

Krause Fund Research Fall 2019



Church & Dwight Co., Inc.
Consumer Staples

November 14, 2019
Recommendation: HOLD

Research Analysts:

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Current Price \$67.36
Target Price \$65-\$70

We recommend a **hold** rating for Church & Dwight because we anticipate the company's expected return to mirror the average industry return over our forecasted period. We do not expect the company to grow at a high enough rate to earn a **buy** rating, but we believe there is enough upside potential for share appreciation to occur in the next 12-18 months.

Drivers of Thesis

- **Strong Brand Reputation:** Church & Dwight's successful brand names have carried it through downturns and helped expand growth for acquired products.
- **Potential for Strategic Acquisition:** Church & Dwight has grown through numerous acquisitions that drive innovation. The current economic conditions make borrowing money to finance acquisitions cheaper.
- **Economic Uncertainty:** The consumer staples sector performs on par with the broad market during times of economic prosperity but tends to outperform during times of volatility.

Risk of Thesis

- **High Competition:** The household products industry is highly competitive, and higher supplier prices or lower competitor product prices will hurt Church & Dwight's margins.
- **Consumer Preferences:** If any of the company's brands reputations were to falter, this would hurt overall sales. A broader shift towards dollar or club stores would cause a similar impact.

Stock Performance Highlights

52-week high \$80.99
52-week low \$59.64
DCF/EP Intrinsic Value \$66

Share Highlights

Market Cap (B) 16.530
Shares Outstanding (M) 254.50
Beta 0.672
Dividend Yield 1.40%
EPS 2.44
P/E 27.61

Profitability (FY 2018)

Gross Margin 42.68%
Operating Margin 19.10%
Net Margin 13.71%
ROA 10.70%
ROE 24.28%

Company Overview

Church & Dwight Co., Inc. (CHD) is a major manufacturer of household products headquartered in Ewing, NJ. The company was founded in 1847 and is best known for its Arm & Hammer product line. Since then, the company has grown through numerous acquisitions and now offers products on eleven "power brands".

Earnings Per Share

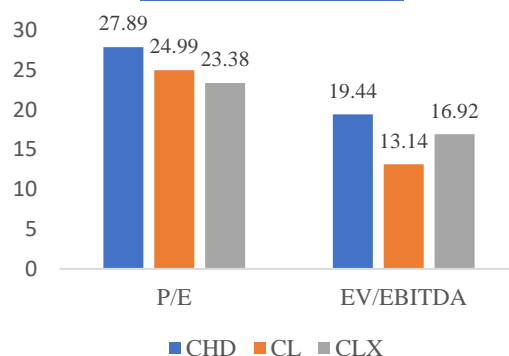
2016	2017	2018	2019E	2020E	2021E
\$1.78	\$2.97	\$2.32	\$2.01	\$2.57	\$2.71

CHD Stock Price Performance vs. S&P 500 (YTD)



Source:
Yahoo
Finance

Relative Financial Performance



Executive Summary

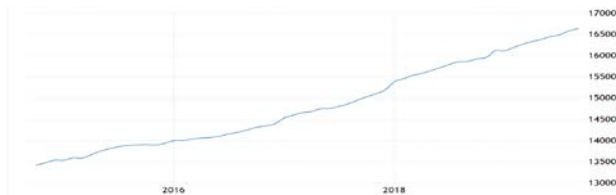
As of November 15, 2019, our analyst team is recommending a “hold” rating for Church & Dwight Co., Inc.. We believe that Church & Dwight will experience positive revenue growth, and an eventual growth in net income. While the company has upside potential to boost its growth above expectations, the investment benefits do not outweigh the risks enough to constitute a “buy” rating. We do not believe that the Krause Fund should consider investing any capital into this stock. In the current and expected economic climate, we believe the company will continue to underperform the S&P 500 index.

Through our valuation methods, we have arrived at a target price range for the stock between \$65-\$70. Our range is currently where the stock is priced at, which is \$68.39. This led us to a “hold” rating as we believe the stock is fairly priced and that there is not enough expected future value to warrant purchasing the stock in its current state.

Macroeconomic Outlook

Disposable Income

Disposable personal income throughout the United States has been constantly increasing. With persistent growth in disposable income, consumers have a greater amount of funds to pay for consumer staples products. A large driver in the growth of disposable income stems from the continued wage rate growth, which has grown at a steady rate for the past five years.



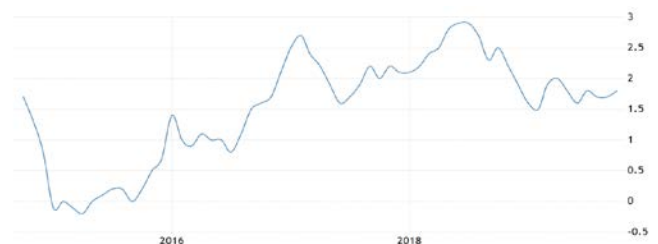
Source: Trading Economics (Historical Levels of Disposable Income)¹⁹

From 2017 to 2018, disposable income increased 5.89% and is expected to grow 4.50% from 2018 to 2019.¹⁹ Economists believe that disposable income will continue to grow but at a slower rate. Reasons for this stem from an unstable political environment as well as forecasted growth in both the inflation rates and unemployment rates. Our group expects

disposable income to grow at 3.60% in the long-term period.¹⁹

Inflation

In the past two decades, inflation has typically been positive and has continued to either grow slightly upward or remain at a flat, positive value. While positive inflation is expected, too much inflation will begin to hurt margins in this sector. However, companies in this industry tend to not get hurt by expected inflation because they are able to pass these costs off to consumers. However, unexpected inflationary bursts or increasingly rising commodity costs will make it difficult to reduce costs.



Source: Trading Economics (Historical Inflation Rate)²¹

When the Federal Reserve met on September 18, they anticipated that the inflation rate for 2019 was going to be 1.90%. This rate is expected to grow to 1.90% in 2020 and then to 2.0% in the long-term.¹⁵ If these rates end up meeting expectations, we believe that companies in this industry will continue to perform well. This can be reflected by the continuous sales growth displayed in our valuation models.²¹

GDP Growth

An increasing GDP creates many benefits for American consumers and companies. A few of these include more investments being made into improving society through reinvested capital, a higher universal standard of living, and a lower unemployment rate. Although the consumer staples sector is not very cyclical due to low price elasticity of demand, companies can expect consumers to be willing to pay more for premium brands in times of economic prosperity.³

When the Federal Reserve Bank met on September 18, they forecasted that annual GDP growth would continue to grow at a slowed rate. GDP growth for

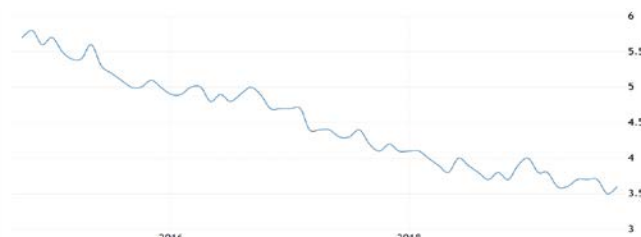
2018 was 3.0% and it is expected that in 2019 growth will be 2.20%.¹⁵ This number is projected to fall to 2.0% in 2020. Given the current economic climate, we believe that real GDP will continue to grow at 2.0% in the long-term. This rate is forecasted in our model as our company's continuous value growth rate.²⁰



Source: Trading Economics (Historical Real GDP Growth)²⁰

Unemployment

A key driving factor in the consumer staples industry stem from consumers receiving a steady income. When more of the population is employed, more disposable income is available. Although unemployment is expected to rise, our group does not believe that the forecasted rates will hurt this industry. A slight growth in unemployment can help these firms maintain positive sales growth through sales of lower priced, store-brand goods.

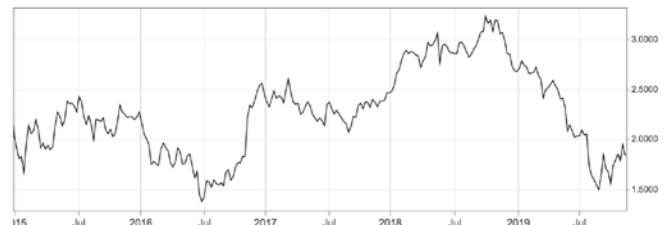


Source: Trading Economics (Historical Unemployment Rate)²²

According to the Federal Reserve, the unemployment rate will average 3.7% in 2019. This number is only ten basis points higher than the lowest rate decade as the unemployment rate has been steadily decreasing since 2010. In 2020, the rate is expected to grow to 3.70% and then grow again in 2021 to 3.80%. In our estimates, we took a conservative approach and expected that unemployment will grow to 4.10% in 2020 and grow to 4.30% in our longer-term period.²²

Interest Rates

In 2019, there has been a lot of discussion surrounding the inverted yield curve as long-term interest rates yielded lower than short-term ones. However, during Q3, the curve un-inverted and long-term interest rates remain higher. Although the interest rates are not as low as they were during Q2, the low interest environment still persists. Lower interest rates offer benefits to both consumers and companies. Consumers and companies are able to borrow money at a lower rate, driving company capital expenditure spending and consumer purchasing.¹⁷ This can be seen in our models as we forecasted a strong growth in Net PPE.



Source: CNBC (Historical 10-Year Treasury)²³

We anticipate that the ten-year treasury will remain under 2.00% as we enter into 2020. During 2020, we expect the rate to remain relatively flat and forecast it to be 2.20% entering 2021. These expectations will benefit our company and this is reflected in the valuation models surrounding our cost of capital.

Capital Markets Outlook

Although the economy has been performing incredibly well in 2019, many economists and analysts are anticipating an eventual economic downturn. While the consumer staples sector is currently up 20.0% YTD, it is still underperforming the broader S&P 500 by nearly 400 basis points.²⁵ However, this sector is consistently known to outperform the market when economic growth occurs. These predicted market conditions are reflected in our forecasts as we believe sales will grow more than the overall economy.

Industry Analysis

Industry Overview & Description

The consumer staples sector of the S&P 500 consists of companies that sell consumer necessity goods.

This sector is further divided into six industries: beverages, food & staples retailing, tobacco, personal products, food products, and household products. Historically, this sector has performed well, even in times of economic downturns, due to its defensive nature and mature company life cycles. Companies within the consumer staples industry have an average EPS of \$3.22 and an average revenue growth of 3.98%. The industry itself is widely viewed as one that is necessary to have in a portfolio, to give that safety net in times of economic downturn.^{9,26}

The household products industry is composed of a diverse group of companies that manufacture consumer goods used in and around the home. Household products companies tend to consist of large conglomerates. These companies own and distribute many different types of goods, spanning from brand-name to private label.¹³

Peer Comparison

In an industry as mature as this one, it is difficult for new and innovative firms and products to capture a large market share. Instead, these products typically get acquired by a parent company. Many companies that have grown to dominate the sector began as a single brand product and grew through strategic acquisitions.

Peer Ratio Comparison:

	CHD	CL	CLX	PG
Gross Margin	43.55%	59.32%	44.08%	50.16%
SGA to Sales	23.59%	34.29%	25.84%	28.39%
Op. Margin	19.75%	25.03%	18.25%	21.27%
Net Margin	14.24%	13.17%	12.07%	12.53%

Source: Factset¹²

Compared to other leading industry peers, Church & Dwight has the lowest gross margin, but highest net margin. This company's cost of sales is much higher than comparable companies due to variable supplier costs. However, the company is able to still maintain a high net margin by maintaining lower operating expenses in the form of rent, salaries, and office space expenses.

When looking at multiples, Church & Dwight trades at both a higher EV/EBITDA and EV/EBIT than all other comparable companies. Their P/E is also the

highest, and their dividend yield is nearly half as much. However, their long-term growth rate is among the highest in the industry.¹²

Industry Trends/Development

Because this industry is non-cyclical, all products will have a positive level of demand regardless of macroeconomic trends. Volatility in the economy may be looming soon, and this would benefit all Consumer Staples companies. In-store sales have decreased due to the growth in e-commerce. This trend will benefit companies with attractive websites and innovative products, and punish those who fail to transition to the online retailing scene. Demand for premium, more luxuries brands within the beauty and personal care segment is far higher than mass brands. Large players within the industry are pressured with the need for constant innovation and to continue lowering costs.

Mergers and Acquisitions

Mergers and Acquisitions are a key player in this industry due to their ability to alter marketing strategies and improve operating efficiencies. Management constantly searches for products that can complement current offerings. Along with the growth that comes through M&A deals, companies can also experience economies of scale in production and innovation in mass markets.¹⁴

Consistency

One of the most important things that pertains to consumer staples is the consistency within the sector. Just this last quarter, 66 out of the 105 reporting consumer staples companies beat earnings, with only 29 out of that total missing. With at least 63.0% of the industry beating expectations, the industry itself holds a lot of upside. While consumer staples do not provide the flashy allure that can come with other companies such as tech companies, they still are able to provide diversity to a portfolio while bringing with it consistency especially in time of economic downfall.²⁶

Porter's 5 Forces

Competition: *High and Increasing*

Within the beauty care space, high innovations in skin care products are critical for companies going forward. Large global brands are sustaining high innovation rates within the luxury skincare and makeup space in order to protect their competitive advantage.²⁷ By sustaining high innovation rates, it is more difficult for niche and natural brands to enter the market and compete with established brands.

Although retail grocery stores outperform all other forms of grocery shopping, in-store pricing has raised competition and it is more difficult for retailers and manufacturers to benefit. Grocers have been taking advantage of personalized store brands that are offered at a discounted price. As a result, electronic retailers like Amazon and others can more easily enter the market.

Potential New Entrants: *High and Increasing*

The potential for new entrants is high, seeing as it is a very competitive and very large industry. The biggest thing that holds potential new entrants back is the complication of brand value. With consumers being more likely to rebuy a product after previously owning it, it makes it a lot more difficult for new companies to get their foot in the door. While it is difficult to create that brand value over time, there still are new companies coming out and grabbing a share of the market, specifically related to beauty.²⁷

Power of Suppliers: *Low and Decreasing*

Within these industries, the suppliers have little power. The reasoning behind that is because there are many different suppliers, and there is a very small variance in the inputs needed. While suppliers are more likely to work with companies that provide large orders or offer them a better price, a smaller company would still be able to find a quality supplier for a reasonable price.

With consumers being more aware of what goes into their products and the impact it has on the environment, there is an additional pressure put on suppliers. That pressure is from the quality of resources they are able to provide, not only at a

reasonable price but also at a cost that doesn't hurt the environment. Church & Dwight uses suppliers that are located both in the United States and in other countries, like India, France and the UK.¹²

Power of Customers: *High and Increasing*

Consumer Staples is a non-cyclical sector meaning there are not times of the year when the sector performs better than others. Consumers purchase non-durable products often and then repurchase the same product when it is completely consumed. Due to that, the power the customers have is relatively low in one sense, seeing as they will still repurchase the product once they are out. The one power the buyer has is the ability to choose a higher quality product or brand, with the familiarity of the product. With that, they can have the power to force companies to lower prices if their product gets beat out by a more well-known brand.

Threat of Substitute Products: *High and Increasing*

Within the personal and home care industries, you have many different products that exist that can be used as substitutes with one another. Within this industry there are many "knock-off" products that come at a cheaper price but also come with a lesser quality. Due to that, the threat of substitute products is not that impactful to larger brands and companies.²⁷ They are able to still sell their products based off of the brand name and perceived quality that comes with their products.

Company Analysis

Company Overview & Description

Church & Dwight is an international company that manufactures household products. Founded in 1847, the company currently employs 4,700 individuals and is headquartered in Ewing, New Jersey. The company's consumer products are segmented into two divisions: Consumer Domestic (personal care and household products) and Consumer International (primarily personal care goods).²⁷

Over 80.0% of sales are driven from the following eleven brands: Trojan, Arm & Hammer, OxiClean, First Response, Orajel, Xtra, Spinbrush, Batiste,

Nair, Waterpik, and L'il Critter & Vitafusion. All products are sold through a broad distribution strategy that includes supermarkets, convenience stores, drugstores, etc.²⁷

In 2018, household product lines accounted for 55.0% of the company's Domestic Customer and 42.0% of their overall net sales. Arm & Hammer remains as the top brand across baking soda products, and has helped grow the brand to expand into other household products under the brand's name. Measured using net sales, laundry detergents continue to be the company's largest consumer business. Church & Dwight also currently has a net profit margin of 14.33%.⁸

Products and Markets

Church & Dwight operates thirty-six brands across four major product lines: Fabric Care, Health & Well-Being, Home Care, and Personal Care. In the Fabric Care line, the most prominent brands are Arm & Hammer and OxiClean. These brands offer products such as laundry detergents, baking sodas, and stain fighters.²⁷

Major brands within the Health & Well-Being line include Trojan, Vitafusion, and First Response. These brands offer consumer goods such as condoms, vitamins, and pregnancy/fertility products. Some Home Care brands include Arm & Hammer and other lines of Arm & Hammer (such as Clump & Seal and Clear Balance) and Kaboom. Products sold under these brands include little box odor tools, pool maintenance goods, and cleaning supplies. Brands within the Personal Care line include Nair, Orajel, and Waterpik.

Products from these brands feature oral hygiene goods, hair removal products, and toothpaste. Church & Dwight has continually made efforts to acquire other companies either in new fields, or in fields that they are already involved in.²⁷

Consumer Domestic

The company's first marketed product was baking soda, used for home baking. Today, this same product's uses have evolved to include kitchen deodorizer, scratch-free cleaners, as well as bath additives and swimming pool pH stabilizer. Along

with its signature Arm & Hammer baking soda, the Consumer Domestic segment includes all eleven power brands and is divided into household and personal care product groups.²⁷

Personal Care Products

In 2018, personal care products made up 45.0% of their Consumer Domestic sales. This equated to approximately 34.0% of the company's overall net sales. Church & Dwight's personal care line stemmed from the Arm & Hammer brand but has since expanded into oral care products, nasal moisturizers, and more through acquisitions.²⁷

Household Products

In 2018, household products made up 55.0% of their Consumer Domestic sales and 42.0% of their overall net sales. Similar to the personal care product line, this product line stems from the company's usage of Arm & Hammer's baking soda. Church & Dwight has used their trademarked technology to expand their baking soda into products such as fabric softeners, cat litter, and other household cleaning products.²⁷

Consumer International

Church & Dwight's Consumer International segment operates directly in seven other countries and in other global export markets worldwide. In 2018, this segment accounted for 17.0% of the company's total net sales, with Europe being the largest contributor. Not all eleven power brands are represented in this segment, as the products are sold uniquely in different markets.²⁷

Specialty Products Division

The company's Specialty Products Division divides sales into three product areas: Specialty Chemicals, Specialty Cleaners, and Animal Productivity. In 2018, this segment accounted for approximately 7.0% of their total net sales. Since 2015, this segment has expanded to include probiotics and prebiotics through acquisitions. This specific division has experienced a very inconsistent growth history, with it actually losing value just a few years ago. Now the division has posted positive growth over the last two years.²⁷

SWOT Analysis

Strengths

Church and Dwight has been known to have quality and reliable suppliers, giving them a consistent advantage over competitors.²⁷ The company also has strength in their brand names. Many of their products are items that are household names, so by having that they have an edge over any new products entering the industry.

In 2018, the company also has a 22.81% return on equity compared to the industry average of 14.05%. This signals that they can generate more returns on their invested dollars compared to peer companies. Church & Dwight has also shown a commitment to continually acquiring new companies and product lines that were either targeted towards improving already existing product lines, or introducing themselves into new areas. Over the last three years Church & Dwight has acquired companies targeted at improving their personal dental as well as hair product lines.^{9,10}

Recent Acquisitions

M&A	Date	Purchase Price
Flawless	March 28th 2019	\$900M
Waterpik	July 17th 2017	\$1B
Agro BioSciences	May 4th 2017	\$75M
Viviscal	January 24th 2017	\$160M

Source: Church & Dwight²⁴

Waterpik is the leading water flosser in the United States, while Flawless is leading the leading product in women's hair removal. While all acquisitions have been impactful, those two have contributed the most right away to the Church & Dwight brand.^{6, 24}

Weaknesses

While Church & Dwight has historically done well within their own core businesses' they have struggled with moving products into new segments. Another weakness that is present is the fact that they are competing in an already crowded industry. While they can partly combat that with their own established brands, there are a fair amount of other established brands within the industry. While they do

own around 15.0% of the domestic laundry aisle, one of their competitors Proctor and Gamble owns around 60.0%.^{4,9}

Opportunities

One opportunity that exists with Church and Dwight is the fact that the industry, household products, is doing very well. The industry itself posts a 26.5% year-to-date increase, which is better than the 23.0% S&P growth during the same time period. The other opportunity that exists revolves around the historical fact that consumer staples perform better in a time of high trade volatility, and given the current state of our world, we may very well be heading that way. Another opportunity that is presented to Church & Dwight is that they already have their products both in Walmart and on Amazon, which are both some of the largest retailers online and in person.^{9,12}

Threats

Threats impacting Church & Dwight include the possibility of an increasing minimum wage as well as increasing prices in China. With the current legislation planning on having minimum wages being \$15 by 2025, the increase will slowly happen over time. These impending changes would very easily hurt the company's bottom line and would either force them to innovate their products or make more strategic acquisitions in order to keep suitable margins. Along with that, they also may be forced to lower prices on products to maintain a competitive market presence. With the company only having a few suppliers outside of the United States, they could find themselves eventually having to exit markets and lose revenue from certain products. Another concern that could potentially hurt Church & Dwight is the fact some of their major competitors such as P&G have significantly more capital, so they would be able to expand and grow market share at a faster rate by reinvesting.^{9, 11}

Valuation

Revenue Decomposition

We decided to forecast revenue growth based off of Church & Dwight's three reportable sections, being Consumer Domestic, Consumer International and

Specialty. Based off historical growth patterns as well as current investments in certain areas, we forecasted that Consumer Domestic and International would grow around the same 4-7.0% range, with Consumer International growing at around a 1.50% faster rate. These two have historically grown at a more volatile rate, with the last two years showing significant jumps in growth. We predict that the growth will slow down from the previous year's growth rates of 9.63% and 14.23% due to uncertainty involving competition and suppliers' pricing.

When it comes to their specialty products, Church & Dwight has invested money recently into developing new product lines to further their revenue in this segment with their acquisition in Flawless, the market leading product in women's hair removal. The specialty revenue stream has shown high levels of volatility over the last few years, going through three years of negative growth, but eventually peaking at 17.26% growth. With the recent acquisitions, we expect CHD specialty growth to become more consistent, with an initial growth rate of 3.50% that ends at 5.50%. We made that prediction due to management's commitment to improving the specialty sector, which has been relatively new over the last few years due to strategic acquisitions.¹⁶

For our projected overall total sales growth, we kept our sales mix relatively the same due to the fact that the company is so mature. This mix involves the consumer domestic segment making up 75.0-76.0% of total sales, the consumer international totaling around 17.0-18.0%, and the specialty segment equaling the remaining 6.0-7.0%. With these mixes and each projected segment growth rate, we calculated an overall sales growth rate of around 6.0-7.0% for the next four years. Our Continuous Value growth rate is 4.64%.

Key Assumptions

Cost of Equity

We calculated a 5.032% Cost of Equity:

Beta: 0.672

Equity Risk Premium: 4.69%

Risk Free Rate: 1.88%

Cost of Equity: 5.032%

We used the Capital Asset Pricing Model (CAPM) to determine our company's cost of equity. The risk premium was derived using historical data, and the risk-free rate was derived from the 10-year treasury note yield. Our beta was calculated using three years of historical market data.

Cost of Debt

We calculated a 2.713% Cost of Debt:

Debt Rating: BBB+

Pre-tax Cost of Debt: 3.23%

Tax Rate: 20.97%

After-tax Cost of Debt: 2.553%

According to S&P Global Credit Ratings, Church & Dwight's debt rating is BBB+. Our pre-tax cost of debt was equal to a 30 year bond offered by the company. We used a marginal tax rate of 20.97%.⁷

WACC

The company's equity market value is currently valued at \$18,480 and the total value of debt on the Balance Sheet is \$2,104.30. This gives the company an 89.8% equity weight and a 10.2% debt weight, leading to a WACC of 4.78%.

Expenses

After evaluating the history of the company's Cost of Goods Sold compared to overall sales, an obvious pattern emerged. This pattern showed that this expense was equal to roughly 55% of the year's total sales. The value varied between 54-55.6% depending on the year. Because of this, we decided to keep the Cost of Goods Sold constant at 55% of net sales.

For the marketing expense, we found a historical consistency that calculated it to be around 6% of net sales. Using this knowledge, our marketing expenses remained constant at 6% in our forecasts. For the Selling, Goods, and Administrative expense, we used a constant value of 6% for the first three years, then boosted it up to 8% in the remaining forecasts. We determined this value using historical data, then increased it to accommodate for the firm's growth.

Tax Rate

Church & Dwight's tax rate for 2018 was 20.97%. Although we know this value is likely to change in the future, especially with an election cycle approaching, we kept this value constant throughout our forecasted periods. Any changes would have been too unpredictable and difficult to calculate.²

Continuing Value (CV) Growth

We used a CV growth rate of 2.00%. This value is based on future expectations as well as historical values of inflation and GDP growth. We then determined how that would pair with the company's product lines and markets. This growth rate also aligns with our expected real GDP growth rate in the longer-term.

Valuation Models

Through four valuation models, the dividend, discount model, the discounted cash flow model, the economic profit model and finally the relative valuation model. With those, we have found a price range of \$65-\$70 which is based both off of the DCF and EP models as well as the DDM model. We used the DCF and EP models as the low end of the target price, with the DDM model being used to represent the higher end of the valuation.

DCF/EP

Applying a DCF and EP valuation model, we calculated an intrinsic value of CHD stock to be \$66. This price level is almost identical to the value that CHD is currently trading at. These two models involve forecasting future cash flow amounts and discounting them to present day values. Many key assumptions, both on a macroeconomic and company specific level, that we have discussed throughout this report, were taken into account. Because we were able to control these assumptions and because we found the most success with consistency within this model, we chose to mainly forecast our target price based off of our DCF and EP model. We used the intrinsic value that we calculated as the lower baseline for our target price.

DDM

We modeled a \$71.02 adjusted value and an intrinsic value of \$73.07. Even though CHD pays out a small dividend, we still wanted to incorporate the DDM into our valuation, so we used the value we got as our high end of our target price. We still wanted our model to favor the DCF/EP model which is why we did \$65-\$70.

Relative Valuation

Within this model we used competitors within Consumer Staples, with each company presenting a wide variety of products just like Church & Dwight. One issue was that many of the companies that were similar to Church & Dwight in products were either significantly larger or smaller in terms of market cap. We decided to include a few companies with a significantly higher market cap than CHD so we could still make comparatively analyze CHD to some of its largest competitors, not just the ones of similar size. We used The Clorox Company, Colgate Palmolive, Kimberly-Clark Corporation, Proctor & Gamble, Pfizer and lastly Johnson & Johnson. The pattern that can be established from that is that the lower the price, the lower the future EPS. Church & Dwight also happens to have the highest P/E ratio both for 2019 and 2020, due to them having a low EPS and a lower stock price.

Sensitivity Analysis

Beta vs. Equity Risk Premium

We tested the sensitivity of the company's Beta because of its impact on the WACC and Cost of Equity. Both of these variables further impact the EP and DCF valuations. We calculated a three-year beta of .672 using historical data, which was similar to Beta values found on websites such as Factset.

We then tested the Equity Risk Premium, which has the impact to also affect both the WACC and Cost of Equity. In our EP and DCF models, we used 4.69% as our risk premium. We derived this number using historical data presented during class.

There is a direct relationship between an increasing Beta and the intrinsic value of our stock. However,

there is an indirect relationship for the Equity Risk Premium and the intrinsic value. With even a small change in Beta, the intrinsic value moves just over 2%. However, this movement is much smaller with changes in the Equity Risk Premium, even though these changes are relatively larger.

Beta	Equity Risk Premium					
	\$66.64	4.60	4.64	4.69	4.74	4.79
0.73	62.638	62.113	61.470	60.841	60.226	
0.71	64.357	63.816	63.152	62.504	61.870	
0.69	66.182	65.623	64.938	64.269	63.614	
0.672	67.922	67.346	66.641	65.952	65.278	
0.65	70.187	69.589	68.858	68.143	67.443	
0.63	72.391	71.773	71.015	70.275	69.551	
0.61	74.748	74.107	73.322	72.555	71.804	

WACC vs. ROIC

Similarly, we tested the sensitivity of the WACC. The WACC affects the intrinsic value through both the DCF and EP valuation models. We calculated our WACC to be 4.78%, which we feel confident in given our estimated risk premium.

Our Continuous Value ROIC was calculated as part of our forecasting. We computed a value of 31.25%, which we feel confident on based on our assumptions and the company's historical data.

An indirect relationship exists between both the WACC and ROIC compared to the intrinsic value of the stock. Even a fifty-basis point shift in ROIC does not move the stock value much, while the price is much more sensitive to changes in the WACC.

ROIC	WACC					
	\$66.64	4.70%	4.75%	4.78%	4.85%	4.90%
23.50%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317	
23.00%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317	
22.75%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317	
22.40%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317	
22.10%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317	

Marginal Tax Rate vs. Pre-Tax Cost of Debt

We tested the company's tax rate with its pre-tax cost of debt. At the company's current rate, shifting the tax rate has a very minimal effect on the intrinsic value. However, as the cost of debt rose, the value of the stock took a noticeable decline. This happens because as the company's cost of debt increases, the

Beta and WACC increase, which will lower the present value of future cash flows.

Marginal Tax Rate	Pre-Tax Cost of Debt							
	\$66.64	2.00	2.50	3.00	3.23	3.30	3.50	4.00
19.00%	68.925	67.913	66.932	66.491	66.358	65.981	65.059	
21.00%	69.027	68.036	67.076	66.644	66.513	66.144	65.239	
20.97%	69.026	68.035	67.074	66.641	66.511	66.141	65.236	
20.90%	69.022	68.030	67.069	66.636	66.505	66.136	65.230	
22.00%	69.078	68.098	67.148	66.720	66.591	66.225	65.329	

CV Growth Rate vs. WACC

We tested the Continuous Value NOPLAT growth rate, as this is a key assumption in our valuation model. Our final value was 2.0%, as this number is constant with Real GDP growth for the longer-term period. A twenty-five-basis point change in this value creates a substantial difference in the company's intrinsic value. For the WACC, a twenty-basis point change also results in a significant difference in the intrinsic value. However, this difference is not as large compared to changes in the CV Growth rate.

CV NOPLAT Growth	WACC					
	\$66.64	4.70%	4.75%	4.78%	4.85%	4.90%
2.50%	83.09268151	81.00980973	79.80391435	77.10983005	75.28164902	
2.25%	75.26608251	73.5452333	72.54535523	70.30199077	68.77210884	
2.00%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317	
1.75%	63.59251111	62.34836866	61.62158308	59.98042799	58.85280951	
1.50%	59.12372206	58.04188226	57.40860389	55.97504542	54.98720022	

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Important Disclaimer

This report was created by students enrolled in the Security Analysis (6F:112) class at the University of Iowa. The report was originally created to offer an internal investment recommendation for the University of Iowa Krause Fund and its advisory board. The report also provides potential employers and other interested parties an example of the students' skills, knowledge and abilities. Members of the Krause Fund are not registered investment advisors, brokers or officially licensed financial professionals. The investment advice contained in this report does not represent an offer or solicitation to buy or sell any of the securities mentioned. Unless otherwise noted, facts and figures included in this report are from publicly available sources. This report is not a complete compilation of data, and its accuracy is not guaranteed. From time to time, the University of Iowa, its faculty, staff, students, or the Krause Fund may hold a financial interest in the companies mentioned in this report.

Church & Dwight
Revenue Decomposition

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018	2019E	2020E	2021E	2022E	CV 2023E
Sales								
Total	\$ 3,493.10	\$ 3,776.20	\$ 4,145.90	\$ 4,402.64	\$ 4,682.47	\$ 4,966.34	\$ 5,252.34	\$ 5,496.03
Consumer Domestic	\$ 2,677.80	\$ 2,854.90	\$ 3,129.90	\$ 3,333.34	\$ 3,550.01	\$ 3,761.24	\$ 3,968.10	\$ 4,146.67
Consumer International	\$ 525.20	\$ 621.10	\$ 709.50	\$ 752.07	\$ 800.95	\$ 857.02	\$ 917.01	\$ 967.45
Specialty	\$ 290.10	\$ 300.20	\$ 306.50	\$ 317.23	\$ 331.50	\$ 348.08	\$ 367.22	\$ 381.91

All figures in millions of U.S. Dollar

Percent of Total (%)

Total	100%	100%	100%	100%	100%	100%	100%	100%
Consumer Domestic	76.66%	75.60%	75.49%	75.71%	75.81%	75.73%	75.55%	75.45%
Consumer International	15.04%	16.45%	17.12%	17.08%	17.11%	17.26%	17.46%	17.60%
Specialty	8.30%	7.95%	7.39%	7.21%	7.08%	7.01%	6.99%	6.95%

Growth (%)

Total	2.90%	8.10%	9.79%	6.19%	6.36%	6.06%	5.76%	4.64%
Consumer Domestic	3.73%	6.61%	9.63%	6.50%	6.50%	5.95%	5.50%	4.50%
Consumer International	4.83%	18.26%	14.23%	6.00%	6.50%	7.00%	7.00%	5.50%
Specialty	-7.08%	3.48%	2.10%	3.50%	4.50%	5.00%	5.50%	4.00%

Total	\$ 3,493,100.00	\$ 3,776,200.00	\$ 4,145,900.00	\$ 4,402,641.00	\$ 4,682,468.12	\$ 4,966,335.71	\$ 5,252,339.50	\$ 5,496,028.79
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Church & Dwight
Balance Sheet

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018	2019E	2020E	2021E	2022E	CV 2023E
Assets								
Cash & cash equivalents	187,800.00	278,900.00	316,700.00	90,613.96	213,056.37	480,830.59	700,656.40	833,438.58
Accounts receivable, net	287,000.00	345,900.00	345,300.00	386,992.14	419,549.14	458,392.79	489,518.04	519,924.32
Inventories	258,200.00	330,700.00	382,800.00	360,228.67	390,786.90	426,912.11	456,012.31	484,327.15
Deferred income taxes	-	-	-	0.00	0.00	0.00	0.00	-
Other current assets	23,800.00	44,700.00	33,400.00	34,068.00	34,749.36	35,444.35	36,153.23	36,876.30
Total current assets	756,800.00	1,000,200.00	1,078,200.00	871,902.77	1,058,141.77	1,401,579.83	1,682,339.98	1,874,566.35
Gross property, plant & equipment	1,165,300.00	1,226,400.00	1,267,200.00	1,349,568.00	1,437,289.92	1,530,713.76	1,630,210.16	1,736,173.82
Less accumulated depreciation & amortization	576,700.00	618,700.00	669,000.00	715,830.00	765,938.10	819,553.77	876,922.53	920,768.66
Property, plant & equipment, net	588,600.00	607,700.00	598,200.00	633,738.00	671,351.82	711,160.00	753,287.63	815,405.16
Equity investment in affiliates	8,500.00	9,300.00	8,500.00	10,369.05	11,028.09	11,696.66	12,370.25	12,944.18
Trade names & other intangibles, net	1,431,800.00	2,320,500.00	2,274,000.00	2,227,500.00	2,181,000.00	2,134,500.00	2,088,000.00	2,041,500.00
Goodwill	1,444,100.00	1,958,900.00	1,992,900.00	1,992,900.00	1,992,900.00	1,992,900.00	1,992,900.00	1,992,900.00
Other assets	124,300.00	118,200.00	117,400.00	119,748.00	122,142.96	124,585.82	127,077.54	129,619.09
Total assets	4,354,100.00	6,014,800.00	6,069,200.00	5,856,157.82	6,036,564.65	6,376,422.30	6,655,975.39	6,866,934.78
Short-term borrowings	426,800.00	270,900.00	1,800.00	1,836.00	1,872.72	1,910.17	1,948.38	1,987.35
Current portion of long-term debt	-	-	596,500.00	536,850.00	483,165.00	434,848.50	391,363.65	352,227.29
Trade accounts payable	331,600.00	398,900.00	430,200.00	357,548.31	321,132.45	340,677.22	363,222.92	343,572.16
Accrued marketing & promotion costs	82,000.00	108,400.00	116,200.00	133,282.17	141,125.10	144,947.98	151,877.01	164,846.54
Accrued wages & related benefit costs	73,200.00	61,800.00	84,200.00	80,859.95	87,525.01	92,054.38	100,757.19	109,662.54
Accrued profit sharing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
Other accrued current liabilities	82,100.00	90,000.00	94,500.00	80,301.92	92,730.35	102,700.78	113,649.11	124,503.44
Accounts payable & accrued expenses	568,900.00	659,100.00	725,100.00	605,946.19	642,512.91	680,380.36	729,506.23	742,584.69
Income taxes payable	6,200.00	5,000.00	2,900.00	4,005.46	5,039.47	5,312.56	5,553.49	5,633.66
Total current liabilities	1,001,900.00	935,000.00	1,326,300.00	1,148,637.64	1,132,590.10	1,122,451.59	1,128,371.75	1,102,432.98
Total long term debt	693,400.00	2,103,400.00	2,105,300.00	2,104,700.00	2,103,805.00	2,102,536.08	2,100,789.86	\$2,098,431.19
Less: current maturities	-	-	596,500.00	536,850.00	483,165.00	434,848.50	391,363.65	352,227.29
Long-term debt	693,400.00	2,103,400.00	1,508,800.00	1,567,850.00	1,620,640.00	1,667,687.58	1,709,426.21	1,746,203.91
Deferred income taxes	512,200.00	561,200.00	576,400.00	422,520.00	371,491.63	470,350.34	495,838.51	518,325.61
Deferred & other long-term liabilities	168,700.00	197,200.00	203,900.00	215,934.86	234,123.41	253,283.12	273,121.65	285,793.50
Pension, postretirement & postemployment benefits	-	-	-	-	-	-	-	-
Total liabilities	2,376,200.00	3,796,800.00	3,615,400.00	3,354,942.50	3,358,845.13	3,513,772.64	3,606,758.12	3,652,755.98
Common stock	292,800.00	292,800.00	292,800.00	292,800.00	292,800.00	292,800.00	292,800.00	292,800.00
Additional paid-in capital	251,400.00	264,600.00	280,800.00	283,608.00	286,444.08	289,308.52	292,201.61	295,123.62
Common Stock/Additional paid-in capital	544,200.00	557,400.00	573,600.00	576,408.00	579,244.08	582,108.52	585,001.61	587,923.62
Retained earnings (accumulated deficit)	2,926,000.00	3,479,000.00	3,832,600.00	4,077,207.32	4,450,875.43	4,832,941.14	5,216,615.67	5,578,655.18
Foreign currency adjustments	(50,000.00)	(31,600.00)	(42,500.00)	(42,500.00)	(42,500.00)	(42,500.00)	(42,500.00)	(42,500.00)
Defined benefit plans	(13,200.00)	(600.00)	900.00	900.00	900.00	900.00	900.00	900.00
Derivative agreements	(600.00)	(4,200.00)	(12,000.00)	(12,000.00)	(12,000.00)	(12,000.00)	(12,000.00)	(12,000.00)
Accumulated other comprehensive income (loss)	(63,800.00)	(36,400.00)	(53,600.00)	(53,600.00)	(53,600.00)	(53,600.00)	(53,600.00)	(53,600.00)
Common stock in treasury, at cost	1,428,500.00	1,782,000.00	1,898,800.00	2,098,800.00	2,298,800.00	2,498,800.00	2,698,800.00	2,898,800.00
Total Church & Dwight Co., Inc. stockholders' equity	1,977,900.00	2,218,000.00	2,453,800.00	2,501,215.32	2,677,719.51	2,862,649.66	3,049,217.27	3,214,178.80
Total Liabilities & Stockholders' Equity	4,354,100.00	6,014,800.00	6,069,200.00	5,856,157.82	6,036,564.65	6,376,422.30	6,655,975.39	6,866,934.78

Church & Dwight*Income Statement*

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018	2019E	2020E	2021E	2022E	CV 2023E
Scale	Thousands	Thousands	Thousands					
Net sales	3,493,100.00	3,776,200.00	4,145,900.00	4,402,641.00	4,682,468.12	4,966,335.71	5,252,339.50	5,496,028.79
Cost of sales (less depreciation)	1,902,500.00	2,046,600.00	2,305,100.00	2,421,452.55	2,575,357.46	2,731,484.64	2,888,786.72	3,022,815.84
Gross profit	1,590,600.00	1,729,600.00	1,840,800.00	1,981,188.45	2,107,110.65	2,234,851.07	2,363,552.77	2,473,212.96
Depreciation and Amortization	107,600.00	125,400.00	141,100.00	115,509.13	149,218.93	168,127.44	186,248.87	214,139.60
Marketing expenses	427,200.00	454,200.00	483,200.00	512,192.00	542,923.52	575,498.93	610,028.87	646,630.60
Selling, general & administrative expenses	439,200.00	542,700.00	565,900.00	605,513.00	647,898.91	699,730.82	755,709.29	816,166.03
Income (loss) from operations	724,200.00	732,700.00	791,700.00	747,974.32	916,288.22	959,621.32	997,814.62	1,010,416.33
Equity in earnings (losses) of affiliates	9,200.00	10,800.00	9,200.00	9,000.00	9,000.00	9,000.00	9,000.00	9,000.00
Investment earnings	1,700.00	2,100.00	1,900.00	2,000.00	2,000.00	2,000.00	2,000.00	2,000.00
Other income (expense), net	(1,500.00)	(300.00)	(3,900.00)	0.00	0.00	0.00	0.00	0.00
Interest expense	27,700.00	52,600.00	79,400.00	126,282.00	126,228.30	126,152.17	126,047.39	125,905.87
Income before income taxes	705,900.00	692,700.00	719,500.00	632,692.32	801,059.92	844,469.15	882,767.23	895,510.46
Income taxes	246,900.00	(50,700.00)	150,900.00	132,675.58	167,982.27	177,085.18	185,116.29	187,788.54
Net income (loss)	459,000.00	743,400.00	568,600.00	500,016.74	633,077.66	667,383.97	697,650.94	707,721.91

Church & Dwight
Cash Flow Statement

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018
Cash From Operating Activities			
Net income (loss)	459,000.00	743,400.00	568,600.00
Depreciation expense	59,700.00	60,900.00	64,400.00
Amortization expense	47,900.00	64,500.00	76,700.00
Deferred income taxes	24,900.00	(237,600.00)	11,100.00
Loss on extinguishment of debt	-	-	-
Equity in net losses (earnings) of affiliates	(9,200.00)	(10,800.00)	(9,200.00)
Distributions from unconsolidated affiliates	9,000.00	10,100.00	10,100.00
Non cash compensation expense	16,000.00	18,100.00	23,300.00
Non-cash pension settlement charge	0.00	31,700.00	-
Other asset write-offs	-	-	-
Asset impairment charge & other asset write-offs	5,600.00	2,100.00	3,600.00
Other adjustments	(1,800.00)	(1,700.00)	1,000.00
Accounts receivable	(12,700.00)	(9,700.00)	(3,400.00)
Inventories	19,200.00	(25,200.00)	(55,100.00)
Other current assets	2,100.00	10,200.00	18,900.00
Accounts payable & accrued expenses	50,500.00	30,300.00	54,900.00
Income taxes payable	32,800.00	(11,200.00)	(6,100.00)
Excess tax benefit on stock options exercised	(30,000.00)	0.00	-
Other operating assets & liabilities, net	(17,700.00)	6,400.00	4,800.00
Net cash flows from operating activities	655,300.00	681,500.00	763,600.00
Cash From Investing Activities			
Proceeds from sale of assets	-	-	-
Additions to property, plant & equipment	(49,800.00)	(45,000.00)	(60,400.00)
Acquisitions	(305,300.00)	(1,260,000.00)	(49,800.00)
Investment interest in joint venture	-	-	-
Proceeds from note receivable	-	-	-
Other investing activities	500.00	1,600.00	(1,900.00)
Net cash flows from investing activities	(354,600.00)	(1,303,400.00)	(112,100.00)
Cash From Financing Activities			
Long-term debt borrowings	-	1,621,300.00	-
Long-term debt repayments	0.00	(200,000.00)	-
Short-term debt borrowings (repayments)	68,900.00	(155,800.00)	(268,800.00)
Proceeds from stock options exercised	50,500.00	42,100.00	76,600.00
Excess tax benefit on stock options exercised	30,000.00	0.00	-
Payment of cash dividends	(183,000.00)	(190,400.00)	(213,300.00)
Purchase of treasury stock	(400,000.00)	(400,000.00)	(200,000.00)
Deferred financing costs	0.00	-	-
Deferred financing & other financing activities	-	(18,300.00)	(3,500.00)
Other financing activities	(6,000.00)	-	-
Net cash flows from financing activities	(439,600.00)	698,900.00	(609,000.00)
Effect of exchange rate changes on cash & cash equivalents	(3,300.00)	14,100.00	(4,700.00)
Change in Cash	(142,200.00)	91,100.00	37,800.00
Beginning Cash	330,000.00	187,800.00	278,900.00
Ending Cash	187,800.00	278,900.00	316,700.00

Church & Dwight*Cash Flow Statement Forecast*

<i>Fiscal Years Ending Dec. 30</i>	2019	2020	2021	2022	CV 2023
Cash From Operating Activities					
Net Income	500,016.74	633,077.66	667,383.97	697,650.94	707,721.91
<i>Adjustments to reconcile:</i>					
Add: Depreciation & Amortization	115,509.13	149,218.93	168,127.44	186,248.87	214,139.60
Amortization Expense					
Allowance for Doubtful Accounts	(2,631.60)	(2,854.83)	(3,073.17)	(3,246.56)	-3428.367
Changes in Deferred Taxes	(153,880.00)	(51,028.37)	98,858.72	25,488.16	22,487.10
<i>Changes in Working Capital Accounts</i>					
Changes in Receivables	(41,692.14)	(32,557.00)	(38,843.64)	(31,125.25)	(30,406.28)
Changes in Inventories	22,571.33	(30,558.23)	(36,125.20)	(29,100.20)	(28,314.84)
Changes in Other Current Assets	668.00	681.36	694.99	708.89	723.06
Changes in Trade Accounts Payable	(72,651.69)	(36,415.86)	19,544.76	22,545.71	(19,650.76)
Changes in Accrued Wages & Promotion C	(3,340.05)	6,665.06	4,529.38	8,702.80	8,905.35
Changes in Income Taxes Payable	1,105.46	1,034.01	273.09	240.93	80.17
Net Cash from Operating Activities	552,353.37	819,564.04	981,223.59	934,168.53	1,009,583.55
Cash From Investing Activities					
Capital Expenditures	(82,368.00)	(87,721.92)	(93,423.84)	(99,496.39)	(105,963.66)
Capitalization of Intangible Assets	(46,500.00)	(46,500.00)	(46,500.00)	(46,500.00)	(46,500.00)
Change in Other Assets	2,348.00	2,394.96	2,442.86	2,491.72	2,541.55
Net Cash Paid to Investing Activities	(131,216.00)	(136,616.88)	(142,366.70)	(148,488.11)	(155,005.21)
Cash From Financing Activities					
Cash Paid to Dividends	235,981.15	259,409.55	285,318.27	313,976.41	345,682.41
Share Repurchases	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00
Changes in LT Debt	59,050.00	52,790.00	47,047.58	41,738.63	36,777.70
Payments of Dividends	152,192	48,305.21	38,716.8	10,139.58	139,336.06
Net Cash Paid to Financing Activities	647,223.41	560,504.76	571,082.67	565,854.61	721,796.16
Change in Cash	(226,086.04)	122,442.41	267,774.22	219,825.81	132,782.18
Beginning Cash	316,700.00	90,613.96	213,056.37	480,830.59	700,656.40
Ending Cash	90,613.96	213,056.37	480,830.59	700,656.40	833,438.58

Church & Dwight
Key Management Ratios

<i>Fiscal Years Ending</i>	2016	2017	2018	2019E	2020E	2021E	2022E	CV 2023E
<i>Liquidity Ratios</i>								
Quick Ratio	0.47	0.67	0.50	0.43	0.56	0.84	1.05	1.23
Days Sales Outstanding	29.99	33.43	30.40	32.08	32.70	33.69	34.02	34.53
Current Ratio	0.76	1.07	0.81	0.78	0.75	0.82	0.87	0.94
<i>Activity or Asset-Management Ratios</i>								
Inventory Turnover	7.37	6.19	6.02	6.72	6.59	6.40	6.33	6.24
Days Sales in Inventory	49.54	58.98	60.61	54.30	55.39	57.05	57.62	58.48
Receivables Turnover	12.40	11.93	12.00	12.02	11.61	11.31	11.08	10.89
<i>Financial Leverage Ratios</i>								
Debt to Equity	1.08	1.10	1.20	1.71	1.47	1.34	1.25	1.23
Equity Multiplier	2.20	2.71	2.47	2.35	2.17	2.06	1.95	1.88
<i>Profitability Ratios</i>								
Gross Margin	45.54%	45.80%	44.40%	45.00%	45.00%	45.00%	45.00%	45.00%
Return on Assets	10.54%	12.36%	9.37%	8.51%	10.87%	11.32%	11.71%	11.73%
Return on Equity	23.21%	33.52%	23.17%	19.99%	23.64%	23.31%	22.88%	22.02%
<i>Payout Policy Ratios</i>								
Dividend Payout Ratio	39.87%	25.61%	37.51%	47.19%	40.98%	42.75%	45.00%	48.84%

Church & Dwight*Common Size Income Statement*

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018	2019E	2020E	2021E	CV 2022E	2023E
Net sales	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
Cost of sales	54.46%	54.20%	55.60%	55.00%	55.00%	55.00%	55.00%	55.00%
Gross profit	45.54%	45.80%	44.40%	45.00%	45.00%	45.00%	45.00%	45.00%
Depreciation and Amortization	3.08%	3.32%	3.40%	2.62%	3.19%	3.39%	3.55%	3.90%
Marketing expenses	12.23%	12.03%	11.65%	11.63%	11.59%	11.59%	11.61%	11.77%
Selling, general & administrative expenses	12.57%	14.37%	13.65%	13.75%	13.84%	14.09%	14.39%	14.85%
Income (loss) from operations	20.73%	19.40%	19.10%	16.99%	19.57%	19.32%	19.00%	18.38%
Equity in earnings (losses) of affiliates	0.26%	0.29%	0.22%	0.20%	0.19%	0.18%	0.17%	0.16%
Investment earnings	0.05%	0.06%	0.05%	0.05%	0.04%	0.04%	0.04%	0.04%
Other income (expense), net	-0.04%	-0.01%	-0.09%	0.00%	0.00%	0.00%	0.00%	0.00%
Interest expense	0.79%	1.39%	1.92%	2.87%	2.70%	2.54%	2.40%	2.29%
Income before income taxes	20.21%	18.34%	17.35%	14.37%	17.11%	17.00%	16.81%	16.29%
Income taxes	7.07%	-1.34%	3.64%	3.01%	3.59%	3.57%	3.52%	3.42%
Net income (loss)	13.14%	19.69%	13.71%	11.36%	13.52%	13.44%	13.28%	12.88%

Church & Dwight
Common Size Balance Sheet

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018	2019E	2020E	2021E	2022E	CV 2023E
Assets								
Cash & cash equivalents	5.38%	7.39%	7.64%	2.56%	4.55%	9.68%	13.34%	15.16%
Accounts receivable, net	8.22%	9.16%	8.33%	8.79%	9.53%	10.41%	11.12%	9.46%
Inventories	7.39%	8.76%	9.23%	8.18%	8.88%	9.70%	10.36%	8.81%
Deferred income taxes	0.00%	0.00%	0%	0.00%	0.00%	0.00%	0.00%	0.00%
Other current assets	0.68%	1.18%	0.81%	0.77%	0.79%	0.81%	0.82%	0.67%
Total current assets	21.67%	26.49%	26.01%	20.30%	19.19%	20.91%	22.30%	18.94%
Gross property, plant & equipment	33.36%	32.48%	30.57%	30.65%	32.65%	34.77%	37.03%	30.65%
Less accumulated depreciation & amort	16.51%	16.38%	16.14%	16.26%	17.40%	18.62%	19.92%	16.75%
Property, plant & equipment, net	16.85%	16.09%	14.43%	14.39%	15.25%	16.15%	17.11%	14.84%
Equity investment in affiliates	0.24%	0.25%	0.21%	0.24%	0.25%	0.27%	0.28%	0.43%
Trade names & other intangibles, net	40.99%	61.45%	54.85%	50.59%	49.54%	48.48%	47.43%	37.15%
Goodwill	41.34%	51.87%	48.07%	45.27%	42.56%	40.13%	37.94%	36.26%
Other assets	3.56%	3.13%	2.83%	2.72%	2.77%	2.83%	2.89%	2.36%
Total assets	124.65%	159.28%	146.39%	133.51%	132.27%	133.91%	135.27%	109.78%
Liabilities and Equity								
Short-term borrowings	12.22%	7.17%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%
Current portion of long-term debt	0.00%	0.00%	14.39%	12.19%	10.97%	9.88%	8.89%	6.41%
Trade accounts payable	9.49%	10.56%	10.38%	8.12%	7.29%	7.74%	8.25%	6.25%
Accrued marketing & promotion costs	2.35%	2.87%	2.80%	3.03%	3.21%	3.29%	3.45%	3.00%
Accrued wages & related benefit costs	2.10%	1.64%	2.03%	1.84%	1.99%	2.09%	2.29%	2.00%
Accrued profit sharing	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Other accrued current liabilities	2.35%	2.38%	2.28%	1.82%	2.11%	2.33%	2.58%	2.27%
Accounts payable & accrued expenses	16.29%	17.45%	17.49%	13.76%	14.59%	15.45%	16.57%	13.51%
Income taxes payable	0.18%	0.13%	0.07%	0.09%	0.11%	0.12%	0.13%	0.10%
Total current liabilities	28.68%	24.76%	31.99%	26.09%	25.73%	25.49%	25.63%	20.06%
Total long term debt	19.85%	55.70%	50.78%	47.81%	47.79%	47.76%	47.72%	38.18%
Less: current maturities	0.00%	0.00%	14.39%	12.19%	10.97%	9.88%	8.89%	6.41%
Long-term debt	19.85%	55.70%	36.39%	35.61%	36.81%	37.88%	38.83%	31.77%
Deferred income taxes	14.66%	14.86%	13.90%	9.60%	8.44%	10.68%	11.26%	9.43%
Deferred & other long-term liabilities	4.83%	5.22%	4.92%	4.90%	5.32%	5.75%	6.20%	5.20%
Pension, postretirement & postemployr	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total liabilities	68.03%	100.55%	87.20%	76.20%	76.29%	79.81%	81.92%	66.46%
Common stock	8.38%	7.75%	7.06%	6.65%	6.65%	6.65%	6.65%	5.33%
Additional paid-in capital	7.20%	7.01%	6.77%	6.44%	6.51%	6.57%	6.64%	5.37%
Common Stock/Additional paid-in	15.58%	14.76%	13.84%	13.09%	13.16%	13.22%	13.29%	10.70%
Retained earnings (accumulated deficit)	83.77%	92.13%	92.44%	92.61%	101.10%	109.77%	118.49%	101.50%
Foreign currency adjustments	-1.43%	-0.84%	-1.03%	-0.97%	-0.97%	-0.97%	-0.97%	-0.77%
Defined benefit plans	-0.38%	-0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%
Derivative agreements	-0.02%	-0.11%	-0.29%	-0.27%	-0.27%	-0.27%	-0.27%	-0.22%
Accumulated other comprehensive inco	-1.83%	-0.96%	-1.29%	-1.22%	-1.22%	-1.22%	-1.22%	-0.98%
Common stock in treasury, at cost	40.89%	47.19%	45.80%	47.67%	52.21%	56.76%	61.30%	52.74%
Total Church & Dwight Co., Inc. stockh	56.62%	58.74%	59.19%	56.81%	60.82%	65.02%	69.26%	58.48%
Noncontrolling interest	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total stockholders' equity	0.00%	58.74%	59.19%	-	-	-	-	-

Church & Dwight

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

<i>Fiscal Years Ending</i>	2019E	2020E	2021E	2022E	CV 2023E
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EPS	\$ 2.03	\$ 2.57	\$ 2.71	\$ 2.83	\$ 2.87
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Key Assumptions

CV growth	2.00%	0.03
CV ROE	22.88%	
Cost of Equity	5.03%	

Future Cash Flows

P/E Multiple (CV Year)					30.10
EPS (CV Year)				\$	2.87
Future Stock Price					<u>\$86.35</u>
Dividends Per Share	\$0.96	\$1.05	\$1.16	\$1.27	
Future Cash Flows	<u>\$0.96</u>	<u>\$1.05</u>	<u>\$1.16</u>	<u>\$1.27</u>	
Discount Factor	1	2	3	4	4
Discounted Cash Flows	\$0.91	\$0.95	\$1.00	\$0.16	\$ 70.954

Intrinsic Value \$ **73.07**

Price Today \$ **71.02**

VALUATION OF OPTIONS GRANTED IN ESOP

Ticker Symbol	CHD
Current Stock Price	\$68.39
Risk Free Rate	2.90%
Current Dividend Yield	1.70%
Annualized St. Dev. of Stock Returns	17.10%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
Range 1	23,000	17.04	1.90	\$ 57.03	\$ 1,311,734
Range 2	14,000	26.92	3.40	\$ 46.93	\$ 656,953
Range 3	35,000	32.73	4.70	\$ 41.24	\$ 1,443,445
Range 4	0	36.06	5.80	\$ 38.16	\$-
Range 5	24,000	41.88	6.30	\$ 33.53	\$ 804,823
Range 6	14,000	49.15	6.70	\$ 28.36	\$ 397,021
Range 7	36,000	51.93	8.70	\$ 27.14	\$ 977,071
Range 8	1,000	59.42	9.80	\$ 23.47	\$ 23,472
Total	147,000	\$ 37.66	5.60	\$ 36.55	\$ 5,614,519

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

Number of Options Outstanding (shares):	14,700
Average Time to Maturity (years):	5.60
Expected Annual Number of Options Exercised:	2,623

Current Average Strike Price:	\$ 37.66
Cost of Equity:	5.03%
Current Stock Price:	\$68.39

	2019E	2020E	2021E	2022E	CV 2023E
Increase in Shares Outstanding:	2,623	2,623	2,623	2,623	2,623
Average Strike Price:	\$ 37.66	\$ 37.66	\$ 37.66	\$ 37.66	\$ 37.66
Increase in Common Stock Account:	98,794	98,794	98,794	98,794	98,794
Change in Treasury Stock	200,000	200,000	200,000	200,000	200,000
Expected Price of Repurchased Shares:	\$ 68.39	\$ 71.83	\$ 75.45	\$ 79.24	\$ 83.23
Number of Shares Repurchased:	2,924	2,784	2,651	2,524	2,403
Shares Outstanding (beginning of the year)	246,886	246,584	246,423	246,395	246,494
Plus: Shares Issued Through ESOP	2,623	2,623	2,623	2,623	2,623
Less: Shares Repurchased in Treasury	2,924	2,784	2,651	2,524	2,403
Shares Outstanding (end of the year)	246,584	246,423	246,395	246,494	246,714

		Equity Risk Premium				
Beta	\$66.64	4.60%	4.64%	4.69%	4.74%	4.79%
	0.73	62.638	62.113	61.470	60.841	60.226
	0.71	64.357	63.816	63.152	62.504	61.870
	0.69	66.182	65.623	64.938	64.269	63.614
	0.672	67.922	67.346	66.641	65.952	65.278
	0.65	70.187	69.589	68.858	68.143	67.443
	0.63	72.391	71.773	71.015	70.275	69.551
	0.61	74.748	74.107	73.322	72.555	71.804

		Pre-Tax Cost of Debt						
Marginal Tax Rate	\$66.64	2.00	2.50	3.00	3.23	3.30	3.50	4.00
	19.00%	68.925	67.913	66.932	66.491	66.358	65.981	65.059
	21.00%	69.027	68.036	67.076	66.644	66.513	66.144	65.239
	20.97%	69.026	68.035	67.074	66.641	66.511	66.141	65.236
	20.90%	69.022	68.030	67.069	66.636	66.505	66.136	65.230
	22.00%	69.078	68.098	67.148	66.720	66.591	66.225	65.329

		WACC				
ROIC	\$66.64	4.70%	4.75%	4.78%	4.85%	4.90%
	23.50%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317
	23.00%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317
	22.75%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317
	22.40%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317
	22.10%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317

		WACC				
CV NOPLAT Growth	\$66.64	4.70%	4.75%	4.78%	4.85%	4.90%
	2.50%	83.09268151	81.00980973	79.80391435	77.10983005	75.28164902
	2.25%	75.26608251	73.5452333	72.54535523	70.30199077	68.77210884
	2.00%	68.88885369	67.43785259	66.59229235	64.68850926	63.38490317
	1.75%	63.59251111	62.34836866	61.62158308	59.98042799	58.85280951
	1.50%	59.12372206	58.04188226	57.40860389	55.97504542	54.98720022

Church & Dwight*Weighted Average Cost of Capital (WACC) Estimation***Cost of Equity**

Risk Free Rate	1.88
Equity Risk Premium	4.69
Beta	0.672

Cost of Equity **5.032**

Cost of Debt **3.23**

Effective tax rate (3-year average) 21%

After Tax Cost of Debt **2.552669**

Equity Market Value	\$	18,480,000.00
Debt Market Value	\$	2,104,300.00
Value of Firm	\$	20,584,300.00

Weight of Equity 89.78%

Weight of Debt 10.22%

WACC **4.78%**

Church & Dwight
Value Driver Estimation

<i>Fiscal Years Ending Dec. 30</i>	2016	2017	2018	2019E	2020E	2021E	2022E	CV 2023E
<i>Drivers</i>								
ROIC	22.86%	39.93%	19.37%	18.24%	19.99%	25.60%	23.30%	22.75%
FCF	\$ 363,566	\$ (181,159)	\$ 643,661	\$ 250,255	\$ 502,786	\$ 702,315	\$ 675,749	\$ 566,418
EP	\$ 314,097	\$ 622,395	\$ 387,856	\$ 340,527	\$ 417,077	\$ 580,123	\$ 518,270	\$ 498,445
 <i>NOPLAT</i>								
Sales	\$ 3,493,100	\$ 3,776,200	\$ 4,145,900	\$ 4,402,641	\$ 4,682,468	\$ 4,966,336	\$ 5,252,339	\$ 5,496,029
COGS	\$ 1,902,500	\$ 2,046,600	\$ 2,305,100	\$ 2,421,453	\$ 2,575,357	\$ 2,731,485	\$ 2,888,787	\$ 3,022,816
Marketing & SGA	\$ 866,400	\$ 996,900	\$ 1,049,100	\$ 1,117,705	\$ 1,190,822	\$ 1,275,230	\$ 1,365,738	\$ 1,462,797
Dep & Amort	\$ 107,600	\$ 125,400	\$ 141,100	\$ 115,509	\$ 149,219	\$ 168,127	\$ 186,249	\$ 214,140
EBITA	\$ 616,600	\$ 607,300	\$ 650,600	\$ 747,974	\$ 767,069	\$ 791,494	\$ 811,566	\$ 796,277
Taxes paid	\$ 246,900	\$ (50,700)	\$ 150,900	\$ 132,676	\$ 167,982	\$ 177,085	\$ 185,116	\$ 187,789
Deferred Tax Assets	\$ 512,200	\$ 561,200	\$ 576,400	\$ 422,520	\$ 371,492	\$ 470,350	\$ 495,839	\$ 518,326
Deferred Tax Liabilities	\$ 484,800	\$ 512,200	\$ 561,200	\$ 576,400	\$ 422,520	\$ 371,492	\$ 470,350	\$ 495,839
NOPLAT	\$ 397,100	\$ 707,000	\$ 514,900	\$ 461,419	\$ 548,059	\$ 713,267	\$ 651,938	\$ 630,975
 <i>Invested Capital</i>								
Cash	\$ 187,929	\$ 203,160	\$ 223,049	\$ 236,862	\$ 251,917	\$ 267,189	\$ 282,576	\$ 295,686
Receivables	\$ 287,000	\$ 345,900	\$ 345,300	\$ 386,992	\$ 419,549	\$ 458,393	\$ 489,518	\$ 519,924
Inventories	\$ 258,200	\$ 330,700	\$ 382,800	\$ 360,229	\$ 390,787	\$ 426,912	\$ 456,012	\$ 484,327
Other Current Assets	\$ 23,800	\$ 44,700	\$ 33,400	\$ 34,068	\$ 34,749	\$ 35,444	\$ 36,153	\$ 36,876
Less: Accounts Payable	\$ 331,600	\$ 398,900	\$ 430,200	\$ 357,548	\$ 321,132	\$ 340,677	\$ 363,223	\$ 343,572
Less: Accrued Expenses	\$ 237,300	\$ 260,200	\$ 294,900	\$ 294,444	\$ 321,380	\$ 339,703	\$ 366,283	\$ 399,013
Less: Accrued Taxes	\$ 568,900	\$ 659,100	\$ 725,100	\$ 605,946	\$ 642,513	\$ 680,380	\$ 729,506	\$ 742,585
Net Op Working Capital	\$ (380,871)	\$ (393,740)	\$ (465,651)	\$ (239,788)	\$ (188,024)	\$ (172,823)	\$ (194,753)	\$ (148,355)
Other Assets	\$ 124,300	\$ 118,200	\$ 117,400	\$ 119,748	\$ 122,143	\$ 124,586	\$ 127,078	\$ 129,619
Net PPE	\$ 588,600	\$ 607,700	\$ 598,200	\$ 633,738	\$ 671,352	\$ 711,160	\$ 753,288	\$ 815,405
PV of Operating Leases	\$ 6,807	\$ 6,136	\$ 6,085	\$ 5,950	\$ 5,700	\$ 5,700	\$ 5,700	\$ 5,700
Trademarks & Intangibles	\$ 1,431,800	\$ 2,320,500	\$ 2,274,000	\$ 2,227,500	\$ 2,181,000	\$ 2,134,500	\$ 2,088,000	\$ 2,041,500
Invested Capital	\$ 1,770,636	\$ 2,658,795	\$ 2,530,034	\$ 2,741,198	\$ 2,786,471	\$ 2,797,423	\$ 2,773,612	\$ 2,838,169

Church & Dwight

Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

Key Inputs:

CV Growth	2.00%	2
CV ROIC	22.75%	
WACC	4.78%	
Cost of Equity	5.03%	

<i>Fiscal Years Ending</i>	2018	2019E	2020E	2021E	2022E	2023E
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DCF Model

NOPLAT	\$	461,418.74	\$	548,058.65	\$	713,267.41	\$	651,937.63	\$	630,975.28
Less: Change in IC	\$	211,164.03	\$	45,272.79	\$	10,952.04	\$	(23,811.04)	\$	64,556.84
FCF	\$	250,254.72	\$	502,785.86	\$	702,315.37	\$	675,748.67	\$	566,418.44
Continuing Value (CV)										\$20,714,553
CF	\$	250,254.72	\$	502,785.86	\$	702,315.37	\$	675,748.67		
Discount Factor		104.78%		109.78%		115.03%		120.53%		120.53%
PV of CF		238842.23		457973.91		610546.42		\$560,661.27		\$17,186,638

Value of Operating Assets

\$19,054,661.67

Excess Cash	\$0.00
Less: Debt	\$2,105,300.00
Less: PV Operating Leases	\$60,849.15
Less: PV of ESOP	\$5,614.00
Less: Trade Accounts Payable	\$430,200.00

Value of Equity

\$16,452,698.52

Shares Outstanding	246,885.59
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Intrinsic Value

\$66.64

Price Today

\$64.77

EP Model

NOPLAT	\$	461,418.74	\$	548,058.65	\$	713,267.41	\$	651,937.63	\$	630,975.28
Beq. IC	\$	2,530,034.34	\$	2,741,198.36	\$	2,786,471.15	\$	2,797,423.19	\$	2,773,612.15
ROIC		18.24%		19.99%		25.60%		23.30%		22.75%
WACC		4.78%		4.78%		4.78%		4.78%		4.78%
EP	\$	340,527.26	\$	417,077.21	\$	580,122.72	\$	518,269.62	\$	498,445.03
CV										\$17,940,940.82
Discounting:		104.78%		109.78%		115.03%		120.53%		120.53%

Beq. IC	\$	2,530,034.34
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EP						
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PV of EP	<u>\$16,524,627.34</u>	\$324,998.03	\$379,904.24	\$504,320.24	\$430,002.63	\$14,885,402.20
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EP

Operating Assets

\$19,054,661.67

Excess Cash	\$0.00
Less: Debt	\$2,105,300.00
Less: PV Operating Leases	\$60,849.15
Less: PV of ESOP	\$5,614.00
Less: Trade Accounts Payable	\$430,200.00

Value of Equity

\$16,452,698.52

Shares Outstanding	246,885.59
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Intrinsic Value

\$66.64

Price Today

\$64.77

Church & Dwight*Relative Valuation Models*

Ticker	Company	Price	EPS		P/E		Est. 5yr		
			2019E	2020E	19	20	EPS gr.	PEG 19	PEG 20
CLX	The Clorox Company	\$150.76	\$6.18	\$6.51	24.39	23.16	8.3	2.94	2.79
CL	Colgate-Palmolive Company	\$67.36	\$2.82	\$3.00	23.89	22.45	4.7	5.05	4.75
KMB	Kimberly-Clark Corporation	\$131.59	\$6.87	\$7.24	19.15	18.18	5.2	3.70	3.51
PG	Proctor & Gamble Company	\$123.12	\$4.94	\$5.25	24.92	23.45	11.5	2.16	2.03
PFE	Pfizer	\$38.39	\$2.89	\$2.71	13.28	14.17	5.4	2.46	2.62
JNJ	Johnson & Johnson	\$131.20	\$7.34	\$7.95	17.87	16.50	7.3	2.45	2.26
			Average		20.59	19.65		3.13	2.99
CHD	Church & Dwight	\$68.39	\$2.03	\$2.57	33.7	26.6	11.7	2.88	2.27

Implied Relative Value:

P/E (EPS19)	\$ 41.74
P/E (EPS20)	\$ 50.49
PEG (EPS19)	\$ 74.27
PEG (EPS20)	\$ 90.12

Present Value of Operating Lease Obligations (2018)

Fiscal Years Ending Dec. 30	Operating Leases
2019	18.7
2020	14.6
2021	12.2
2022	10
2023	8.4
Thereafter	10.5
Total Minimum Payments	72.4
Less Interest	12
PV of Minimum Payments	61

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	1.6

Year	Lease Commitment	PV Lease Payment
1	18.7	17.6
2	14.6	13.0
3	12.2	10.2
4	10	7.9
5	8.4	4.8
6 & beyond	6.4	7.3
PV of Minimum Payments		60.8

Present Value of Operating Lease Obligations (2017)

Fiscal Years Ending Dec. 30	Operating Leases
2018	19.5
2019	16.1
2020	12.9
2021	8.4
2022	7.3
Thereafter	8.1
Total Minimum Payments	72.3
Less Interest	15
PV of Minimum Payments	61

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	1.1

Year	Lease Commitment	PV Lease Payment
1	19.5	18.4
2	16.1	14.3
3	12.9	10.8
4	8.4	6.7
5	7.3	5.5
6 & beyond	7.3	5.7
PV of Minimum Payments		61.4

Present Value of Operating Lease Obligations (2015)

Fiscal Years Ending	Operating Leases
2016	19.5
2017	16.7
2018	14.6
2019	12.8
2020	10
Thereafter	16.6
Total Minimum Payments	90.2
Less Interest	16
PV of Minimum Payments	75

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	1.7

Year	Lease Commitment	PV Lease Payment
1	19.5	18.4
2	16.7	14.9
3	14.6	12.3
4	12.8	10.1
5	10	7.5
6 & beyond	10	11.5
PV of Minimum Payments		74.6

Present Value of Operating Lease Obligations (2016)

Fiscal Years Ending	Operating Leases
2017	18.6
2018	16.9
2019	14.3
2020	10.8
2021	7.6
Thereafter	13.4
Total Minimum Payments	81.6
Less Interest	14
PV of Minimum Payments	68

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	1.8

Year	Lease Commitment	PV Lease Payment
1	18.6	17.5
2	16.9	15.0
3	14.3	12.0
4	10.8	8.6
5	7.6	5.7
6 & beyond	7.6	9.2
PV of Minimum Payments		68.1

Present Value of Operating Lease Obligations (2014)

Fiscal Years Ending	Operating Leases
2015	19.7
2016	15
2017	12.2
2018	10.6
2019	9.6
Thereafter	23.3
Total Minimum Payments	90.4
Less Interest	17
PV of Minimum Payments	74

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	2.4

Year	Lease Commitment	PV Lease Payment
1	19.7	18.6
2	15	13.3
3	12.2	10.2
4	10.6	8.4
5	9.6	7.2
6 & beyond	9.6	15.8
PV of Minimum Payments		73.5

Present Value of Operating Lease Obligations (2013)

Fiscal Years Ending	Operating Leases
2014	21.5
2015	17.8
2016	13.3
2017	11.2
2018	10.6
Thereafter	30.7
Total Minimum Payments	105.1
Less Interest	21
PV of Minimum Payments	85

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	2.9

Year	Lease Commitment	PV Lease Payment
1	21.5	20.3
2	17.8	15.8
3	13.3	11.2
4	11.2	8.9
5	10.6	7.9
6 & beyond	10.6	20.5
PV of Minimum Payments		84.6

Present Value of Operating Lease Obligations (2012)

#REF!	Operating Leases
2013	28.2
2014	22.9
2015	18.6
2016	14.8
2017	14.1
Thereafter	121.6
Total Minimum Payments	220.2
Less Interest	66
PV of Minimum Payments	154

Capitalization of Operating Leases

Pre-Tax Cost of Debt	6.00%
Number Years Implied by Year 6 Payment	8.6

Year	Lease Commitment	PV Lease Payment
1	28.2	26.6
2	22.9	20.4
3	18.6	15.6
4	14.8	11.7
5	14.1	10.5
6 & beyond	14.1	69.4
PV of Minimum Payments		154.2