

Darling Ingredients (DAR)

Energy – Renewables & Environment

November 5, 2018

Stock Rating

BUY

Investment Thesis

We issue a buy rating on Darling Ingredients, Inc. [DAR] which engages in the development and production of natural ingredients from edible and inedible bio-nutrients. We see an upside of 36% on the current stock price of \$20.97 per share. They recently concluded Phase II expansion of their Diamond Green facility in Norco, Louisiana and increased their renewable diesel production capacity to 275 M gallons from 160 M gallons. Coupled with a positive outlook on Low Carbon Fuel Standard (LCFS) policy adoptions and credit values and planned Phase III expansion, we project a significant increase in their fuel segment revenues. In addition, we believe their protein rendering business will continue enjoying elevated prices due to strong demand for higher protein specialty ingredients.

Drivers of Thesis

- Production capacity of DGD facility expanded to 275 M gallons with additional planned expansion to 600-700 M gallons – we project Fuel segment revenue to increase from \$266 M in 2017 to \$620 M in 2022
- LCFS credit values in various jurisdictions (California, Oregon, etc.) have been rising and we expect that trend to continue
- We project the revenue from protein rendering operation to increase from \$816 M in 2017 to \$1703 M in 2022 owing to increasing demand and favorable prices for protein ingredients

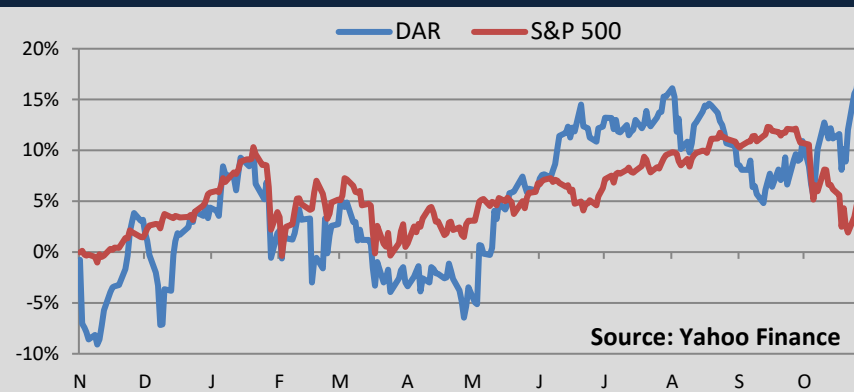
Risks to Thesis

- Federal regulations - declining trend in RIN prices due to increasing volume obligation waivers granted by EPA to small petroleum refineries
- Margin depression in fats and other rendering operations

Earnings Estimates

Year	2016	2017	2018E	2019E	2020E	2021E
EPS	\$0.61	\$0.71	\$1.12	\$2.41	\$3.19	\$3.78
growth	27.8%	15.6%	57.9%	115.7%	32.0%	18.6%

12 Month Performance



Target Price

\$28-29

Henry Fund DCF	\$28.59
Henry Fund DDM	\$53.22
Relative Multiple	\$16.64

Price Data

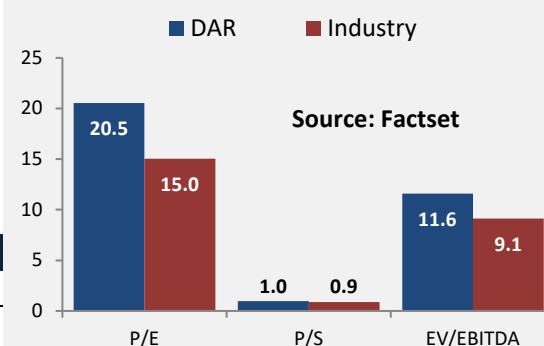
Current Price	\$20.97
52wk Range	\$15.80 – 22.11
Consensus 1yr Target	\$23.88

Key Statistics

Market Cap (M)	\$3427.0
Shares Outstanding (M)	164.7
Institutional Ownership	102.5%
Five Year Beta	1.05
Dividend Yield	0.0%
Price/Earnings (2017)	23.55
Price/Earnings (FY1)	28.11
Price/Sales (TTM)	0.97
Price/Book (mrq)	1.33

Profitability

Operating Margin	3.42%
Profit Margin	3.51%
Return on Assets	2.66%
Return on Equity	6.09%
ROIC	4.92%



Company Description

Darling Ingredients is a global developer and producer of sustainable natural ingredients from edible and inedible bio-nutrients. With operations on five continents, they create a wide range of ingredients and customized specialty solutions for customers in the pharmaceutical, food, pet food, feed, industrial, fuel, bioenergy and fertilizer industries. In fiscal 2017, the Company generated \$3.7 B in revenues and \$128.5 M in net income.

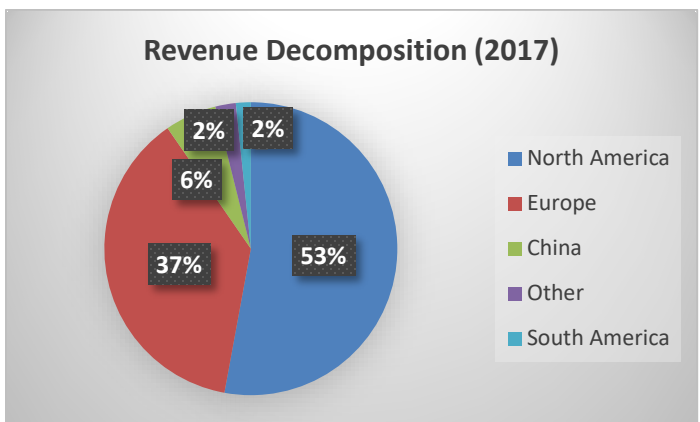
EXECUTIVE SUMMARY

Darling Ingredients [DAR] is a producer and developer of natural ingredients. It is a growth-oriented company with an organic strategy. It possesses stable margins as the prices of most of their raw materials are pegged to the prices of the finished commodity.

DAR currently trades at a market price of \$20.97, and our models (as of 11/05/2018) produced an intrinsic value in the range of \$16.38 to \$53.22. We favor our DCF-EP model, which gives a price of \$28.59. It indicates a 36% upside over the current stock price and hence we place a BUY recommendation on this stock. We do not favor the DDM model as the company does not pay any dividends. We do not favor relative valuation models as it is a unique business with segments across different industries. Therefore, the peers are not exactly comparable as a whole to Darling as they are key competitors operating in different industries. The key assumptions factoring into this price is the increasing revenue from the expansion of DGD facility, increase in protein ingredient prices, and widespread adoption of LCFS policies and increase in LCFS credit values.

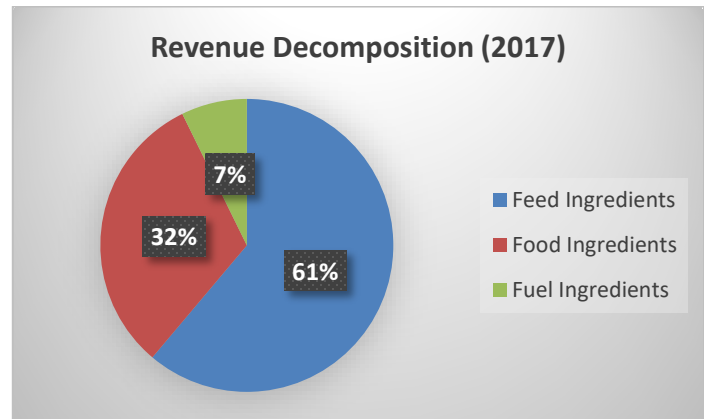
COMPANY DESCRIPTION

Darling Ingredients is a global developer and producer of sustainable natural ingredients from edible and inedible bio-nutrients.¹ With operations on five continents, they create a wide range of ingredients and customized specialty solutions for customers in the pharmaceutical, food, pet food, feed, industrial, fuel, bioenergy and fertilizer industries. In fiscal 2017, the Company generated \$3.7 billion in revenues and \$128.5 million in net income.



Source: Factset

They collect and transform all aspects of animal by-product streams into useable and specialty ingredients, such as gelatin, edible fats, feed-grade fats, animal proteins and meals, plasma, pet food ingredients, organic fertilizers, yellow grease, fuel feedstocks, green energy, natural casings and hides. They also recover and convert recycled oils (used cooking oil and animal fats) into valuable feed and fuel ingredients and collect and process residual bakery products into feed ingredients. In addition, they provide environmental services, such as grease trap collection and disposal services to food service establishments and disposal services for waste solids from the wastewater treatment systems of industrial food processing plants. Darling Ingredients operates within three reportable operating segments: Feed Ingredients, Food Ingredients and Fuel Ingredients.



Source: DAR 10K 2017

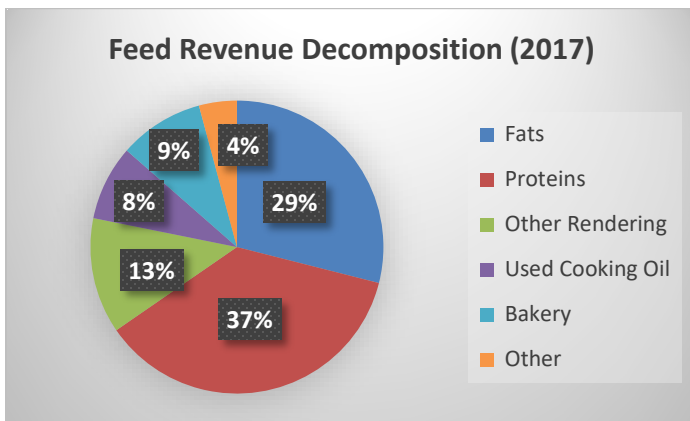
Feed Segment

The Feed Ingredients operating segment includes:

- 1) Collection and processing of beef, poultry and pork animal by-products in North America and Europe into non-food grade oils and protein meals
- 2) Collection and processing of bakery residuals in North America into Cookie Meal®, which is predominantly used in poultry and swine rations
- 3) Collection and processing of used cooking oil in North America into non-food grade fats
- 4) Collection and processing of porcine and bovine blood in China, Europe, North America and Australia into blood plasma powder and hemoglobin
- 5) Processing of selected portions of slaughtered animals into a variety of meat products for use in pet food
- 6) Processing of cattle hides and hog skins in North America and cattle hides in Europe

- 7) Production of organic fertilizers using protein produced from the Company's animal by-products processing activities in North America and Europe
- 8) Provision of grease trap services to food service establishments and environmental services to food processors in North America

Non-food grade oils and fats produced and marketed by Darling are principally sold to third parties to be used as ingredients in animal feed and pet food, as an ingredient for the production of biodiesel and renewable diesel, or to the oleo-chemical industry to be used as an ingredient in a wide variety of industrial applications. Protein meals, blood plasma powder and hemoglobin produced and marketed by the Company are sold to third parties to be used as ingredients in animal feed, pet food and aquaculture.



Source: DAR 10K 2017

Protein prices have been improving year over year due to strong demand for higher protein specialty ingredients. On the other hand, fat prices have been compressed in general by supply/demand pressures. We have assumed that these trends will continue going forward. We forecast revenues from this segment as follows:

Revenue (\$M)	2018	2019	2020	2021	2022
Feed (Total)	2076.0	2424.7	2747.9	3143.8	3476.7
Growth rate	-7.3%	16.8%	13.3%	14.4%	10.6%
Fats	546.6	500.9	462.0	426.1	417.6
Growth Rate	-15.7%	-8.4%	-7.8%	-7.8%	-2.0%
Proteins	936.6	1177.3	1350.4	1549.0	1703.8
Growth Rate	14.8%	25.7%	14.7%	14.7%	10.0%
Other Rendering	125.0	142.8	164.5	189.6	208.6
Growth Rate	-56.3%	14.2%	15.2%	15.2%	10.0%

UCO	203.4	297.3	396.6	529.1	635.0
Growth Rate	9.6%	46.2%	33.4%	33.4%	20.0%
Bakery	181.7	217.7	270.2	335.5	385.8
Growth Rate	-13.4%	19.8%	24.1%	24.1%	15.0%
Other	82.8	88.8	104.1	114.5	126.0
Growth Rate	3.4%	-11.6%	7.2%	-2.8%	10.0%

Source: Henry Fund Estimates

Food Segment

The Food Ingredients operating segment includes:

- 1) Purchase and processing of beef and pork bone chips, beef hides, pig skins, and fish skins into gelatin and hydrolyzed collagen in Europe, China, South America and North America
- 2) Collection and processing of porcine and bovine intestines into natural casings in Europe, China and North America
- 3) Extraction and processing of porcine mucosa into crude heparin in Europe
- 4) Collection and refining of animal fat into food grade fat in Europe
- 5) Processing of bones to bone chips for the gelatin industry and bone ash.

Gelatins and collagens produced and marketed by Darling are sold to third parties to be used as ingredients in the pharmaceutical, nutraceutical, food, pet food, and technical (e.g., photographic) industries. Natural casings produced and marketed are sold to third parties to be used as an ingredient in the production of sausages and other similar food products. We forecast revenues from this segment as follows:

Revenue (\$M)	2018	2019	2020	2021	2022
Food (total)	1175.0	1370.8	1772.9	1905.9	2048.8
Growth rate	1.6%	4.8%	7.5%	7.5%	7.5%

Source: Henry Fund Estimates

Fuel Segment

The Fuel Ingredients operating segment includes:

- 1) Conversion of animal fats and recycled greases into biodiesel in North America
- 2) Conversion of organic sludge and food waste into biogas in Europe

- 3) Collection and conversion of fallen stock and certain animal by-products pursuant to applicable E.U. regulations into low-grade energy sources to be used in industrial applications
- 4) Processing of manure into natural bio-phosphate in Europe
- 5) Darling’s share of the results of its equity investment in Diamond Green Diesel Holdings LLC, a joint venture with Valero Energy Corporation (“Valero”) to convert animal fats, recycled greases, used cooking oil, inedible corn oil, soybean oil, or other feedstocks that become economically and commercially viable into renewable diesel

We forecast revenues from this segment as follows:

Revenue (\$M)	2018	2019	2020	2021	2022
Fuel	319.4	382.3	433.8	477.1	620.3
Growth rate	20.2%	19.7%	13.4%	10.0%	30.0%

Source: Henry Fund Estimates

Company Analysis

Darling’s Feed segment including animal by-products, bakery residuals, used cooking oil recovery, and blood operations are each influenced by prices for agricultural-based alternative ingredients such as corn, soybean oil, soybean meal, and palm oil. In these operations, the costs of raw materials change with or are indexed to the anticipated selling price of the finished goods produced from the acquired raw materials and/or the price spread between various types of finished products. In the Food segment as well, for the gelatin and casings operation, in particular, the cost of the animal-based raw material moves in relationship to the selling price of the finished goods. Therefore, we predict relatively stable operating margins upon the acquisition of the raw material for these segments. The Fuel Ingredients segment converts fats into renewable diesel, organic sludge and food waste into biogas which fall into low- grade energy sources. Darling’s gross margin and profitability in this segment are impacted by world energy prices for oil, electricity and natural gas as well as state and federal incentives for low carbon emission fuel sales.

(% of Net Sales)	2018	2019	2020	2021	2022
Gross Margin	22.1%	22.7%	22.7%	22.7%	22.7%
EBITDA Margin	12.2%	12.6%	12.6%	12.6%	12.6%
Pretax Income Margin	4.9%	9.6%	10.1%	10.5%	10.8%

Tax Expense/Benefit	-0.3%	-0.5%	-0.5%	-0.5%	-0.5%
Net Income	4.6%	9.1%	9.6%	9.9%	10.2%

Source: Henry Fund Estimates

Therefore, barring some quarterly seasonal variations we have overall stable projected margins. There exists a risk factor of drastic movements of finished goods prices from the time the raw materials were procured until the finished goods are sold but it is very difficult to predict such occurrences. As a large portion of DAR’s operations is outside of the United States, the strengthening dollar will have a certain negative impact on the reported values.

RECENT DEVELOPMENTS

Q2 Earnings Report

On 9th August 2018, Darling Ingredients (DAR) came out with quarterly earnings of \$0.11 per share, beating the consensus estimate of \$0.10 per share by 10%.² This compares to earnings of \$0.05 per share a year ago. These figures are adjusted for non-recurring items. A quarter ago, it was expected that this producer of natural ingredients from edible and inedible bio-nutrients would post earnings of \$0.10 per share when it actually produced earnings of \$0.58, delivering a surprise of 480%. This was due to the retroactive application of Blender’s Tax Credit (BTC). BTC is a tax incentive in the amount of \$1.00 per gallon of renewable diesel blended with petroleum diesel to produce a mixture containing 0.1% diesel fuel. We have not assumed BTC in our forecast. Over the last four quarters, the company has surpassed consensus EPS estimates three times.



Source: DAR Investor Presentation Q2 2018

The gross margins are exhibiting an improving trend apart from a decline in Q3 2017 driven by Fuel Segment due to

isolated events associated with some operating challenges at two of the company’s facilities (Ecoson bioenergy plant and Rendac-Son facility). These issues have been rectified and they are currently running smoothly. In our forecast we have conservatively assumed that the gross margin will stay in between 22-23% going forward.

Diamond Green JV

The DGD Joint Venture between Darling and Valero operates a renewable diesel plant located in Norco, Louisiana capable of processing approximately 12,000 barrels per day of input feedstock to produce renewable diesel fuel and certain other co- products. It converts animal fats and used cooking oils, which are supplied in part by Darling, and other feedstocks that become economically and commercially viable, such as inedible corn oil and soybean oil, into renewable diesel. The Diamond Green Diesel renewable diesel product is sold to refiners under the Diamond Green Diesel® name to be blended with diesel fuel and is interchangeable with diesel produced from petroleum.

In April 2016, Darling announced the planned expansion of the DGD Facility's annual production capacity from 160 million gallons of renewable diesel to 275 million gallons which they have now completed (Q2 2018). They are in process of exploring an additional expansion of the DGD Facility’s annual production capacity to 600-700 million gallons. We are confident that they will be able to proceed with this expansion and have assumed that it will be funded by cash flow from operations. We have forecasted a total capex spending of \$1.68 B from 2019 to 2022 which will cover this expansion.

Capex Forecast:

(in \$M)	2018	2019	2020	2021	2022
Capital expenditures	329.0	361.9	398.1	437.9	481.7

Source: Henry Fund Estimates

INDUSTRY TRENDS

RVO and RINs

Renewable Volume Obligation (RVO) is the percentage shares of gasoline and diesel that must be comprised of renewable fuels. RINs represent quantity of renewable fuel that is produced and blended into U.S. gasoline and diesel fuel.³ RINs are tradeable and obligated parties who

blend less than their required share of renewable fuels may purchase RINs from other parties who blended more.

RIN prices represent the marginal cost of producing and consuming required volumes of each renewable fuel. Low RIN prices indicate a market perception that annual RVOs will be easy to meet without expanding biofuel production and distribution capabilities. D4 RIN prices (D4 category is associated with biomass-based diesel) have been falling YTD in 2018.

2018 D4 RIN Prices:



Source: EPA⁴

This is because EPA has been exempting small refineries (gasoline and diesel producers) from RVO obligation. From 2012 to 2015, average of 3 exemptions per year were granted. Under Administrator Scott Pruitt, EPA granted 20 exemptions from compliance with 2016 RVO and 29 exemptions from 2017 RVO. After Pruitt resigned in July 2018, he was replaced by deputy administrator Andrew Wheeler who comes from the same school of thought as Pruitt.

Low Carbon Fuel Standard

Low Carbon Fuel Standard (LCFS) policies target reduction in carbon intensity (CI) in transportation fuels. A CI score is based on lifecycle analysis.⁵ Programs set ratable annual CI standards for the transportation sector. Low CI fuels, such as renewable diesel, generate credits that can be purchased to offset high carbon deficit generating fuels, e.g. petroleum diesel and gasoline. Jurisdictions with enacted LCFS programs are:

- California: 2011 adoption – minimum 10% reduction by 2020, 2018 amendment – 1.25% annual reduction through 2030, 20% reduction by 2030
- Oregon: 10% reduction of 1990 levels of GHG emissions by 2020
- British Columbia (Canada): 10% reduction of 2010 of GHG emissions by 2020

- Germany: 40% reduction of 1990 levels GHG emissions by 2020, 80-95% reduction by 2050
- Czech Republic & Romania

Jurisdictions discussing LCFS program adoption: Washington, Canada, Brazil, and Sweden. LCFS credit value varies according to the jurisdiction and the feedstocks used for producing the renewable diesel. We hold a positive outlook for LCFS adoption and credit values in the future and that is the basis of our optimistic forecast for growth of the Fuel segment of Darling.

MARKETS AND COMPETITION

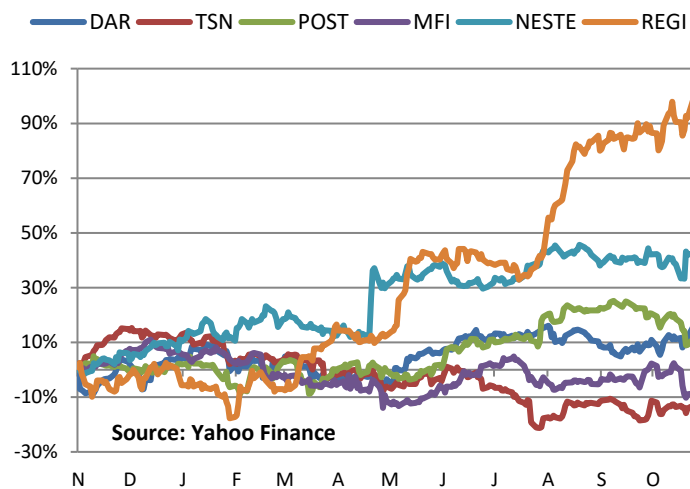
Peer Comparisons

Following are the peers that were selected for comparison:

Company Name	Ticker	Market Cap. (\$M)	Beta
Darling Ingredients	DAR	3,426.5	1.06
Tyson Foods	TSN	21,238.5	0.59
Maple Leaf Foods	MFI-CA	2,782.6	0.75
REG	REGI	939.2	0.85
Post Holdings	POST	6,134.5	0.85
Neste	NESTE-FI	20,657.2	0.85
Average		9196.42	0.82

Source: Factset

12 Month Performance:



Company Name	Dividend Yield	EBITDA margin	Short Interest
Darling Ingredients	0.0%	12.5%	4.1%
Tyson Foods	2.6%	10.5%	6.0%
Maple Leaf Foods	1.8%	10.0%	0.6%
REG	0.0%	13.8%	7.3%
Post Holdings	0.0%	17.9%	5.0%
Neste	2.4%	11.1%	NA
Average	1.1%	12.6%	4.6%

Source: Factset

Maple Leaf Foods and Tyson have also faced the same feed/food price compressions as Darling. However, Renewable Energy Group and Neste have outperformed as they have been enjoying higher margins due to the drop in RIN prices which has lowered the cost of feedstocks for their pure-play biomass-based diesel operations. Also, LCFS credit values have shown a rising trend in various jurisdictions (ex. 74% in California). Darling, which operates in both spectrums has shown average performance but recognizes the premium associated with their Fuel segment growth mainly attributed to the DGD facility. In our estimation, most of their future capex investment will be on this facility being expanded from 275 million gallons production capacity to 600-700 million gallons. This poses a significant upside for the company.

Neste is currently world's leading renewable diesel producer at a production capacity of 687 million gallons. Renewable Energy Group (REG) is currently at 75 million gallons from their Geismar plant which is their only renewable diesel plant. However, REG is planning to build another renewable diesel facility in Washington state which will boost their capacity in the next few years.

Company Name	Debt/Equity	Current Ratio	EBIT/Interest Expense
Darling Ingredients	74.5%	1.81	1.33x
Tyson Foods	81.8%	1.48	9.23x
Maple Leaf Foods	8.9%	1.89	32.18x
REG	26.6%	1.56	15.88x
Post Holdings	236.7%	1.94	1.86x
Neste	25.8%	1.62	22.15x
Average	75.7%	1.72	13.77x

Source: Factset

Darling has an average leverage ratio, but its interest coverage ratio is much lower than its peers. This might seem like a concern however, we are confident that its cash flow from operations is on an upward trend and this ratio will improve. We even project the leverage ratio to compress in our model to 36.5% in 2022 as all their capex will be covered by cash flow from operations and as they do not pay dividends, they will buy back shares and also pay off their debt beyond their debt maturity schedule.

The company trades at a higher P/E and P/S multiple and has a comparatively high EV/EBITDA ratio on average which we believe is a premium for the growth potential represented by the company especially attributed to the DGD facility.

Company Name	Price to Sales	Price to Earnings	EV/ EBITDA
Darling Ingredients	0.97x	20.54x	11.58x
Tyson Foods	0.53x	7.39x	7.43x
Maple Leaf Foods	1.04x	24.37x	10.40x
REG	0.49x	4.52x	2.87x
Post Holdings	1.13x	14.10x	12.00x
Nestle	1.16x	19.23x	10.51x
Average	0.89x	15.03x	9.13x

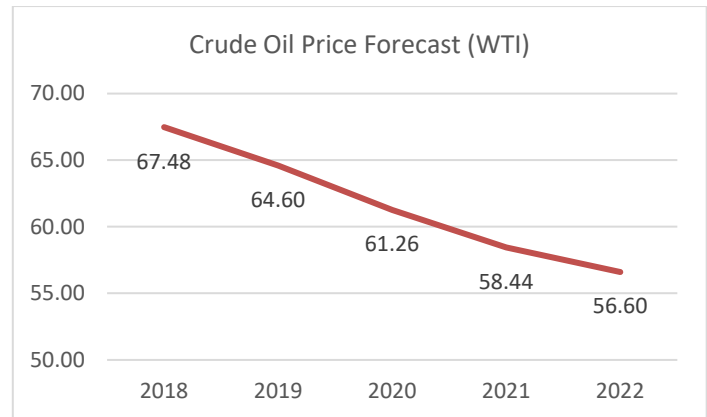
Source: Factset

ECONOMIC OUTLOOK

Crude Oil Prices

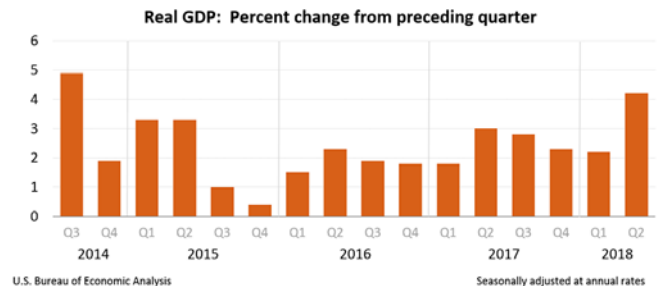
The petroleum industry had been operating in a lower oil price environment since late 2014, when oil prices began declining due to a worldwide oversupply of oil. During the fourth quarter of 2016, the Organization of Petroleum Exporting Countries (OPEC) members and some non-members, led by Russia, pledged to reduce their oil output by roughly 1.8 million barrels a day from Oct 2016 levels in an effort to draw down a global oversupply and to rebalance supply and demand. The agreement became effective in January 2017 and was originally set to expire in March 2018. In Nov 2017, the participants agreed to lengthen the output reductions through Dec 2018. These output reductions coupled with healthy oil demand, resulted in an increase in oil prices in 2017 and first half of 2018. We expect the worldwide demand for oil to increase further as economic growth around the world is forecasted to be stronger than the last several years.

However, we believe this demand increase is expected to be met by much higher supplies of oil from U.S. shale production growth and OPEC and further oil inventory drawdowns which will lead to a decline in crude oil prices. The futures quotes are consistent with our theory and we have used them to forecast revenue. We believe this backwardation will not affect Darling's margins as feedstock costs will reduce as well if diesel prices fall.



Source: CME Futures Prices (\$/Bbl)⁶

GDP



Source: US Bureau of Economic Analysis

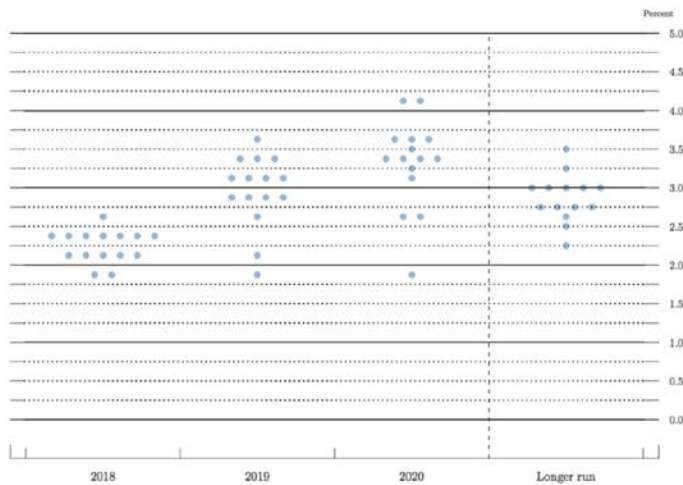
GDP growth is the key indicator of economic development which influences the demand for fuel. This is intuitive as you can imagine that in a growing economy people will buy more cars and be less frugal with their energy consumption. Also, businesses will expand and with the increase in commercial activity, there will be more energy consumption. There has been a steep growth in GDP in recent times and with controlled production globally, the supply of oil is limited. Hence, there has been a surge in oil prices which has benefited the industry. We believe that real GDP growth will continue its run in 2018 and then taper off 2019 onwards which is consistent with Federal Open Market Committee projections. Accordingly, the liquid fuels demand in the US will peak in early 2019 and then taper off causing crude oil prices to decline which

follows our forecast. We estimate long term nominal US GDP growth to be 3.00%.

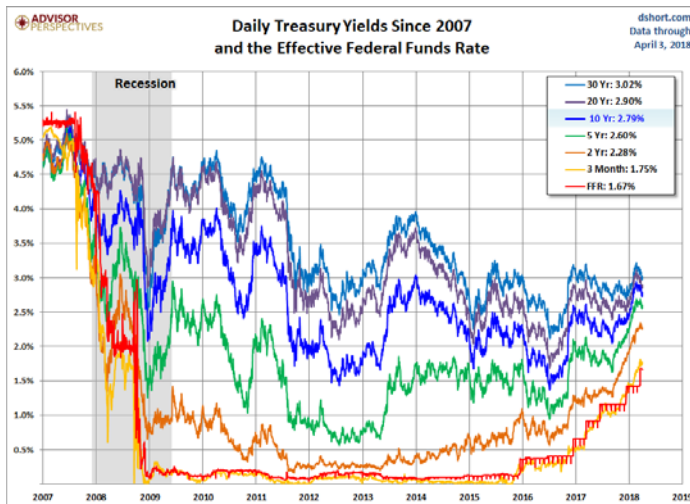
Interest Rates

The fed funds rate was increased from 2.25% to 2.50% in September 2018. Over the next few years, the FOMC will continue to take the opportunity to reign in loose monetary policy and shore up options for a future downturn. Robust job growth and inflation will continue to drive the fed to raise rates in 2019 and 2020 as well.

Fed Dot Plot:



Source: Federal Open Market Committee



Source: Advisor Perspectives⁷

On examining the long-term history of the relationship between short and long-term interest rates between recessions we can make some conclusions. During the phase of economic expansion, the fed-funds rate is raised which raises the short-term rates and eventually, the

difference between short and long-term rates narrow to the point of yield inversion which is followed by a recession. We believe there is a strong possibility of history repeating itself as we see a similar trend unfolding with the gap between long and short-term rates narrowing gradually as the fed's funds rates are raised. We expect the 10 and 30-year treasury yields to rise only marginally over the next three years to around 3.5-4.0% range.



Source: Advisor Perspectives

Corporate borrowing tends to be in the 7 to 30-year range and hence they are more influenced by long-term treasury rates. Hence, we expect average cost of debt to go up slightly for all firms in the next few years. This will not affect Darling as we project overall debt levels to reduce and all major capex spending being covered by cash flow from operations.

INVESTMENT POSITIVES

- Production capacity of DGD facility expanded to 275 M gallons with additional planned expansion to 600-700 M gallons
- LCFS credit values in various jurisdictions (California, Oregon, etc.) have been rising and we expect that trend to continue
- Increasing demand and favorable prices for protein ingredients

INVESTMENT NEGATIVES

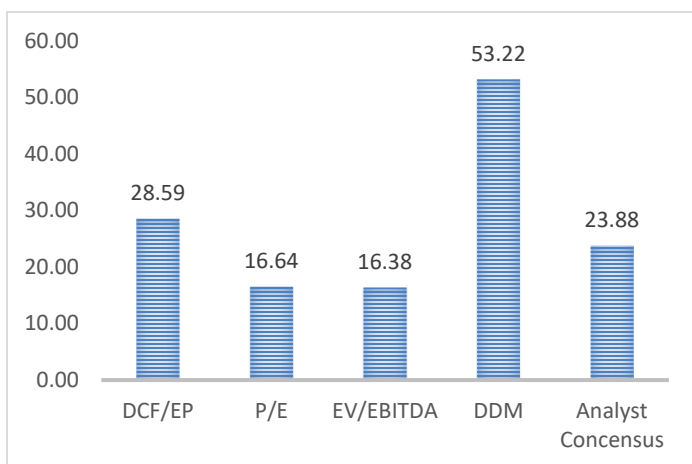
- Declining trend in RIN prices due to increasing volume obligation waivers granted by EPA to small petroleum refineries

- Revenue and possible margin depression in fats and other rendering operations

VALUATION

DCF-EP, DDM, relative P/E, and EV/EBITDA analysis have been used to value Darling Ingredients (DAR)

DAR currently trades at a market price of \$20.97, and our models (as of 11/05/2018) produced an intrinsic value in the range of \$16.38 to \$53.22. We favor our DCF-EP model, which gives a price of \$28.59. It indicates a 36% upside over the current stock price and hence we place a BUY recommendation on this stock. We do not favor the DDM model as the company does not pay any dividends. We do not favor relative valuation models as it is a unique business with segments across different industries. Therefore, the peers are not exactly comparable as a whole to Darling as they are key competitors operating in different industries. The key assumptions factoring into this price is the increasing revenue from the expansion of DGD facility, increase in protein ingredient prices, and widespread adoption of LCFS policies and increase in LCFS credit values.



Source: Henry Fund Estimates and Factset

Income Statement: All line-items were forecasted on a quarterly basis for this report. We forecasted revenues based on our outlook for individual segments and their components based on industry trends. We forecasted expenses like COGS and SG&A as % of sales consistent with historical averages. D&A expense was forecasted similarly but as % of PPE, following the historical trend. We forecasted interest expenses according to the debt level on the balance sheet, using the beginning of the period debt level and multiplying it by the cost of debt. We

assumed a low marginal tax rate of 5% which is a standard industry assumption associated with biofuels incentives or in their absence, utilization of tax-loss carry forwards. We forecasted the income attributable to unconsolidated subsidiaries according to the growth in net income from the DGD facility coherent with its expansion and favorable federal/state policies.

Balance Sheet: We forecasted Accounts Receivable, Inventories, and Accounts Payable as % of sales consistent with the respective historical averages. We forecasted Prepaid Expenses, Income Taxes Refundable, Short Term Debt, Accrued Expenses and other current assets direct averages of past values as they haven't changed in one direction over the past few years assuming that the company aims to keep these values in a range. We increased PPE according to our capex forecast which is based on the management's guidance for growth in production levels. We paid off long term debt as per the repayment schedule and our payout policy forecast did not include any dividends. Treasury stock line item will grow significantly from 2018 onwards due to buybacks. We used cash as our plug item to balance the assets and liabilities + equity. We assumed a constant goodwill as we do not forecast any acquisitions. Other items were forecasted based on historical trends either as % of sales/assets or in a range-bound fashion according to how they have behaved in the past.

Market Risk Premium: The Henry Fund consensus is 4.8%.

Beta: We used a Beta of 1.05, calculated with the help of Factset. This was the value computed from regression of DAR's weekly returns on market's (S&P 500) weekly returns over the most recent 5-year period.

CV Growth: We estimate long-term nominal growth rate of US GDP to be around 3.00%. We conservatively set Darling's CV NOPLAT growth rate at 3.00% because we expect it to grow on par with the overall economy beyond our forecast.

Relative Valuation: Two different multiples were used in Relative valuation model: P/E and EV/EBITDA. As per both multiples the company's stock is overpriced but we disregard this inference as the peers are not exactly comparable as a whole to Darling as they are key competitors operating in different industries.

KEYS TO MONITOR

DGD Facility Stats: As a key driver for this thesis it is imperative that this facility remains operationally sound and produces close to the nameplate capacity. In addition, we need to monitor the progress on the Phase 3 expansion.

LCFS policy adoption and credit values: We need to keep a tab on new jurisdictions adopting LCFS policies as well as monitor the credit values in existing jurisdictions especially California and Oregon.

Rendering Operation Prices: We have assumed that the fat and other rendering operations continue facing price depression and protein ingredients keep enjoying higher prices. If these trends change, the target price will differ from the current one.

RVO and RIN prices: EPA's activity related to RVO and related waivers can have a sizable effect on the company's price performance. We need to monitor announcements and any possible change in administration of the agency.

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DAR - Revenue Decomposition

(In millions of \$)

	2016	Q1-2017	Q2-2017	Q3-2017	Q4-2017	2017	Q1-2018	Q2-2018	Q3-2018	Q4-2018	2018	Q1-2019	Q2-2019	Q3-2019	Q4-2019	2019	Q1-2020	Q2-2020	Q3-2020	Q4-2020	2020	2021	2022
Feed Ingredients	2,089.10	552.60	549.10	575.50	562.30	2,239.50	485.80	498.80	531.71	559.73	2,076.05	581.26	596.36	618.19	628.91	2,424.72	655.76	674.81	701.81	715.53	2,747.92	3,143.81	3,476.75
Growth rate (%)			-0.63%	4.81%	-2.29%	7.20%	-13.60%	2.68%	6.60%	5.27%	-7.30%	3.85%	2.60%	3.66%	1.73%	16.79%	4.27%	2.91%	4.00%	1.96%	13.33%	14.41%	10.59%
Fats	574.60	158.00	160.20	166.00	164.10	648.30	143.50	137.10	134.36	131.67	546.63	129.04	126.46	123.93	121.45	500.87	119.02	116.64	114.31	112.02	461.99	426.12	417.60
Growth Rate (%)			1.39%	3.62%	-1.14%	12.83%	-12.55%	-4.46%	-2.00%	-2.00%	-15.68%	-2.00%	-2.00%	-2.00%	-2.00%	-8.37%	-2.00%	-2.00%	-2.00%	-2.00%	-7.76%	-7.76%	-2.00%
Proteins	769.40	198.20	195.80	218.80	203.30	816.10	203.40	221.50	243.65	268.02	936.57	281.42	287.04	301.40	307.42	1177.28	322.80	329.25	345.71	352.63	1350.39	1548.95	1703.85
Growth Rate (%)			-1.21%	11.75%	-7.08%	6.07%	0.05%	8.90%	10.00%	10.00%	14.76%	5.00%	2.00%	5.00%	2.00%	25.70%	5.00%	2.00%	5.00%	2.00%	14.70%	14.70%	10.00%
Other Rendering	269.10	73.60	73.50	68.70	70.40	286.20	31.40	29.00	31.90	32.69	124.99	33.34	35.01	36.76	37.67	142.78	38.42	40.35	42.36	43.41	164.54	189.61	208.58
Growth Rate (%)			-0.14%	-6.53%	2.47%	6.35%	-55.40%	-7.64%	10.00%	2.47%	-56.33%	2.00%	5.00%	5.00%	2.47%	14.24%	2.00%	5.00%	5.00%	2.47%	15.24%	15.24%	10.00%
Used Cooking Oil	165.10	44.00	45.40	46.60	49.50	185.50	36.60	48.00	57.60	61.18	203.38	67.30	70.67	77.73	81.62	297.33	89.78	94.27	103.70	108.89	396.64	529.13	634.96
Growth Rate (%)			3.18%	2.64%	6.22%	12.36%	-26.06%	31.15%	20.00%	6.22%	9.64%	10.00%	5.00%	10.00%	5.00%	46.19%	10.00%	5.00%	10.00%	5.00%	33.40%	33.40%	20.00%
Bakery	220.40	56.10	51.60	51.90	50.20	209.80	46.80	44.50	44.76	45.65	181.71	50.22	55.24	55.56	56.67	217.70	62.34	68.58	68.97	70.35	270.24	335.47	385.79
Growth Rate (%)			-8.02%	0.58%	-3.28%	-4.81%	-6.77%	-4.91%	0.58%	2.00%	-13.39%	10.00%	10.00%	0.58%	2.00%	19.80%	10.00%	10.00%	0.58%	2.00%	24.14%	24.14%	15.00%
Other	90.50	22.70	22.60	23.50	24.80	93.60	24.10	18.70	19.44	20.52	82.77	19.94	21.94	22.81	24.07	88.76	23.39	25.73	26.75	28.23	104.11	114.52	125.97
Growth Rate (%)			-0.44%	3.98%	5.53%	3.43%	-2.82%	-22.41%	3.98%	5.53%	-11.58%	-2.82%	10.00%	3.98%	5.53%	7.24%	-2.82%	10.00%	3.98%	5.53%	17.30%	10.00%	10.00%
Food Ingredients	1,055.73	266.23	278.41	300.28	312.06	1,156.98	305.52	276.73	282.26	310.49	1,175.00	326.01	332.53	339.19	373.10	1,370.84	391.76	430.94	452.48	497.73	1,772.91	1,905.87	2,048.81
Growth rate (%)			4.58%	7.86%	3.92%	9.59%	-2.10%	-9.42%	2.00%	10.00%	1.56%	5.00%	2.00%	2.00%	10.00%	4.75%	5.00%	10.00%	5.00%	10.00%	7.50%	7.50%	7.50%
Fuel Ingredients	247.06	59.66	67.40	61.86	76.87	265.78	84.06	71.09	78.20	86.02	319.38	90.32	94.84	99.58	97.59	382.34	102.47	107.59	112.97	110.71	433.76	477.13	620.27
Growth rate (%)			12.98%	-8.23%	24.26%	7.58%	9.36%	-15.42%	10.00%	10.00%	20.16%	5.00%	5.00%	5.00%	-2.00%	19.71%	5.00%	5.00%	5.00%	-2.00%	13.45%	10.00%	30.00%
Consolidated opera	3,391.88	878.49	894.91	937.64	951.22	3,662.26	875.38	846.62	900.00	956.25	3,570.43	997.60	1,023.73	1,056.96	1,099.61	4,177.90	1,149.99	1,213.34	1,267.27	1,323.98	4,954.58	5,526.82	6,145.83
Growth rate (%)			1.87%	4.77%	1.45%	7.97%	-7.97%	-3.28%	6.30%	6.25%	-2.51%	4.32%	2.62%	3.25%	4.03%	17.01%	-72.47%	5.51%	4.44%	4.47%	18.59%	11.55%	11.20%

DAR - Common Size Income Statement

	2016	Q1-2017	Q2-2017	Q3-2017	Q4-2017	2017	Q1-2018	Q2-2018	Q3-2018	Q4-2018	2018	Q1-2019	Q2-2019	Q3-2019	Q4-2019	2019	Q1-2020	Q2-2020	Q3-2020	Q4-2020	2020	2021	2022
Net Sales	3,391.88	878.49	894.91	937.64	951.22	3,662.26	875.38	846.62	900.00	956.25	3,570.43	997.60	1,023.73	1,056.96	1,099.61	4,177.90	1,149.99	1,213.34	1,267.27	1,323.98	4,954.58	5,526.82	6,145.83
Operating Expenses:																							
COGS	-77.88%	-78.50%	-78.31%	-79.35%	-78.41%	-78.65%	-77.46%	-77.13%	-77.30%	-77.21%	-77.45%	-77.46%	-77.13%	-77.30%	-77.21%	-77.27%	-77.46%	-77.13%	-77.30%	-77.21%	-77.27%	-77.27%	-77.27%
SG&A	-9.27%	-10.01%	-9.56%	-8.87%	-9.56%	-9.49%	-9.93%	-9.28%	-10.13%	-10.16%	-9.91%	-10.07%	-10.19%	-10.13%	-10.16%	-10.14%	-10.07%	-10.19%	-10.13%	-10.16%	-10.14%	-10.14%	-10.14%
EBITDA	12.85%	11.49%	12.14%	11.78%	12.04%	11.86%	12.61%	13.59%	12.57%	12.63%	12.65%	12.46%	12.68%	12.57%	12.63%	12.59%	12.46%	12.68%	12.57%	12.63%	12.59%	12.59%	12.59%
Depreciation & Amortization Expense	-8.55%	-8.10%	-8.16%	-8.23%	-8.49%	-8.25%	-8.98%	-9.27%	-8.80%	-8.29%	-8.84%	-8.02%	-7.90%	-7.72%	-7.50%	-7.78%	-7.31%	-7.07%	-6.90%	-6.68%	-6.98%	-6.57%	-6.20%
EBIT (Operating Income)	4.30%	3.40%	3.98%	3.55%	3.54%	3.62%	3.63%	4.32%	3.77%	4.34%	3.81%	4.44%	4.79%	4.85%	5.13%	4.81%	5.15%	4.61%	5.67%	5.95%	5.61%	6.02%	6.39%
Interest Expense	-2.78%	-2.61%	-3.05%	-2.78%	-2.62%	-2.76%	-2.64%	-2.72%	-3.62%	-3.40%	-3.12%	-2.67%	-2.60%	-2.52%	-2.42%	-2.55%	-2.22%	-2.10%	-2.02%	-1.93%	-2.06%	-1.72%	-1.43%
Restructuring and impairment charges	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-1.77%	0.00%	0.00%	-0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Debt extinguishment costs	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-2.78%	0.00%	0.00%	-0.66%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Loss on sale of subsidiary	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	-1.84%	0.00%	0.00%	-0.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Foreign currency gain / loss	-0.05%	-0.03%	-0.24%	-0.22%	-0.26%	-0.19%	-0.17%	-0.41%	0.22%	0.10%	-0.06%	0.15%	-0.05%	-0.02%	0.09%	0.04%	0.12%	0.13%	0.12%	0.12%	0.12%	0.12%	0.07%
Other Income (Expense)	-0.11%	-0.11%	-0.30%	-0.15%	-0.02%	-0.14%	-0.29%	0.14%	-0.19%	-0.22%	-0.14%	-0.19%	-0.26%	-0.28%	-0.29%	-0.06%	-0.25%	-0.24%	-0.23%	-0.21%	-0.06%	-0.05%	-0.05%
Equity in net income / loss of unconsolidated subsidia	2.07%	0.08%	0.92%	0.82%	1.24%	0.78%	11.10%	1.80%	5.09%	7.19%	6.36%	7.58%	7.39%	7.15%	6.88%	7.24%	6.71%	6.36%	6.09%	5.83%	6.41%	6.03%	5.70%
Pretax Income	3.43%	0.73%	1.32%	1.22%	1.89%	1.30%	11.63%	-3.25%	5.28%	8.02%	5.34%	9.31%	9.26%	9.18%	9.39%	9.48%	9.51%	9.76%	9.63%	9.75%	10.02%	10.35%	10.69%
Income Tax Expense/Benefit	-0.45%	-0.21%	-0.87%	-0.67%	8.94%	1.89%	-0.42%	-0.20%	-0.26%	-0.40%	-0.32%	-0.47%	-0.46%	-0.46%	-0.47%	-0.46%	-0.48%	-0.49%	-0.48%	-0.49%	-0.48%	-0.52%	-0.53%
Consolidated Net Income	2.98%	0.52%	0.46%	0.55%	10.82%	3.19%	11.20%	-3.44%	5.01%	7.61%	5.01%	8.84%	8.80%	8.72%	8.92%	9.01%	9.03%	9.27%	9.15%	9.26%	9.54%	9.83%	10.16%
Income from discontinued operations	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Net Income available to Common Shareholders	2.98%	0.52%	0.46%	0.55%	10.82%	3.19%	11.20%	-3.44%	5.01%	7.61%	5.01%	8.84%	8.80%	8.72%	8.92%	9.01%	9.03%	9.27%	9.15%	9.26%	9.54%	9.83%	10.16%

DAR - Balance Sheet
(in millions of \$)

	2016	2017	2018E	2019E	2020E	2021E	2022E
Revenues	3,391.88	3,662.26	3,570.43	4,177.90	4,954.58	5,526.82	6,145.83
Assets:							
Cash and Cash Equivalents	114.86	106.92	306.77	368.21	416.30	410.51	596.32
Accounts Receivables Net	388.40	391.85	395.43	454.86	544.08	604.32	673.45
Inventories	330.82	358.18	348.71	408.33	484.07	540.07	600.51
Prepaid Expenses	29.98	38.33	34.83	34.38	35.84	35.02	35.08
Income taxes refundable	7.48	4.51	7.98	6.66	6.38	7.01	6.68
Other current assets	21.77	56.66	29.63	36.02	40.77	35.48	37.42
Total Current Assets	893.30	956.45	1,123.36	1,308.46	1,527.45	1,632.40	1,949.46
Net Property, Plant & Equipment	1,515.57	1,645.82	1,659.27	1,696.22	1,748.54	1,823.38	1,923.85
Net Intangible assets	711.93	676.50	642.84	610.85	580.45	551.57	524.12
Goodwill	1225.89	1301.09	1,327.11	1,327.11	1,327.11	1,327.11	1,327.11
Investment in unconsolidated subsidiaries	292.72	302.04	308.08	314.24	320.53	326.94	333.47
Deferred Tax Assets	14.99	14.04	15.13	14.72	14.63	14.83	14.73
Other Assets	43.61	62.28	58.83	54.91	58.68	57.47	57.02
Total Assets	4,698.02	4,958.23	5,134.62	5,326.51	5,577.38	5,733.69	6,129.77
Liabilities & Shareholders' Equity:							
Accounts Payable	180.90	217.42	201.19	241.73	282.92	317.69	352.11
Short-term debt	23.25	16.14	28.88	22.76	22.59	24.74	23.36
Income taxes payable	4.91	12.30	7.96	8.39	9.55	8.64	8.86
Accrued Expenses	242.80	313.62	319.90	326.29	332.82	339.48	346.27
Total Current Liabilities	451.85	559.48	557.93	599.17	647.89	690.54	730.60
Long-term debt	1727.70	1698.05	1,825.20	1,696.22	1,573.68	1,458.70	1,346.70
Deferred tax liabilities	346.13	266.71	324.51	312.45	301.22	312.73	308.80
Other liabilities	96.11	106.29	100.07	100.82	102.39	101.10	101.44
Total Liabilities	2,621.80	2,630.53	2,807.71	2,708.66	2,625.19	2,563.06	2,487.53
Common stock and paid-in capital	1,501.11	1,517.29	1,532.47	1,547.79	1,563.27	1,578.90	1,594.69
Treasury stock, at cost	-40.91	-44.06	-162.44	-261.44	-453.59	-587.11	-716.62
Accumulated Other Comprehensive Income/Loss	-340.01	-209.52	-300.00	-299.56	-258.14	-468.19	-506.14
Retained earnings	852.80	981.23	1,160.26	1,536.85	2,009.45	2,553.01	3,177.16
Common Shareholder's Equity	1,972.99	2,244.93	2,230.29	2,523.64	2,860.99	3,076.62	3,549.10
Noncontrolling interests	103.23	82.76	96.63	94.21	91.20	94.01	93.14
Total Equity	2,076.22	2,327.70	2,326.92	2,617.85	2,952.19	3,170.63	3,642.24
Total Liabilities & Shareholders' Equity	4,698.02	4,958.23	5,134.62	5,326.51	5,577.38	5,733.69	6,129.77

DAR - Common Size Balance Sheet

	2016	2017	2018E	2019E	2020E	2021E	2022E
Revenues	3,391.88	3,662.26	3,570.43	4,177.90	4,954.58	5,526.82	6,145.83
Assets:							
Cash and Cash Equivalents	3.39%	2.92%	8.59%	8.81%	8.40%	7.43%	9.70%
Accounts Receivables Net	11.45%	10.70%	11.08%	10.89%	10.98%	10.93%	10.96%
Inventories	9.75%	9.78%	9.77%	9.77%	9.77%	9.77%	9.77%
Prepaid Expenses	0.88%	1.05%	0.98%	0.82%	0.72%	0.63%	0.57%
Income taxes refundable	0.22%	0.12%	0.22%	0.16%	0.13%	0.13%	0.11%
Other current assets	0.64%	1.55%	0.83%	0.86%	0.82%	0.64%	0.61%
Total Current Assets	26.34%	26.12%	31.46%	31.32%	30.83%	29.54%	31.72%
Net Property, Plant & Equipment	44.68%	44.94%	46.47%	40.60%	35.29%	32.99%	31.30%
Net Intangible assets	20.99%	18.47%	18.00%	14.62%	11.72%	9.98%	8.53%
Goodwill	36.14%	35.53%	37.17%	31.77%	26.79%	24.01%	21.59%
Investment in unconsolidated subsidiaries	8.63%	8.25%	8.63%	7.52%	6.47%	5.92%	5.43%
Deferred Tax Assets	0.44%	0.38%	0.42%	0.35%	0.30%	0.27%	0.24%
Other Assets	1.29%	1.70%	1.65%	1.31%	1.18%	1.04%	0.93%
Total Assets	138.51%	135.39%	143.81%	127.49%	112.57%	103.74%	99.74%
Liabilities & Shareholders' Equity:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Accounts Payable	5.33%	5.94%	5.63%	5.79%	5.71%	5.75%	5.73%
Short-term debt	0.69%	0.44%	0.81%	0.54%	0.46%	0.45%	0.38%
Income taxes payable	0.14%	0.34%	0.22%	0.20%	0.19%	0.16%	0.14%
Accrued Expenses	7.16%	8.56%	8.96%	7.81%	6.72%	6.14%	5.63%
Total Current Liabilities	13.32%	15.28%	15.63%	14.34%	13.08%	12.49%	11.89%
Long-term debt	50.94%	46.37%	51.12%	40.60%	31.76%	26.39%	21.91%
Deferred tax liabilities	10.20%	7.28%	9.09%	7.48%	6.08%	5.66%	5.02%
Other liabilities	2.83%	2.90%	2.80%	2.41%	2.07%	1.83%	1.65%
Total Liabilities	77.30%	71.83%	78.64%	64.83%	52.99%	46.38%	40.48%
Common stock and paid-in capital	44.26%	41.43%	42.92%	37.05%	31.55%	28.57%	25.95%
Treasury stock, at cost	-1.21%	-1.20%	-4.55%	-6.26%	-9.15%	-10.62%	-11.66%
Accumulated Other Comprehensive Income/Loss	-10.02%	-5.72%	-8.40%	-7.17%	-5.21%	-8.47%	-8.24%
Retained earnings	25.14%	26.79%	32.50%	36.79%	40.56%	46.19%	51.70%
Common Shareholder's Equity	58.17%	61.30%	62.47%	60.40%	57.74%	55.67%	57.75%
Noncontrolling interests	3.04%	2.26%	2.71%	2.25%	1.84%	1.70%	1.52%
Total Equity	61.21%	63.56%	65.17%	62.66%	59.59%	57.37%	59.26%
Total Liabilities & Shareholders' Equity	138.51%	135.39%	143.81%	127.49%	112.57%	103.74%	99.74%

DAR - Historical Cash Flow Statement

(in millions of \$)

	2016	2017
Net cash provided / used by operating activities	391.04	410.59
Net income / loss	107.22	133.35
Adjustments to reconcile net income / loss to net cash provided / used by operating activities	283.81	277.23
Depreciation and amortization	289.91	302.10
Loss / gain on disposal of property, plant, equipment and other assets	1.74	-0.24
Gain on insurance proceeds from insurance settlements	-0.36	-1.43
Deferred taxes	-11.53	-98.81
Increase / decrease in long-term pension liability	-0.43	2.38
Stock-based compensation expense	10.33	17.60
Write-off deferred loan costs	0.53	0.77
Deferred loan cost amortization	11.17	8.74
Equity in net income / loss of unconsolidated subsidiaries	-70.38	-28.50
Distributions of earnings from unconsolidated subsidiaries	26.32	26.76
Changes in operating assets and liabilities, net of effects from acquisitions	26.51	47.86
Accounts receivable	-22.80	3.48
Income taxes refundable / payable	2.84	9.36
Inventories and prepaid expenses	15.34	-15.02
Accounts payable and accrued expenses	39.29	73.39
Other	-8.16	-23.34
Net cash used by investing activities	-243.19	-284.05
Capital expenditures	-243.52	-274.17
Acquisitions, net of cash acquired	-8.51	-12.14
Investment in unconsolidated subsidiary	0.00	-4.75
Gross proceeds from disposal of property, plant and equipment and other assets	7.33	8.09
Proceeds from insurance settlement	1.54	6.05
Payments related to routes and other intangibles	-0.02	-7.14
Net cash provided / used by financing activities	-183.87	-154.85
Proceeds from long-term debt	36.33	33.40
Payments on long-term debt	-204.43	-149.62
Net payments on revolver	-4.75	-5.44
Net cash overdraft financing	1.07	-0.71
Deferred loan costs	-3.88	-6.72
Issuance of common stock	0.19	0.02
Repurchase of treasury stock	-5.00	0.00
Minimum withholding taxes paid on stock awards	-1.84	-3.05
Addition / deductions of noncontrolling interest	0.00	-17.45
Distributions to noncontrolling interests	-2	-5
Effect of exchange rate changes on cash	-6.297	20.528
Net increase / decrease in cash and cash equivalents	-42.32	-7.79
Cash and cash equivalents at beginning of period	156.88	114.56
Cash and cash equivalents at end of period	114.56	106.77

DAR - Forecasted Cash Flow Statement
(in millions of \$)

	2018E	2019E	2020E	2021E	2022E
Operating Activities:					
Net Income / Starting Line	179.03	376.59	472.60	543.56	624.15
D&A expense	315.55	324.96	345.77	363.06	381.21
Change in Net Deferred Tax Liabilities	56.71	-11.65	-11.14	11.31	-3.83
Change in operating assets and liabilities:					
Change in Accounts Receivable	-3.58	-59.43	-89.21	-60.24	-69.13
Change in Inventories	9.47	-59.61	-75.74	-56.00	-60.44
Change in Prepaid Expenses	3.50	0.45	-1.47	0.83	-0.06
Change in Other Current Assets	27.03	-6.39	-4.75	5.30	-1.95
Change in Net Taxes Payable	-7.81	1.75	1.43	-1.54	0.55
Change in Accounts Payable	-16.23	40.53	41.20	34.76	34.42
Change in Accrued Expenses	6.27	6.40	6.53	6.66	6.79
Net Operating Cash Flow	569.95	613.60	685.23	847.68	911.72
Investing Activities:					
Capital expenditures	-329.00	-361.90	-398.09	-437.90	-481.69
Change in Intangible Assets	7.64	31.99	30.40	28.88	27.45
Change in Investments	-6.04	-6.16	-6.28	-6.41	-6.54
Change in Other LT Assets	3.45	3.92	-3.77	1.20	0.45
Net Investing Cash Flow	-323.95	-332.15	-377.75	-414.22	-460.33
Financing Activities					
Change in debt	139.89	-135.11	-122.70	-112.83	-113.38
Change in other LT liabilities	-6.22	0.75	1.57	-1.30	0.34
Shares Issued/Repurchased	-118.38	-99.00	-192.14	-133.52	-129.51
Dividends paid	0.00	0.00	0.00	0.00	0.00
Net Financing Cash Flow	15.29	-233.36	-313.27	-247.65	-242.55
Net change in cash and cash equivalents	261.29	48.09	-5.79	185.81	208.84
Cash at the beginning of the period	106.92	368.21	416.30	410.51	596.32
Cash at the end of the period	368.21	416.30	410.51	596.32	805.15

DAR

WACC Calculations:

Risk Free Rate:	3.46%
Beta:	1.05
ERP:	4.80%
Cost of Equity	8.50%
Pre-tax cost of debt	4.82%
Marginal tax rate	5.00%
Cost of Debt	4.58%
Shares Outstanding	164.65
Current Price:	\$20.97
Market Value of Equity	3452.73
Short Term Debt	16.14
Long Term Debt	1698.05
PV of Operating Leases	196.95
Total Debt + PV of Operating Leases	1911.14
Total Value of Firm	5363.87
WACC	7.10%

DAR - Value Drivers (in millions of \$)	WACC	7.10%	Cost of Debt	4.82%	Tax Rate	5.00%	
	2016	2017	2018E	2019E	2020E	2021E	2022E
Revenue	3,391.88	3,662.26	3,570.43	4,177.90	4,954.58	5,526.82	6,145.83
(-) COGS Purchased products	-2,641.73	-2,880.25	-2,765.12	-3,228.42	-3,828.52	-4,270.71	-4,749.04
(-) Depreciation & Non Goodwill Amortization Expense	-289.91	-302.10	-315.55	-324.96	-345.77	-363.06	-381.21
(-) Other Operating Expenses	-314.41	-347.49	-353.76	-423.54	-502.30	-560.31	-623.07
(+)Interest on Operating Leases		6.91	9.50	9.57	9.79	10.09	10.52
EBITA	145.83	139.33	145.48	210.55	287.77	342.82	403.03
Less Adjusted Taxes							
Income Tax Provision	-15.32	69.15	-11.60	-19.40	-23.94	-28.61	-32.85
(-)Tax on Non-Operating Income	-3.23	-0.82	-8.29	-15.08	-16.04	-16.72	-17.61
(+)Tax Shield on Interest expense	4.71	5.06	5.56	5.33	5.11	4.75	4.38
(+)Tax Shield on Interest on Operating Leases		0.35	0.47	0.48	0.49	0.50	0.53
Adjusted Taxes	-13.84	73.74	-13.86	-28.67	-34.38	-40.08	-45.55
Change in net DTL	-13.18	-78.48	56.71	-11.65	-11.14	11.31	-3.83
NOPLAT	118.81	134.59	188.34	170.23	242.25	314.06	353.66
NOPLAT Growth		13%	40%	-10%	42%	30%	13%
Cash	114.86	106.92	306.77	368.21	416.30	410.51	596.32
Excess Cash (Cash less 2% Sales, >= 0)	47.02	33.67	235.36	284.65	317.21	299.97	473.40
Normal Cash	67.84	73.25	71.41	83.56	99.09	110.54	122.92
Accounts Receivable	388.40	391.85	395.43	454.86	544.08	604.32	673.45
Inventories	330.82	358.18	348.71	408.33	484.07	540.07	600.51
Other Current Assets	59.23	99.50	72.44	77.06	83.00	77.50	79.19
Operating CA	846.28	922.77	888.00	1,023.81	1,210.24	1,332.43	1,476.06
Accounts Payable	180.90	217.42	201.19	241.73	282.92	317.69	352.11
Income Tax Payable	4.91	12.30	7.96	8.39	9.55	8.64	8.86
Accrued Expenses	242.80	313.62	319.90	326.29	332.82	339.48	346.27
Operating CL	428.60	543.34	529.05	576.41	625.30	665.80	707.23
Operating WC	417.68	379.43	358.95	447.40	584.94	666.63	768.83
Net PPE*	1,515.57	1,645.82	1,659.27	1,696.22	1,748.54	1,823.38	1,923.85
PV of Operating Leases	143.20	196.95	198.56	202.98	209.24	218.20	230.22
Net intangible assets	711.93	676.50	642.84	610.85	580.45	551.57	524.12
Other Assets	43.61	62.28	58.83	54.91	58.68	57.47	57.02
Other LT Operating Assets	898.74	935.73	900.23	868.74	848.37	827.24	811.36
Other long-term liabilities	96.11	106.29	100.07	100.82	102.39	101.10	101.44
Other LT Operating Liabilities	96.11	106.29	100.07	100.82	102.39	101.10	101.44
Invested Capital	2,735.88	2,854.70	2,818.38	2,911.53	3,079.45	3,216.15	3,402.60
Beginning Invested Capital		2,735.88	2,854.70	2,818.38	2,911.53	3,079.45	3,216.15
NOPLAT	118.81	134.59	188.34	170.23	242.25	314.06	353.66
ROIC		4.92%	6.60%	6.04%	8.32%	10.20%	11.00%
Change in Invested Capital		118.82	-36.32	93.15	167.92	136.70	186.45
NOPLAT	118.81	134.59	188.34	170.23	242.25	314.06	353.66
FCF	118.81	15.76	224.66	77.08	74.33	177.36	167.21
Beginning Invested Capital		2,735.88	2,854.70	2,818.38	2,911.53	3,079.45	3,216.15
ROIC	0.00%	4.92%	6.60%	6.04%	8.32%	10.20%	11.00%
EP	0.00	-59.76	-14.45	-29.98	35.43	95.30	125.19

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

Key Inputs:

CV Growth	3.00%
CV ROIC	10.71%
WACC	7.10%

<i>Fiscal Years Ending Dec. 31</i>	2018E	2019E	2020E	2021E	2022E
	1	2	3	4	5
DCF Model					
NOPLAT	188.34	170.23	242.25	314.06	353.66
Beginning Invested Capital	2854.70	2818.38	2911.53	3079.45	3216.15
Ending Invested Capital	2818.38	2911.53	3079.45	3216.15	3402.60
Change in Invested Capital	-36.32	93.15	167.92	136.70	186.45
ROIC	6.6%	6.0%	8.3%	10.2%	11.0%
Free Cash Flows	224.66	77.08	74.33	177.36	167.21
CV					6389.20
PV of Cash Flows	209.76	67.20	60.50	134.78	4652.05
Value of Operating Assets	5124.29				
Excess Cash	33.67				
Short Term Investments	391.85				
Noncontrolling interests (equity)	82.76				
Long Term Investments	676.50				
Value of Non-Operating Assets	1184.78				
Total Debt + PV of Operating Leases	1911.14				
Value of Equity	4397.93				
Shares Outstanding	164.65				
Intrinsic Value per share	\$26.71				
Value Adjusted for Partial Year	\$28.59				
EP Model					
Beginning Invested Capital	2855	2818	2912	3079	3216
ROIC	7%	6%	8%	10%	11%
Economic Profit	-14	-30	35	95	125
CV					2987
PV of Economic Profit	-13	-26	29	72	2208
PV of Economic Profit	2270				
Beginning Invested Capital	2855				
Value of Operating Assets	5124				
Excess Cash	34				
Short Term Investments	392				
Long Term Investments	677				
Noncontrolling interests	83				
Value of Non-Operating Assets	1185				
Total Debt + PV of Operating Leases	1911				
Value of Equity	4398				
Shares Outstanding	165				
Intrinsic Value per share	\$26.71				
Value Adjusted for Partial Year	\$28.59				
Up/Downside	36.34%				

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

<i>Fiscal Years Ending Dec. 31</i>	2018E	2019E	2020E	2021E	2022E
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EPS	\$ 1.12	\$ 2.41	\$ 3.19	\$ 3.78	\$ 4.47
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Key Assumptions

CV growth	3.00%
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CV ROE	19.69%
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Cost of Equity	8.50%
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Future Cash Flows:

	1	2	3	4	5
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P/E Multiple (CV Year)					15.41
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EPS (CV Year)					4.47
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Future Stock Price					68.91
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Dividends Per Share	\$ -	\$ -	\$ -	\$ -	\$ -
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Discounted Cash Flows	\$ -	\$ -	\$ -	\$ -	\$ 49.72
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Intrinsic Value	\$ 49.72
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Value Adjusted for Partial Year	\$ 53.22
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DAR*Relative Valuation Models*

Ticker	Company	Price	EPS		P/E		EV/EBITDA	
			2018E	2019E	'18	'19	2018E	2019E
TSN-US	Tyson Foods A	61.56	5.92	6.08	10.39	10.12	7.69	7.56
MFI-CA	Maple Leaf Foods	22.51	0.97	1.31	23.26	17.20	10.85	9.00
REGI-US	Renewable Energy Group	28.69	6.46	1.55	4.44	18.51 --	--	--
POST-US	Post Holdings	89.19	4.17	5.20	21.38	17.16	10.48	9.33
QRHC-US	Quest Resource Holding	2.28	-0.10	0.17 --		13.82 --	--	--
Average*					14.87	15.36	9.67	8.63

DAR-US	Darling Ingredients	20.97	1.12	2.41	28.11	21.15	11.06	9.99
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Implied Value:

Relative P/E (EPS18)	\$ 16.64
Relative P/E (EPS19)	\$ 37.08
Relative EV/EBITDA '18	\$ 16.38
Relative EV/EBITDA '19	\$ 19.13

DAR

Present Value of Operating Lease Obligations (2017)

Year	Operating Leases
2018	45.345
2019	39.414
2020	26.180
2021	14.770
2022	61.300
Thereafter	13.186
Total Minimum Payments	200.195
Less: Interest	3
PV of Minimum Payments	196.949

Capitalization of Operating Leases

Pre-Tax Cost of Debt	4.82%
Number Years Implied by Year 6 Payment	1.0

Year	Lease Commitment	PV Lease Payment
1	45.345	45.3
2	39.414	39.4
3	26.18	26.2
4	14.77	14.8
5	61.3	61.3
6 & beyond	13.186	9.9
PV of Minimum Payments		196.95

DAR

Present Value of Operating Lease Obligations (2016)

Year	Operating Leases
2017	39.481
2018	35.653
2019	31.035
2020	19.258
2021	7.421
Thereafter	14.019
Total Minimum Payments	146.867
Less: Interest	4
PV of Minimum Payments	143.200

Capitalization of Operating Leases

Pre-Tax Cost of Debt	4.82%
Number Years Implied by Year 6 Payment	1.9

Year	Lease Commitment	PV Lease Payment
1	39.481	39.5
2	35.653	35.7
3	31.035	31.0
4	19.258	19.3
5	7.421	7.4
6 & beyond	7.421	10.4
PV of Minimum Payments		143.20

		Beta								
DCF/EP Price	28.59	0.70	0.80	0.90	1.00	1.05	1.10	1.20	1.30	1.40
	3.00%	57.77	52.69	48.37	44.64	42.96	41.39	38.54	36.02	33.77
	3.50%	51.92	47.06	42.96	39.45	37.88	36.42	33.77	31.43	29.36
	4.00%	47.06	42.43	38.54	35.24	33.77	32.40	29.92	27.75	25.83
	4.50%	42.96	38.54	34.86	31.75	30.36	29.08	26.77	24.74	22.95
ERP	4.80%	40.80	36.50	32.93	29.92	28.59	27.35	25.13	23.18	21.47
	5.00%	39.45	35.24	31.75	28.81	27.50	26.29	24.12	22.23	20.56
	5.50%	36.42	32.40	29.08	26.29	25.06	23.92	21.88	20.10	18.53
	6.00%	33.77	29.92	26.77	24.12	22.95	21.88	19.95	18.27	16.80
	6.50%	31.43	27.75	24.74	22.23	21.12	20.10	18.27	16.68	15.29

		Cost of Debt								
DCF/EP Price	28.59	2.60%	2.70%	2.80%	2.90%	4.58%	3.10%	3.20%	3.30%	3.40%
	1.50%	60.51	59.40	58.33	57.29	43.73	55.31	54.36	53.44	52.55
	2.00%	51.86	51.02	50.20	49.41	38.72	47.88	47.15	46.43	45.74
	2.50%	45.22	44.55	43.91	43.28	34.64	42.07	41.48	40.91	40.35
	3.00%	39.95	39.41	38.89	38.38	31.24	37.39	36.92	36.45	35.99
Risk -Free	3.46%	35.98	35.53	35.10	34.67	28.59	33.84	33.43	33.04	32.65
	4.00%	32.12	31.75	31.39	31.04	25.92	30.35	30.01	29.68	29.36
	4.50%	29.14	28.82	28.52	28.21	23.80	27.62	27.33	27.05	26.77
	5.00%	26.59	26.32	26.05	25.79	21.95	25.28	25.03	24.79	24.54
	5.50%	24.39	24.15	23.92	23.69	20.31	23.25	23.03	22.81	22.60

		CV Growth								
DCF/EP Price	28.59	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
	8.71%	23.01	23.58	24.23	25.01	25.95	27.13	28.67	30.75	33.78
	9.21%	23.18	23.85	24.64	25.58	26.72	28.16	30.03	32.59	36.32
	9.71%	23.33	24.10	25.00	26.08	27.41	29.08	31.25	34.24	38.60
	10.21%	23.47	24.32	25.33	26.54	28.03	29.90	32.36	35.72	40.65
CV ROIC	10.71%	23.59	24.53	25.63	26.96	28.59	30.65	33.36	37.07	42.51
	11.21%	23.70	24.71	25.90	27.34	29.10	31.34	34.27	38.30	44.21
	11.71%	23.81	24.88	26.15	27.68	29.57	31.96	35.10	39.42	45.76
	12.21%	23.90	25.04	26.38	28.00	30.00	32.54	35.87	40.45	47.19
	12.71%	23.99	25.18	26.59	28.29	30.40	33.06	36.57	41.40	48.50

		CV Growth								
DDM Price	53.22	1.00%	1.50%	2.00%	2.50%	3.00%	3.50%	4.00%	4.50%	5.00%
	15.15%	43.01	44.45	46.11	48.06	50.35	53.11	56.47	60.68	66.09
	16.15%	43.19	44.75	46.55	48.64	51.12	54.10	57.73	62.27	68.11
	17.15%	43.36	45.02	46.93	49.16	51.80	54.97	58.84	63.68	69.89
	18.15%	43.51	45.26	47.27	49.63	52.41	55.75	59.83	64.92	71.48
CV ROE	19.69%	43.71	45.58	47.73	50.25	53.22	56.79	61.15	66.60	73.61
	21.15%	43.87	45.83	48.10	50.75	53.88	57.64	62.23	67.96	75.34
	22.15%	43.97	45.99	48.33	51.06	54.28	58.15	62.88	68.79	76.39
	23.15%	44.06	46.14	48.54	51.34	54.65	58.62	63.48	69.55	77.35
	24.15%	44.14	46.27	48.73	51.60	54.99	59.06	64.03	70.25	78.24