | 0.64 | 0.66 | 0.68 | 0.70 | 0.73 | 0.75 |
| Growth | 2.71% | 1.95% | 3.39% | 3.88% | 2.70% | 3.80% | 3.30% | 2.70% |
| Average Ticket | 54.89 | 56.78 | 57.87 | 58.77 | 60.35 | 62.64 | 64.52 | 66.14 |
| Growth | 3.02% | 3.44% | 1.92% | 1.56% | 2.69% | 3.80% | 3.00% | 2.50% |
| **Sales** | $ 74,754.00 | $ 78,812.00 | $ 83,176.00 | $ 88,519.00 | $ 94,595.00 | $ 100,661.10 | $ 107,477.54 | $113,385.73 |
| **Growth YoY%** | 6.19% | 5.43% | 5.54% | 6.42% | 6.86% | 6.41% | 6.77% | 5.50% |

## Appendix 6: Ratios

| Ratios | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Items** | **2013** | **2014** | **2015** | **2016** | **2017E** | **2018E** | **2019E** |
| **Profitability** | | | | | | | |
| Gross margin | 34.8% | 34.8% | 34.2% | 34.2% | 34.1% | 34.4% | 34.5% |
| Operating (EBIT) margin | 11.6% | 12.6% | 13.3% | 14.2% | 15.0% | 14.8% | 14.8% |
| Net profit margin | 6.8% | 7.6% | 7.9% | 8.4% | 8.7% | 8.8% | 8.8% |
| | | | | | | | |
| **Activity** | | | | | | | |
| NFA (gross) turnover | | 3.33 | 3.53 | 3.73 | 3.91 | 4.02 | 4.06 |
| Total asset turnover | | 2.07 | 2.16 | 2.23 | 2.29 | 2.33 | 2.34 |
| | | | | | | | |
| **Liquidity** | | | | | | | |
| Op asset / op liab | 1.43 | 1.40 | 1.36 | 1.38 | 1.37 | 1.36 | 1.34 |
| NOWC Percent of sales | | 5.4% | 4.9% | 4.9% | 4.9% | 4.8% | 4.7% |
| | | | | | | | |
| **Solvency** | | | | | | | |
| Debt to assets | 0.1% | 0.8% | 55.0% | 58.0% | 57.9% | 59.2% | 60.4% |
| Debt to equity | 0.3% | 3.5% | 365.8% | 575.0% | 666.7% | 1177.7% | 2586.8% |
| Other liab to assets | 42.6% | 48.5% | 1.1% | 2.0% | 3.1% | 4.4% | 5.8% |
| Total debt to assets | 42.6% | 49.3% | 56.1% | 59.9% | 61.0% | 63.6% | 66.2% |
| Total liabilities to assets | 69.1% | 76.7% | 85.0% | 89.9% | 91.3% | 95.0% | 97.7% |
| Debt to EBIT | 0.00 | 0.03 | 1.96 | 1.86 | 1.72 | 1.76 | 1.79 |
| EBIT/interest | 13.11 | 21.24 | 15.64 | 14.35 | 12.08 | 12.00 | 11.78 |
| Debt to total net op capital | 0.1% | 1.1% | 77.3% | 82.8% | 83.1% | 86.2% | 88.1% |
| | | | | | | | |
| **ROIC** | | | | | | | |
| NOPAT to sales | 7.4% | 8.0% | 8.5% | 9.0% | 9.5% | 9.6% | 9.6% |
| Sales to NWC | | 29.91 | 34.72 | 42.27 | 46.38 | 45.51 | 41.07 |
| Sales to NFA | | 3.33 | 3.53 | 3.73 | 3.91 | 4.02 | 4.06 |
| Sales to IC ex cash | | 3.00 | 3.21 | 3.43 | 3.60 | 3.69 | 3.69 |
| Total ROIC ex cash | | 24.0% | 27.1% | 31.0% | 34.4% | 35.5% | 35.5% |
| | | | | | | | |
| NOPAT to sales | 7.4% | 8.0% | 8.5% | 9.0% | 9.5% | 9.6% | 9.6% |
| Sales to EOY NWC | 29.92 | 28.41 | 40.77 | 41.04 | 49.44 | 40.00 | 40.00 |
| Sales to EOY NFA | 3.12 | 3.38 | 3.47 | 3.75 | 3.83 | 3.95 | 3.95 |
| Sales to EOY IC ex cash | 2.83 | 3.02 | 3.20 | 3.43 | 3.56 | 3.59 | 3.59 |
| Total ROIC using EOY IC ex cash | 20.9% | 24.1% | 27.1% | 31.0% | 33.9% | 34.6% | 34.6% |
| | | | | | | | |
| NOPAT to sales | 7.4% | 8.0% | 8.5% | 9.0% | 9.5% | 9.6% | 9.6% |
| Sales to EOY NOWC | 17.27 | 19.07 | 20.18 | 19.53 | 19.99 | 20.40 | 21.18 |
| Sales to EOY NFA | 3.12 | 3.38 | 3.47 | 3.75 | 3.83 | 3.95 | 3.95 |
| Sales to EOY IC | 2.64 | 2.87 | 2.96 | 3.14 | 3.22 | 3.31 | 3.33 |
| Total ROIC using EOY IC | 19.6% | 23.0% | 25.1% | 28.4% | 30.7% | 31.8% | 32.0% |
| | | | | | | | |
| **ROE** | | | | | | | |
| **5-stage** | | | | | | | |
| EBIT / sales | | 12.6% | 13.3% | 14.2% | 15.0% | 14.8% | 14.8% |
| Sales / avg assets | | 2.07 | 2.16 | 2.23 | 2.29 | 2.33 | 2.34 |
| EBT / EBIT | | 95.3% | 93.6% | 93.0% | 91.7% | 91.7% | 91.5% |
| Net income /EBT | | 63.6% | 63.6% | 63.7% | 63.2% | 65.0% | 65.0% |
| ROA | | 15.8% | 17.1% | 18.7% | 19.9% | 20.6% | 20.6% |
| Avg assets / avg equity | | 3.68 | 5.24 | 7.98 | 10.67 | 14.69 | 27.43 |
| ROE | | 58.1% | 89.6% | 149.4% | 212.6% | 301.9% | 564.4% |
| | | | | | | | |
| **3-stage** | | | | | | | |
| Net income / sales | | 7.6% | 7.9% | 8.4% | 8.7% | 8.8% | 8.8% |
| Sales / avg assets | | 2.07 | 2.16 | 2.23 | 2.29 | 2.33 | 2.34 |
| ROA | | 15.8% | 17.1% | 18.7% | 19.9% | 20.6% | 20.6% |
| Avg assets / avg equity | | 3.68 | 5.24 | 7.98 | 10.67 | 14.69 | 27.43 |
| ROE | | 58.1% | 89.6% | 149.4% | 212.6% | 301.9% | 564.4% |
| | | | | | | | |
| Payout Ratio | | 39.9% | 43.2% | 42.8% | 44.6% | 47.5% | 47.1% |
| Retention Ratio | | 60.1% | 56.8% | 57.2% | 55.4% | 52.5% | 52.9% |
| Sustainable Growth Rate | | 34.9% | 50.9% | 85.5% | 117.8% | 158.6% | 298.7% |

## Appendix 7: 3-Stage DCF Model

| Cost of equity | |
|---|---|
| Market return | 10.0% |
| - Risk free rate | 2.65% |
| = Market risk premium | 7.4% |
| * Beta | 1.20 |
| = Stock risk premium | 8.8% |
| **r = rf+ stock RP** | **11.5%** |
| **Terminal year P/E** | **22.00** |

| | Year | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| **First Stage** | | | **Second Stage** | | | | |
| Cash flows | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
| *Sales Growth* | *6.8%* | *5.5%* | *5.0%* | *5.0%* | *5.0%* | *5.0%* | *5.0%* |
| *NOPAT / S* | *9.6%* | *9.6%* | *9.56%* | *9.5%* | *9.4%* | *9.4%* | *9.3%* |
| *S / NWC* | *40.00* | *40.00* | *39.40* | *38.80* | *38.20* | *37.60* | *37.00* |
| *S / NFA (EOY)* | *3.95* | *3.95* | *3.95* | *3.95* | *3.95* | *3.95* | *3.95* |
| *S / IC (EOY)* | *3.59* | *3.59* | *3.59* | *3.59* | *3.58* | *3.57* | *3.57* |
| *ROIC (EOY)* | *34.6%* | *34.6%* | *34.3%* | *34.0%* | *33.8%* | *33.5%* | *33.2%* |
| *ROIC (BOY)* | | *36.5%* | *36.1%* | *35.8%* | *35.5%* | *35.2%* | *34.9%* |
| *Share Growth* | | *-2.9%* | *-2.5%* | *-2.5%* | *-2.5%* | *-2.5%* | *-2.5%* |
| Sales | $107,478 | $113,386 | $119,055 | $125,008 | $131,258 | $137,821 | $144,712 |
| NOPAT | $10,339 | $10,908 | $11,377 | $11,866 | $12,375 | $12,906 | $13,458 |
| *Growth* | | *5.5%* | *4.3%* | *4.3%* | *4.3%* | *4.3%* | *4.3%* |
| - Change in NWC | 651 | 148 | 187 | 200 | 214 | 229 | 246 |
| *NWC EOY* | *2687* | *2835* | *3022* | *3222* | *3436* | *3665* | *3911* |
| *Growth NWC* | | *5.5%* | *6.6%* | *6.6%* | *6.6%* | *6.7%* | *6.7%* |
| - Chg NFA | 946 | 1496 | 1435 | 1507 | 1582 | 1661 | 1745 |
| *NFA EOY* | *27,210* | *28,705* | *30,141* | *31,648* | *33,230* | *34,891* | *36,636* |
| *Growth NFA* | | *5.5%* | *5.0%* | *5.0%* | *5.0%* | *5.0%* | *5.0%* |
| Total inv in op cap | 1596 | 1643 | 1622 | 1707 | 1797 | 1891 | 1990 |
| Total net op cap | 29896 | 31540 | 33162 | 34869 | 36666 | 38557 | 40547 |
| FCFF | $8,743 | $9,264 | $9,755 | $10,159 | $10,578 | $11,015 | $11,468 |
| *% of sales* | *8.1%* | *8.2%* | *8.2%* | *8.1%* | *8.1%* | *8.0%* | *7.9%* |
| *Growth* | | *6.0%* | *5.3%* | *4.1%* | *4.1%* | *4.1%* | *4.1%* |
| *Growth* | | *7.4%* | *5.0%* | *5.0%* | *5.0%* | *5.0%* | *5.0%* |
| Debt | 28000 | 30000 | 31500 | 33075 | 34729 | 36465 | 38288 |
| FCFE w debt | $9,881 | $10,339 | $10,283 | $10,713 | $11,161 | $11,626 | $12,110 |
| *Growth* | | *4.6%* | *-0.5%* | *4.2%* | *4.2%* | *4.2%* | *4.2%* |
| FCFE | $8.59 | $9.25 | $9.44 | $10.09 | $10.78 | $11.51 | $12.30 |
| Terminal value P/E | | | | | | | |
| Net income | $9,478 | $9,982 | $10,405 | $10,845 | $11,304 | $11,781 | $12,277 |
| EPS | $8.24 | $8.93 | $9.55 | $10.21 | $10.91 | $11.67 | $12.47 |
| *Growth* | | *8.5%* | *6.9%* | *6.9%* | *6.9%* | *6.9%* | *6.9%* |
| * Terminal EPS | | | | | | | $12.47 |
| Terminal value | | | | | | | $274.35 |
| * Discount factor | | | | | | | 0.47 |
| Discounted terminal value | | | | | | | $128.29 |

| | | |
|---|---|---|
| First stage | $15.15 | Present value of first 2 year cash flow |
| Second stage | $31.36 | Present value of year 3-7 cash flow |
| Third stage | $128.29 | Present value of terminal value P/E |
| Third stage | $93.35 | Present value of terminal value constant growth |
| Value (P/E) | **$174.81** | = value at beg of fiscal 2018 |