CFA Institute

CFA Institute Research Challenge
Hosted by
Southwest U. S. Research Challenge
West Texas A&M University

Recommendation: BUY
Target Price: $132.83
Closing Price (1/29/18): $110.76

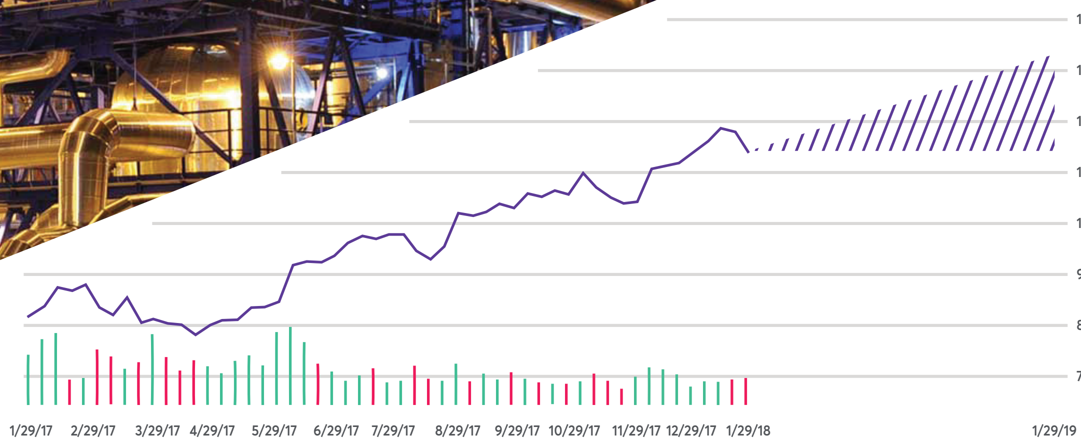
Stock Exchange: NYSE
Ticker: ANDV
Upside: +19.34%

Industry: Energy
Sector: Oil and Gas

Valuation Date: 1/29/18
52-Week High/Low: $75.11 - $121.71
Beta: 1.19
Market Cap: 17.28 B

Average Volume: 1.4 Mil
Dividend Yield: 2.11%
EV/EBITDA: 10.8x
Institional Holdings: 79.58%

BUY



Source: Historical Data, Team Design

Figure 1

Revenue Drivers

Refining
Total capacity of refineries
Price of crude oil

Logistics
Throughput

Marketing
Number of stores
Price of gasoline

Source: Company Data, Team Design

Executive Summary

Andeavor (ANDV) is a U.S. based large-cap midstream and downstream crude oil and gas company with three specialized operating segments: refining, logistics, and marketing. Each operating segment is crucial to the maximization of margins within Andeavor's integrated value chain.

Investment Recommendation

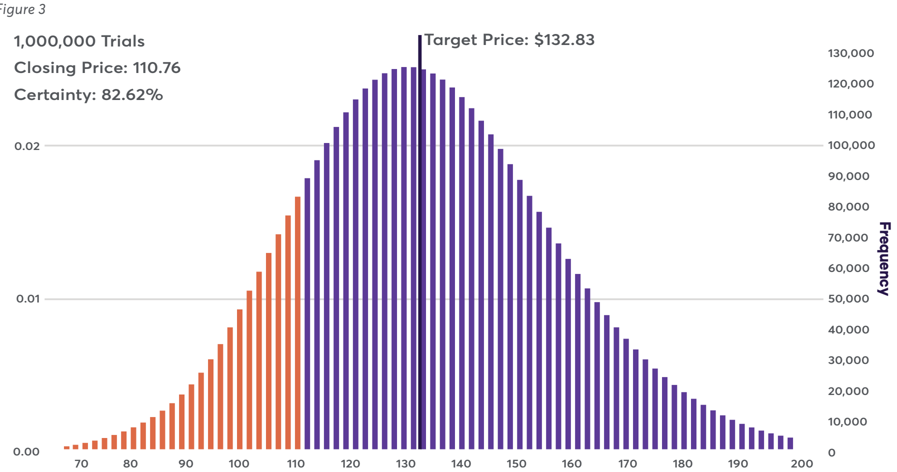
We initiate our coverage of Andeavor with a BUY recommendation and a one-year target price of $132.83 per share based on an 80/20 combination from the Discounted Cash Flow (DCF) model and relative valuation using the enterprise multiple. Andeavor currently has an undervalued stock price. We recommend a BUY based on: (1) A DCF valuation model that yields an intrinsic value of $132.18 per share. (2) Incorporating a relative valuation model by using a four-year average enterprise multiple that obtains an intrinsic value of $135.43. (3) A Monte Carlo model confirms 82.62% of the iterations to be above the closing stock price. The target price reflects a premium of 19.34% from the January 29, 2018 closing price of $110.76. Our recommendation is derived by:
Andeavor utilizes a well-integrated operating system to capitalize on their three business segments without owning any high-risk upstream operations. Andeavor relies on synergies from their operating units to create the most profitable outcomes. Andeavor adapts to a highly integrated value chain, positioning themselves well against their competition in the market. The undervaluation of Andeavor signifies to investors the opportunity to invest in a growing competitor in the United States oil and gas sector.

Figure 2

Valuation	DCF	EV/EBITDA
Estimated Price	$132.18	$135.43
Weights	80%	20%
Target Price	$ 132.83	

Source: Company Data, Team Design

Figure 3



Highlights

- Volatile crude oil prices are a significant factor for the industry, but Andeavor displays resilience in the midst of oil price fluctuations.
- Strategically acquiring assets in niche market locations supporting midstream and downstream operations gives Andeavor a distinct competitive advantage over their peers.
- Deregulation in Mexico, starting in 2014, enabled Andeavor to become the frontrunner of PEMEX expansion. The Mexican market opens up tremendous opportunities for continued revenue growth.
- Operating margins of Andeavor are expected to increase 40% by 2022.
- Investment risks include the volatility of crude oil prices, acquisition risk, and unpredictable global conditions.

Figure 4

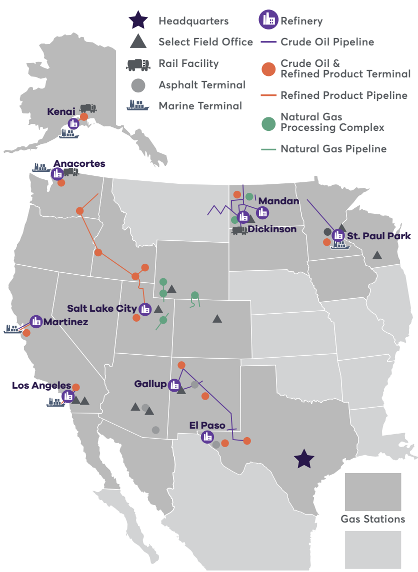
Business Highlights

- Number of Refineries 10
- Refining Capacity 1.2 million bpd
- Employee Count > 13,000
- Retail Sites > 3,100
- Barrels of Storage Capacity > 46 million
- Miles of Pipelines > 5,300
- Marine, Rail and Storage Terminals 40
- Natural Gas Processing Complexes 6
- States Where We Operate 18

Source: Company Data

Figure 5

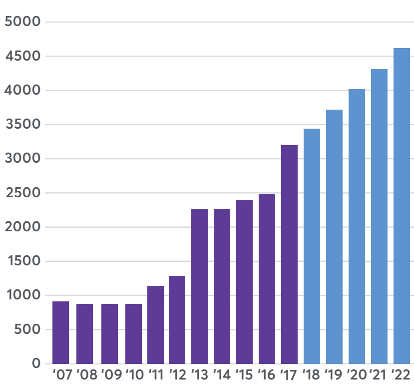
Refining, Logistics, Marketing Map



Source: Company Data, Team Design

Figure 6

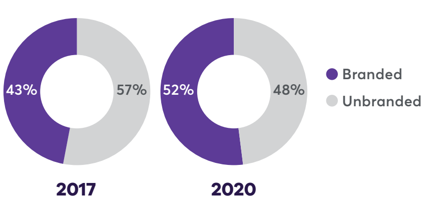
Number of Stores



Source: Company Data, Team Analysis

Figure 7

Branded vs Unbranded



Source: Company Data, Team Design

Business Description

Andeavor (ANDV) is a downstream and midstream oil company incorporated in 1968 and headquartered in San Antonio, Texas. Andeavor is an asset growth-focused company with many strategic acquisitions like the recent August 1, 2017 Western Refining acquisition. Before this date, Andeavor and Andeavor Logistics (ANDX) were known as Tesoro and Tesoro Logistics: this name change reflects a rebranding of the company to match their updated vision of the future.

Company Profile

Andeavor's primary business operations are concentrated in three segments: refining, logistics, and marketing.

Refining

Andeavor's refining segment refines crude oil and feedstocks into various finished products, such as gasoline, jet fuel, diesel fuel, and asphalt. This enables Andeavor to sell to a wide range of customers. The total capacity of Andeavor's ten refineries is approximately 1.2 million barrels of oil per day. Before the Western Refining acquisition, Andeavor was only able to produce around 875 thousand barrels of oil per day (Mbpd). While Andeavor is a price taker regarding the cost of crude oil, they are able to exercise some **control over their capacity,** which allows them to **maximize the amount of crude oil that is converted** into refined products.

Logistics

Andeavor owns Andeavor Logistics LP, a midstream MLP that trades under the ticker ANDX. ANDX processes both crude oil and natural gas based products, but the majority of throughput is crude oil based products. ANDX has three main segments: gathering, processing, and terminalling and transportation.

Gathering: The gathering segment of ANDX is responsible for providing crude oil, natural gas, and produced water to the refineries to be processed. Primary transportation includes rail and pipelines, but trucks are also used.

Processing: The processing segment of ANDX processes natural gas and fractionation complexes and is dependent on the spread between sales price of gasoline and the price to replace the natural gas liquids (NGLs) that were sold. The processing portion utilizes keep-whole agreements to maintain throughput.

Terminalling and Transportation: The terminalling and transportation segment of ANDX is able to store both crude oil and refined products. In addition to these storage facilities, ANDX owns and leases trucks, rail cars, and pipelines to transport products.

On January 3, 2018, Andeavor announced its plans to acquire Rangeland Energy II. Rangeland operates in the Permian Basin, and the 100% acquisition will net Andeavor a new crude oil pipeline, three new storage facilities, and a frac sand storage and truck loading facility. This acquisition is expected to close near the end of the first quarter of 2018. Andeavor will transfer ownership of Rangeland Energy II to ANDX at a later date. As Andeavor acquires more logistics assets, their amount of **total throughput increases, which increases segment revenue.**

Marketing

Andeavor has begun to increase their number of retail stations and expand their convenience store margins by improving storefronts and transitioning from unbranded stations to retail/branded stations. In order to achieve growth in the marketing segment, Andeavor has three distinct channels:

Retail and Branded: The refined products that Andeavor provides are marketed with brands such as Arco, Exxon, Mobil, Conoco, Tesoro, Giant, SuperAmerica, USA Gasoline, and Shell. Andeavor plans to expand the retail and branded portion of their marketing channels because the profit margins are much higher compared to the profit margins of the unbranded channel.

Unbranded: Andeavor sells to independent marketers through the use of Firebird Fuel and Fleet Card Services, a program that allows for card lock fuel sites. This enables constant access to fuel, as long as the user has a FleetWide card.

Commercial and Value Chain: Andeavor uses the commercial and value chain operation to sell crude oil and finished products to the marketing and refining systems. Two of the primary commercial products that Andeavor produces are jet fuel for aviation and heavy fuel for the marine industries. The commercial and value chain also manages asphalt operations.

Andeavor is **expanding their operations into Latin America** through a recent contract with Petróleos Mexicanos (PEMEX), Mexico's state owned oil company, which grants them access to PEMEX pipelines and terminals, as well as the opportunity to expand their marketing segment. The **addition of branded retail stations enables Andeavor to increase segment revenue.**

Industry Overview

The oil and gas industry is in the mature life-cycle stage with high volatility and high barriers to entry (see Appendix 19). As a whole, the industry expects to grow at an annualized rate of 1.5% over the next five years. We calculate a company specific long-term growth rate of 1.65% by weighting the refining, logistics, and marketing segments based on percentage of total revenue.

Figure 8

Industry Overview

Operations

Petroleum refining and gas station industries as a downstream and partially midstream company

Supply

Wholesalers that drill and extract natural gas gasoline and petroleum

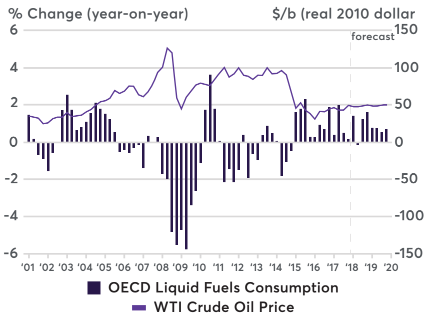
Demand

Gas stations, airlines, and petrochemical manufacturers

Source: Team Analysis

Figure 9

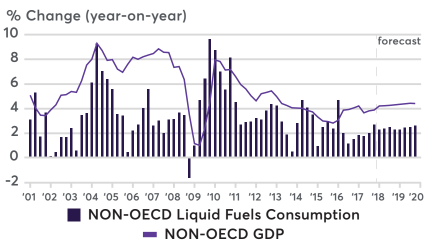
OECD Consumption and WTI Price



Source: EIA, Team Creation

Figure 10

Non-OECD Consumption and GDP



Source: EIA, Team Design

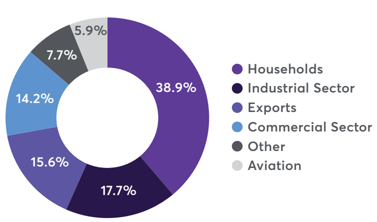
Figure 11

Vehicle Miles Traveled

Source: Fred, Team Design

Figure 12

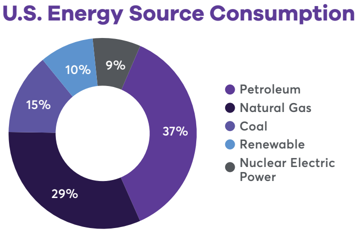
Sources of Demand



Source: Ibis World, Team Design

Figure 13

U.S. Energy Source Consumption



Source: Ibis World, Team Design

Price of Crude Oil

The most significant variable within the industry is the price of crude oil. Historically, Andeavor's stock price is highly correlated with the world price of oil. After the creation of Tesoro's MLP, Tesoro Logistics, Andeavor has displayed resilience in the midst of an oil price drop. IBIS World optimistically predicts that crude oil prices will rise at an annualized rate of 2.5% over the next five years, reaching the price of $61.11. Conversely, KIS FUTURES brokerage is expecting **WTI crude oil prices to decrease** over the next five years: predicting crude oil prices to be $53.68 per barrel. The predictions based on the futures market are consistent with Andeavor's predictions, as well as our predictions for the future price of oil. Andeavor mitigates the volatility of the world price of oil by properly **managing crack spread,** which Andeavor estimates to be $15 a barrel. In the long run, Andeavor is able to **pass down costs to customers;** however, in the short run, they are subject to the crack spread potentially narrowing.

GDP of non-OECD vs OECD countries

According to the U.S. Energy Information Administration, there is a strong correlation between the GDP of non-OECD countries (emerging markets) and global liquid fuels consumption. Industrialization has rapidly increased the manufacturing sector of developing countries, allowing for strong growth. For instance, the GDP of mainland China, which is the largest non-OECD country, has relatively low volatility, and it is expected to grow at an annualized rate of 4.9% over the next five years. In contrast, the key demand factor for liquid fuels in OECD countries is price. Currently, Andeavor only sells refined products to OECD countries: USA, Canada, and Mexico. However, the industry as a whole benefits from an **increase in global demand** from emerging markets, and T.Rowe Price forecasts emerging markets to outpace developed markets throughout 2018. As oil prices lower, which negatively affects Andeavor's revenue, **they stand to gain an increase in demand** from the US, Canada, and Mexico.

Increasing Vehicle Miles Traveled

The number of vehicle miles travelled (VMT) has a strong correlation to the consumption of transportation fuels such as gasoline and diesel. This measure does not include the miles travelled of trains and planes. In 1975, Congress created the Corporate Average Fuel Economy (CAFE) standard to reduce the amount of energy used by vehicles. More fuel efficient vehicles in the future could offset the demand for fuel and negatively impact Andeavor, but the number of VMT is expected to increase over the next five years at annual growth rate of 1.3%. Projected **increases in VMT mitigates the threat of more fuel efficient vehicles.**

Household Consumption Will Drive Gasoline Demand

Households are the largest source of demand for petroleum products. Gasoline consumption by households has a strong connection to disposable income and the overall economy. According to the January 2018 Consumer Confidence Survey, consumers still remain confident that growth in the latter part of 2017 will continue in 2018. As consumer confidence rises, our team believes that people will become more likely to travel, which increases the consumption of gasoline. This further supports Andeavor's strategy to **increase its number of retail stations** to meet gasoline demand.

A Future Shift in the Industrial and Commercial Sectors

The industrial and commercial sectors combined make up the second largest demand drivers for petroleum products. The use of the internet gives consumers greater access to sellers across the country, which makes it easier for them to purchase goods online. As online purchases increase, more products will need to be shipped to consumers and distribution centers via trucks. This will **increase the throughput volume demand** increasing revenues in Andeavor's logistics segment. By maintaining their unbranded agreements with third parties, Andeavor will be able to meet the demand of the trucking industry.

Jet Fuel Market Expansion

The aviation industry is the primary consumer of jet fuel, and it is expected to expand in the future due to a rising global economy. The Anacortes, Kenai, Mandan, Los Angeles, Salt Lake City, and St. Paul Refineries all produce jet fuel, and most are within a 50-mile radius of a local airport. Andeavor currently owns 50% fee interest in a pipeline that transports fuel from their LA refinery to the Los Angeles International Airport. Although jet fuel does not make up a large percentage of Andeavor's refining yields, the **strategic locations** of their refineries and logistics assets near airports allow them to **expand into the niche jet fuel market** in the future.

Power of Master Limited Partnerships

It is a common practice for companies within the refining industry to create master limited partnerships (MLP). MLPs often attract investors by offering higher dividend yields compared to the average stock. The primary purpose of a MLP is to help the general partners (the parent company). Many of Andeavor's competitors also have master limited partnerships. For instance, Valero is the general partner of Valero Energy Partners, which is Valero's logistics division. Marathon Petroleum Corporation has the most similar MLP to Andeavor because it has a limited partner that is a logistics entity. In 2011, Tesoro (Andeavor) formed Tesoro Logistics LP, which is now known as Andeavor Logistics LP. Andeavor Logistics LP was created as a MLP to gather, process, and transport crude oil and refined products. Andeavor Logistics LP also offers **tax advantages** to Andeavor because

Figure 14

U.S. Monthly Biodiesel Production

Source: U.S. Energy Information Administration, Team Design

Figure 15

Peer Selection Process

Publicly Traded Energy Companies	287
Energy Companies in North America	175
Large Cap Energy Companies	35
Energy Companies with Three Distinct Segments	7
Engergy Companies with a Market Cap Between $34 B and $54 B	3

Source: Team Analysis

much of the capital from the logistics company is reinvested into Andeavor. This allows Andeavor to **mitigate volatility risk** by using their MLP to support their stock price while also retaining dividends.

Renewable Energy Opportunities

As the renewable energy industry continues to expand and consumers become more environmentally conscious, companies and consumers have shifted towards more environment friendly fuels rather than using petroleum. Andeavor is currently making strides to **adapt to the renewable shift:** the Dickinson Refinery is working on a method of creating a renewable diesel supply in the California market by working with renewable energy facilities to create gasoline and Fluid Catalytic Cracker feed from solid waste and wood biomass.

Competitive Positioning

Peer Selection Process

Andeavor's three main peers are **Marathon Petroleum (MPC), Valero (VLO), and Phillips 66 (PSX)**. We identified Andeavor's peers using a five-step process outlined in Figure 15. Peers that are publicly traded companies have SEC filings, making it easier to compare reported financials. All three peers have operations in the same geographic regions as Andeavor and three distinct segments: refining, logistics, and marketing. See Appendix 14 for more detailed information about the peer competitors.

Acquisition Timeline

Figure 16

1998
Acquired the Kapolei, Hawaii refinery and the Anacortes, Washington refinery

2000
Acquired the North Dakota and Utah refineries

Acquired 46 retail sites

2002
Acquired the Golden Eagle refinery and 70 Beacon retail sites

2006
Entered into agreements with MYOB and Kauai Petroleum respectively to purchase retail sites: 13 in western Washington and 4 in Kauai

2007
Entered into agreement to purchase the LA refinery (Wilmington) and 250 Southern California Shell branded retail sites from Shell Oil Products USA.

Purchased Shell's LA refinery and 278 operating stations

Agreement to purchase 140 USA Petroleum retail sites in California

Purchased USA Gasoline brand and 138 operating stations

2010
Entered into an agreement to acquire 300 shell branded wholesale supply contracts in North Dakota, South Dakota, Minnesota, Utah and parts of Idaho

2012
Entered agreement to purchase logistics assets of Chevron Northwest Products System for 400 million

2013
Purchased BP's integrated Southern California refining and marketing business including the 266,000 bpd high complexity refinery, Carson refinery, and over 800 dealer stations

Closed acquisition of Northwest Product Pipeline and terminal system for approximately 355 million from Chevron Pipeline company and northwest terminalling company

2014
TLLP acquired 3 marketing terminals, storage facilities and refined products pipeline from Tesoro

TLLP closed remaining portion of the acquisition of certain terminalling and pipeline assets from Tesoro for 270 million

Agreed to acquire QEP field services for 2.5 billion including 58% ownership in QEP midstream partners

2017
Completed acquisition of Western Refinery and western refining logistics

Announced agreement to acquire Rangeland Energy II, LLC

Source: Company Data, Team Design

Figure 17

Competitor Gulf Positioning

Source: Team Analysis

Strategic Acquisition

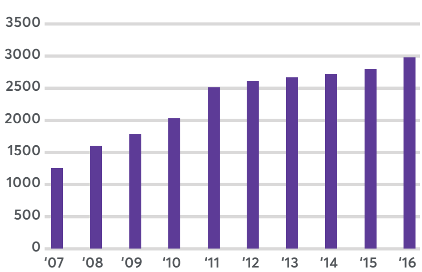
Although there are high barriers to entry (see appendix 19), competition among established peers remains intense. Andeavor's ability to strategically acquire assets that support their midstream and downstream operations gives them a **distinct competitive advantage** over their competitors. Additionally, while there is risk associated with each acquisition, Andeavor takes steps to mitigate these risks, discussed further in the Investment Risks section.

Location, Location, Location

The Gulf Coast makes up over 45% of the United States' total petroleum refining capacity and 51% of the natural gas processing capacity in the United States. Andeavor's lack of Gulf Coast refineries was especially advantageous during Hurricane Harvey, which knocked out about one quarter of U.S. refining capacity, causing a ripple effect on other inland refineries. Andeavor does not have refineries in the Gulf Coast region, which gives them a strategic advantage in California, the Pacific Northwest, and the Mid-Continent. As long as products do not have to be transported more than 150 miles, Andeavor maintains an advantage. Although Andeavor has a smaller market cap than their peers, the company has positioned themselves in **specific geographic locations with growing populations**, which will increase their market share.

Figure 18

U.S. Exports of Refined Products



Source:EIA, Team Creation

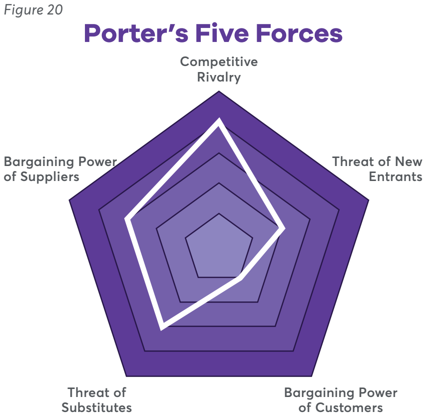
International Markets

Two of Andeavor's three peers, Valero and Phillips 66, operate refineries internationally which makes **expansion into foreign markets** key as the middle class and economies of developing countries grow. Up until the last decade, the energy market in Mexico was a state-controlled competitive market. Historically, all of Mexico's oil demands were provided by PEMEX; however, after the approval of a new energy reform, private companies were allowed to compete for contracts in the Mexican oil and petroleum industry. Andeavor's development of its logistics in Mexico through contracts with PEMEX is an important foothold and gives them a **first mover advantage**, especially as PEMEX begins phase two of its logistic open season in Spring 2018, which opens the market to Andeavor's peers.

Figure 19

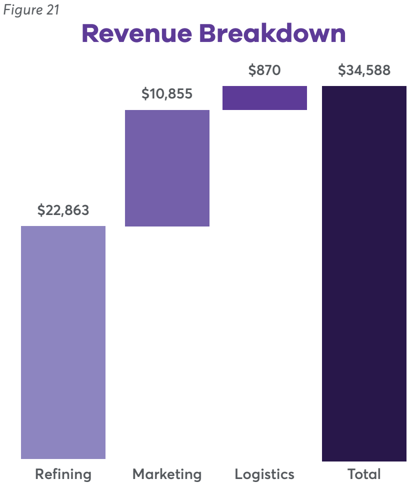
Source: Team Analysis

Figure 20



Source: Team Analysis

Figure 21



Source: Company Data, Team Analysis

Investment Summary

We issue a **BUY** recommendation for Andeavor with a **target price of $132.83.** Our target price is based on an 80% DCF and a 20% EV/EBITDA weight factor, discussed further in the Valuation section. We believe that Andeavor is poised to perform well over the coming months. The key investment drivers for our position are listed below.

Investment Drivers

Strategic Positioning: Andeavor does not own any refineries on the Gulf Coast which enables them to focus on their California and midcontinent refineries and logistics assets. Andeavor's Martinez refinery is the second largest refinery in Northern California, which strengthens Andeavor's market share in one of the fastest growing states in the U.S. Access to the Pacific Coast also enables Andeavor to receive crude oil imports from Asia. The Pacific Coast is also less subject to hurricanes when compared to the Gulf Coast. Andeavor's strategic Western Refining acquisition (22.6% of capacity) enables them to cater to Texas, the state with the nation's largest annual population growth. We believe this places Andeavor in a **great position moving forward** compared to their peers. Although much less populated than California or Texas, Andeavor owns the only two refineries in North Dakota. Having the majority market share in the premier Bakken region and North Dakota's underserved markets gives Andeavor an additional geographic advantage.

Deregulation in Mexico: Following the historic announcement of the **PEMEX contract,** Andeavor opened their first ARCO retail station in Mexico in August 2017. Andeavor plans to increase the number of stations in Northwest Mexico by an additional 200-350 stations over the next several years. The terminalling and transportation contract with PEMEX allows for 30,000+ bpd of refined products. The deregulation of PEMEX also increases **midstream expansion opportunities** for U.S. companies into Mexico.

Optimized Value Chain: As mentioned earlier, Andeavor pursues an acquisition and growth strategy. After increasing their refining capacity with the Western Refining acquisition, Andeavor is now focusing on **further growth in the logistics and marketing** areas of operation. Increased growth in Andeavor's logistics segment will give them greater access to feed stocks and lower input transportation costs. We believe that by expanding control over the downstream, midstream, and retail segments of their value chain, Andeavor will continue to gain market share and improve their margins.

Investment Concerns

Regulation Changes: Changes in environmental regulations such as the 2020 IMO Sulfur Cap, could change demand for low sulphur fuel oil. For investors in the oil and gas industry, regulation changes favor more socially responsible operations. Increases in environmental standards could **increase Andeavor's operating expenses** if they are required to add more scrubbers to reduce emissions. This is especially important in more highly regulation and environmentally friendly state such as California.

Development of Electric Vehicles: As electric vehicles become more popular with consumers and improvements are made to driving range, oil and gas companies are looking for new ways to adapt to **changing preferences.** In response, Andeavor is working to create renewable diesel from renewable sources.

Highly Competitive Market: As Andeavor continues to compete for market share against established companies with much larger market caps and more refineries, they face the potential risk of bidding wars. Overpayment of assets in the present could negatively impact Andeavor's profitability in the future. **Limited acquisition potentials** will also increase competition and promote greater efficiency among peers. These factors could hinder Andeavor's ability to expand their margins at the same rates they have in the past.

Valuation

Valuation Methods

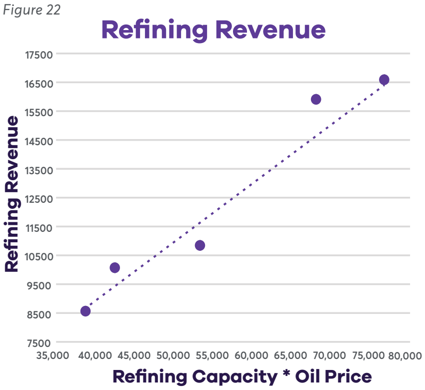
We use the percentage of sales method to forecast the financial statements since Andeavor is a margin business that has highly volatile revenues and expenses, as seen in the historical statements. However, we use a sum of the parts valuation to forecast the revenue due to different revenue drivers for each segment. We believe that by doing this we are able to **more accurately forecast revenue,** which is the most important value in a percentage of sales valuation.

Forecasting the Revenue

Historically, Andeavor has focused on their refining business to generate revenue, but over the past few years, Andeavor's marketing segment increased its percentage of total revenues from 18.77% in 2010 to over 66% in 2017. Over the same period, refining revenues declined from 81% to 31%. By diversifying their revenue streams, Andeavor manages their business risk. To gain a full picture of Andeavor's business and the areas that are generating revenue, we identify specific revenue drivers for each segment.

Starting with the refining segment, we examine multiple variables as potential drivers, concluding that the revenue drivers of the refining segment are the **price of oil** and Andeavor's **total refining capacity.** The first variable we identify is the price of oil because the price of oil is highly correlated to

Figure 22



Source: Company Data, Team Design

Figure 23

Required Rate of Return

Current Risk-free Rate (RFR	2.91%
Beta (β)	1.19
Historican Market Return (Rmarket)	9.45%
Required Return [RFR+β*(Rmarket-RFR)]	**10.93%**

Source: Team Analysis

Figure 24

Beta Calculation

Adjusted Beta

((Raw Beta*(2/3))+(1*(1/3)))

1.19 3Y Daily Adjusted Beta

Source: Team Analysis

Figure 25

	Portion of Total Revenue	Long Term Growth Rate	Share of Growth
Refining	31.4%	1.5%	0.47%
Logistics	2.5%	2.6%	0.07%
Marketing	66.1%	1.7%	1.11%
Total Growth			1.65%

Source: Team Analysis

Figure 26

Dividend Discount Model

Year				Dividend
2011	D1	=	$	-
2012	D2	=	$	0.27
2013	D3	=	$	0.90
2014	D4	=	$	1.10
2015	D5	=	$	1.85
2016	D6	=	$	2.10
2017	D7	=	$	2.28
Year				**Dividend**
2018	D8	=	$	3.28
2019	D9	=	$	3.93
2020	D10	=	$	4.59
2021	D11	=	$	5.12
2022	D12	=	$	5.76
Target Price		=	$	**132.83**
Value		=	$	**95.40**

Source: Team Analysis

cost of goods sold. Total refining capacity is a measure of how much Andeavor's maximum efficiency. Macroeconomic variables for the refining segment include:

1. Total vehicle miles traveled
2. GDP of China
3. Average per capita disposable income
4. Personal consumption expenditure on gasoline and other energy goods

Other Andeavor specific variables include:

1. Total refined product sales
2. Total refining margin per throughput barrel

We identify the marketing revenue drivers as **total number of stations and price of gasoline.** As Andeavor increases the number of stations, they are able to sell more fuel. The growth of marketing revenue from 2012 corresponds to the 65% increase in the number of stations that same year. Although demand for gasoline is more inelastic, sharp increases in the price of gasoline can have severe impacts on the quantity of gasoline sold, which directly impacts the marketing segment revenue.

Macroeconomic variables for the marketing segment include:

1. U.S. domestic demand for gasoline
2. Total vehicles purchased

Company variables include:

1. Fuel margin
2. Refined product sales margin

Total throughput is the major revenue driver for the logistics segment. Revenue from the logistics segment is the most stable because it is contract fee-based. Minimum throughput levels must be achieved, or additional fees must be paid by the buyer. Within Andeavor's logistics segment, they separate throughput into numerous types: terminalling, pipeline, crude oil gathering, trucking, gas gathering, fee-based processing and NGLs processing. Terminalling, pipeline, crude oil, and trucking throughput are 70% of segment revenue. The remaining 30% of revenue consists of natural gas and NGLs.

Discounted Cash Flow and EV/EBIDTA

Our weighted target price of $132.83 represents a premium of 19.34% over the current price of $110.76. Our DCF valuation results in a target price of $132.18, and EV/EBITDA yields a target price of $135.49. We assign a 20% weight factor to EV/EBITDA to account for the role of larger peers in Andeavor's valuation. The remainging 80% is Andeavor's individual performance using the DCF method. We forecaste the financial statements five years ahead until 2022 based on historical trends, oil price, management guidance, and their competitive positioning. Their free cash flow is dependent upon on performance by the firm and our projections while the required rate of return and growth rate are external variables.

Required Rate of Return

The **10.93%** required rate of return is amongst the highest within Andeavor's competitive market. The Capital Asset Pricing Model (CAPM) model was used to find the required rate of return which includes three variables: current risk-free rate, beta, and historic market return. We used the 30-year Treasury Constant Maturity Rate, which was 2.91% as of January 26, 2018, as our current risk-free rate. In order to obtain the beta, we calculated the three-year daily stock price versus the S&P 500 to obtain an unadjusted raw beta of 1.29. We calculated an adjusted beta by assigning a two-thirds weight to the raw beta and a one-third weight to 1.0 because this represents an assumption that as firms mature, their beta tends to move towards 1.0. Our adjusted beta is 1.19. We used the Damodaran geometric S&P 500 average starting in 1928 to obtain a historic market return of 9.65%.

Growth Rate

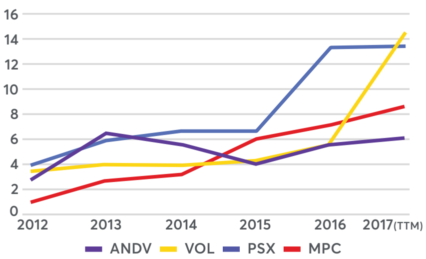
To calculate our overall long-term growth rate of **1.65%**, we use three different growth rate forecasts, representative of Andeavor's three operating segments, each pulled from IBIS World. The refining segment is expected to grow at a rate of 1.5%. The growth projections for the marketing segment are 1.7%, and logistics is projected to grow at a higher 2.6%. In order to get a company-specific growth rate, we weight the three segment projections based on percentage of total revenue in 2017, resulting in our 1.65% long-term growth rate.

Dividend Discount Model

Andeavor is overvalued according to the dividend discount model. Andeavor is considered to be a growth stock, but they have been increasing dividends steadily over the past couple of years and will be using excess future cash flow from the tax bill towards increasing dividends in the future as well. We discount the dividends by our required rate of return of 10.93%, which results in a target price of $95.01. This would indicate a SELL if Andeavor was an income stock. However, Andeavor is a growth stock and has recently approved a 1.7 billion dollar share buy-back plan by 2020, which is not **reflected in a DDM.**

Figure 27

Enterprise Multiple



Source: Company Data, Team Analysis

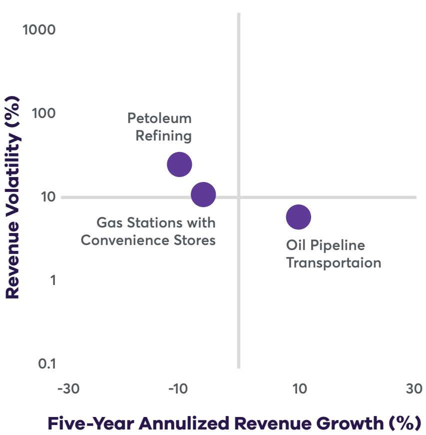
Figure 27

EV/EBITDA	
Peer Average EV/EBITDA	6.35
Historic ANDV Premium (6 Yea	24%
ANDV Normal EV/EBITDA	7.874
ANDV Current EV/EBITDA	**6.12**
Premium EV/EBITDA	22.28%
Current Trading Price (01/29/18	110.76
Intrinsic Value	**135.43**

Source: Team Analysis

Figure 28

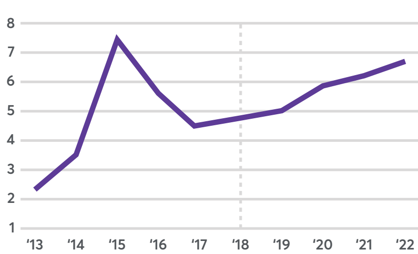
Segment Volatility



Source: Ibis World, Team Design

Figure 29

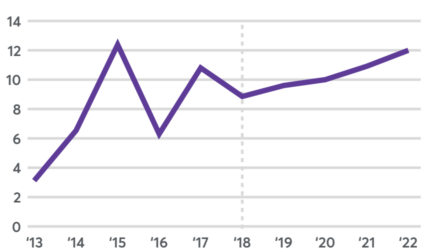
Cash Flow Margin



Source: Team Analysis

Figure 30

Earnings Per Share



Source: Team Analysis

Relative Valuation

Relative valuation is performed using two variables: the enterprise multiple (EV/EBITDA) and the price to operating cash flow ratio. We focus on using the enterprise multiple because it offers fair comparisons regardless of differing capital structures. The enterprise multiple also accounts for differences in accounting policies which is useful when comparing firms within the same industry. Andeavor has a lower enterprise multiple than its peers as shown in Figure 27 which indicates that the company is likely undervalued. Using an enterprise multiple peer average of 6.35, we arrive at a value of $135.43 which is a **22.28% premium to Andeavor's stock price.** Due to the premium of over 20% and Andeavor's lower enterprise multiple in relation to its peers, the relative valuation **confirms our BUY recommendation** and target price of $132.83. Relative valuation, including price to operating cash flow calculations, is discussed in further detail in the Appendix 11.

Financial Analysis

Acquisitions and Mergers

The world price of crude oil has been rebounding since a price crash in 2014, which reached a low during early 2016. Low oil prices forces the market to consolidate due to smaller companies being unable to maintain a positive cash flow leading to default or merging opportunities. In fact, Andeavor recently acquired Western Refining and had to raise debt levels in order to complete the transaction. Historicaly, Andeavor's **debt ratio remains low and is projected to decrease** as management uses excess cash to pay off debt. This allows Andeavor to raise additional capital for acquisitions through debt as the market consolidates.

Integration is the Future

As the market growth rate for refining and gasoline stores slows, IBISWorld projects the midstream sector to maintain a high 2.6% growth rate. Obtaining additional logistic assets improves Andeavor's integration within its supply chain. Midstream operations are less volatile to oil prices because it is a fee based business which enables logistics to **transfer volatility** onto the downstream segments. Furthermore, they use long-term contracts to **ensure funding of large portions of their capacity,** placing a floor on their revenue. This enforces our calculations on the revenue of the three different segments.

Cash Flow and Growth Strategies

As shown in Appendix 4, Andeavor's cash flow margin has improved during times with volatile oil prices and is projected to maintain a steady increase. This is due to their ability to manage expenses over time and invest capital in projects to modernize their facilities, reducing maintenance costs. This allows Andeavor to invest more cash in logistics and marketing acquisitions to reach their strategic goals. Logistics are on track to obtain a **20% revenue growth** from third parties with the acquisition of Rangeland LLC and other planned projects by management. Marketing is focused on obtaining more stores at a 7.8% annual growth rate, reaching the target of 4000+ stores by 2020, including the expansion into northwest Mexico. We projected the refining segments output to grow at 2.5% based on improvements at refineries with the potential of small acquisitions over time.

It is All About the Margins

Andeavor has been able to maintain strong margins within their competitive market and is projected to increase these over the next five years. It is important to recognize the significance of margins since every company within the industry is a price taker on both output and input. Andeavor has improved margins by strategically investing in logistics assets which allows them to gather, store, and transport oil and natural gas. This **reduces costs by eliminating third parties.** As Andeavor continues to build out the logistics footprint their margins will continue to benefit from their vertically integrated supply chain.

Stable Transition

Andeavor is currently transitioning into the more stable midstream sector through the acquisitions of additional assets such as Rangeland LLC. We project Andeavor to lower their debt ratio while they continue to pay off maturities that come due. With **increasing projected interest coverage** to 9.77x over the next 5 years, Andeavor is well positioned for potential interest rate increases. The company is able to fund capital expenditures from operating cash flows meaning they do not have to use debt to grow their operations. This is evident by the projected EBITDA/CapEX ratio which we estimate will grow from 2.38 to 4.12 by 2022. Andeavor's ability to fund growth from operations while keeping debt low makes them more attractive to investors.

Factors that Affect Target Price

In order to appropriately assess factors that could change our **BUY** recommendation, we conducted both a Monte Carlo simulation and a sensitivity analysis.

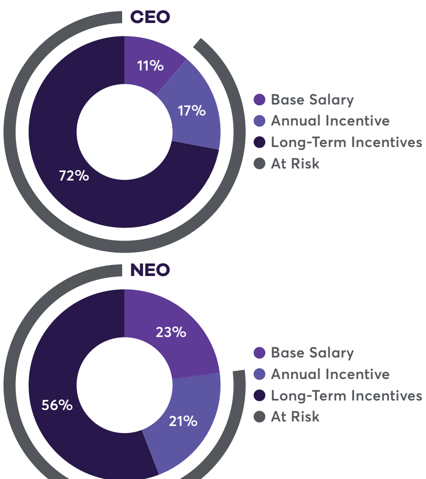
Figure 31

Monte Carlo Results	
Mean	132.9
Median	131.7
Standard Deviatior	23.57
Minimum	33.5
Maximum	298
Skewness	0.308
Kurtosis	3.19

Source: Team Analysis

Figure 32

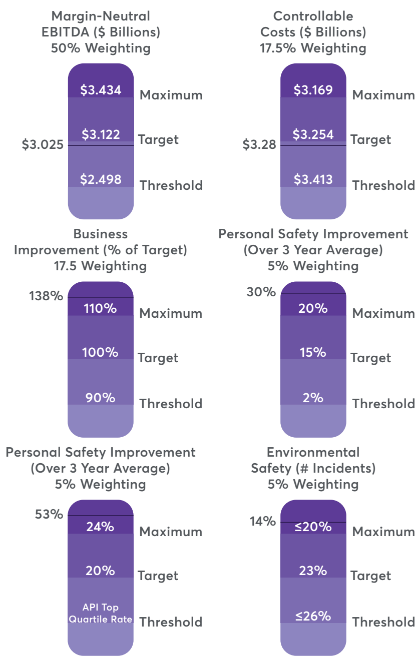
Compensation Breakdown



Source: Company Data, Team Design

Figure 33

Company Performance Matrix



Source: Company Data, Team Design

Figure 34

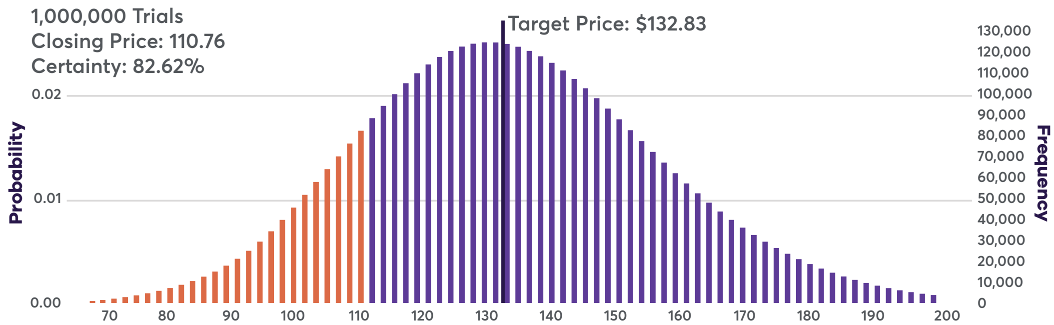
Weighted Performance Objectives

Name	Weighting of Corporate Performance	Weighting of Business Unit Performance
Goff	100%	N/A
Sterin	70%	30%
Casey	50%	50%
Rucker	70%	30%
Warner	50%	50%

Source: Company Data, Team Design

Monte Carlo Simulation

After running a Monte Carlo simulation with one million iterations, Andeavor has a **82.61% probability of being undervalued.** Our simulation included three external and three internal variables: long term growth rate, required rate of return, oil price, number of gas stations, refining capacity, and logistics growth. The variable that impacts the Monte Carlo the most is the price of oil. This simulation shows that Andeavor is undervalued; thus, the BUY rating is resistant to changes in the most important variables that impact the stock price. The Monte Carlo is explained in greater detail in appendix 12. Kurtosis and skewness in the Monte Carlo is minimal as there is an evenly distributed bell curve with a slightly larger tail towards the upper limit of the target price. The Monte Carlo reinforces our recommendation of a BUY of Andeavor, as the mean price listed is 131.67



Source: Company Data, Team Analysis

Corporate Governance

Our assessment of Andeavor's governance suggest effective and appropriate measures that align with the interest of society, shareholders, employees, and management see Appendix 22. The management team at Andeavor is made up of seven members with a **diverse range of experiences,** with 71% of the aforementioned experiences in some type of energy, oil refining, or downstream industry. The management team of Andeavor is relatively new, so each member of the management team brings a **fresh perspective** as the company continues to adapt and grow.

Board of Directors

The Board of Directors at Andeavor has twelve members and four committees. Each board member is an independent director with the exception of CEO and Chairman of the Board, Gregory Goff. Andeavor has another leadership position on the board, the lead independent director, to provide oversight over Goff. Currently, Susan Tomasky, director of the Federal Reserve Bank of Cleveland and a veteran in the energy industry, is serving this role. The board is comprised of individuals with backgrounds ranging from management and supply chain to finance, auditing, and engineering. The newest board member began serving in 2016, and the longest serving member began in 2005. The board offers a **wide range of expertise and experience.** The total payout of the board of directors was $3,000,864 for 2017.

Compensation

Andeavor uses a pay-for-performance compensation system. See Appendix 22 for executive compensation break down. The compensation committee reviews competitive market data from a peer group and individual performance each year, increasing base pay accordingly. Figure 33 shows the six different matrices used and how the company performed. The executive management's "at risk" pay is weighted by two factors: overall corporate performance and business unit performance. Figure 34 shows certain administrative functions have a heavier weighting applied to corporate performance to create a **strong alignment to corporate goals.**

Institutional Holdings

Andeavor has a high percentage of institutional stock ownership. Out of 156 million outstanding shares **79.38% are in institutional holdings.** Vanguard Group Inc. is the largest holder with a little more than 15.5 million shares, accounting for nearly 10% of Andeavor's shares.

Insiders

Insiders are selling Andeavor. In the last three months, there have been twenty sells and no buys. Typically, when selling outweighs buying, there are negative implications; however, the majority of the insider trades are made by Jeff Stevens and Paul Foster, former executives of Western Refining Inc. who now sit on the Andeavor board. It is highly likely that they are **liquidating their position in Andeavor to rebalance or gain further payment** from the Western Refining sale.

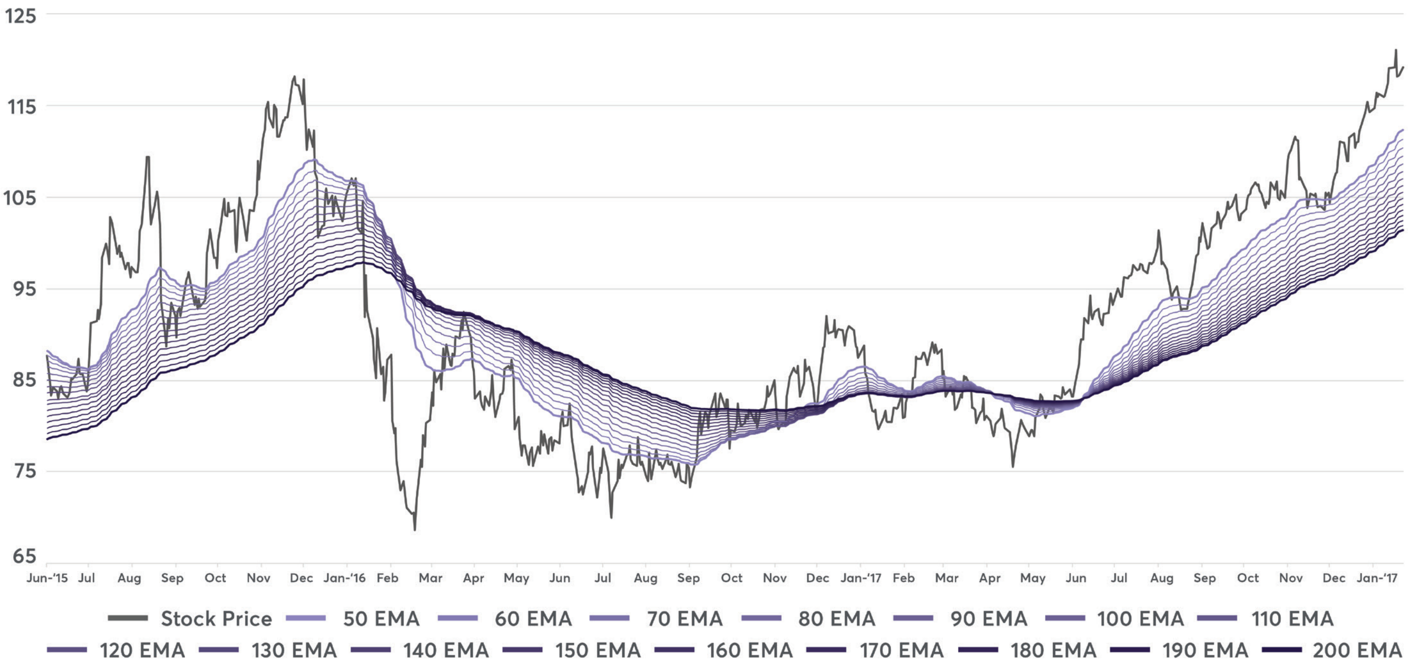
Environmental, Social, and Governance

In today's society, the stakeholder theory has taken prominence over the shareholder theory. Andeavor has been making strides in improving safety, local communities, the environment, and fair treatment of people. To please the growing amount investors that place a high premium on the actions that companies take to improve the environment, social improvement, and proper governance, Andeavor is **focusing on being a Corporate Citizen**.

Technical Analysis

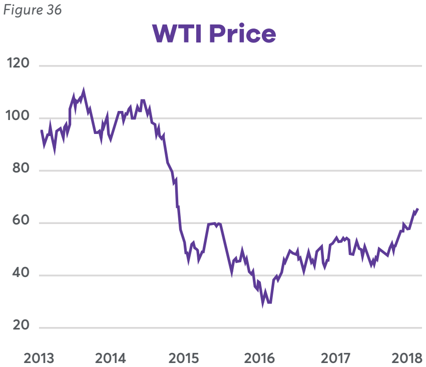
Based on our analysis, shown in appendix 24, Andeavor's stock price shows a **bull trend.** While there have been some fluctuations of price above and below the ribbon since the acquisition finalization of Western Refining in June 2017, Andeavor's stock price has steadily risen. The short-term Exponential Moving Average (EMA), long-term EMA distance, and the EMA Ribbon parallel lines show a strong bull trend. The bullish trend displayed by the ribbon confirms the stock's BUY rating as **demand is rising.**

Figure 35



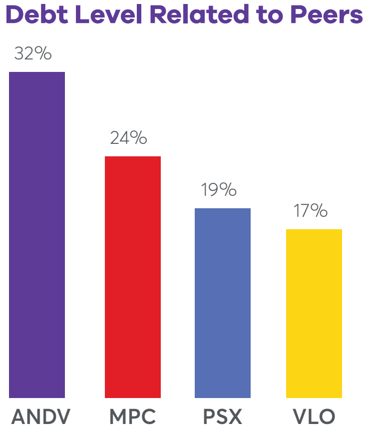
Source: Team Analysis

Figure 36



Source: EIA, Team Design

Figure 37



Source: Company Data, Team Analysis

Investment Risks

Volatility of Crude Oil (Probability: Medium / Impact: Low)

Crude oil has both short term and long term factors that affect price and subject it to a high level of volatility. In the short term, any natural disaster or weather conditions could drastically reduce the means of obtaining crude oil, causing a shortage. OPEC could also set price or production controls at any time, which, although much less significant than historically, has the potential to impact the industry. In the long term, global economic conditions could deteriorate, which would reduce demand. Additionally, government monetary and fiscal policies have an impact on the demand of crude oil. While crude oil volatility is a risk factor, Andeavor is able to mitigate the risks of crude oil input prices by having a **favorable value chain position** over the consumers of refined products. Andeavor also enters into spot market and term agreements in order to lock in more stable prices.

Acquisition Risk (Probability: Medium / Impact: High)

With each acquisition, Andeavor must ensure that enough synergies are being produced to make a merger worthwhile, but there are factors, such as shareholders potentially not voting in favor of the proposed merger, government policies regarding mergers and trusts, and unforeseen events that make acquiring companies a risky undertaking. As they acquire more and more companies, Andeavor is also exposed to an **increased amount of debt risk.** In 2016, 31.71% of Andeavor's total liabilities and equity consisted of long-term debt. The 2016 figure was higher than any year previous, and as the company continues to enter into other acquisition ventures, the long-term debt levels will also continue to rise. Andeavor mitigates the risk of acquisitions by ensuring that target synergies are realized through capital investments in all three operation areas. Synergies from recent acquisitions, like Western Refining and Rangeland, have yet to be realized.

Dependence on Logistics (Probability: Medium / Impact: Medium)

Andeavor is reliant on ANDX, their logistics company, to obtain and transport crude oil to the refineries in order to create a variety of finished products for sale to consumers. Andeavor does this through **multiple transportation means,** including pipelines, trucks, and railcars. If, for any reason, there is an inability to transport oil to the refineries due to a logistics error, Andeavor is subject to losses. Furthermore, transport by rail, which is one of Andeavor's preferred methods of transporting crude oil, was subject to the "Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains" act in 2015. This act has the potential to increase the costs required to ship by rail, therefore, making it a less cost-efficient method. Andeavor has **mitigated the negative impact** of the "Enhanced Tank Car Standards and Operational Controls for High-Hazard Flammable Trains" by leasing, rather than owning, most of their transportation methods. Over the course of 2016,

Figure 38

Enhanced Tank Car Standards

Enhanced Braking

Require HHFTs to have in place a functioning two-way EOT device or a DP braking system.

Enhanced Standards

New tank cars constructed after October 1, 2015 are required to meet enhanced DOT Specification 117

Existing tank cars must be retrofitted in accordance with the DOT-prescribed retrofit design

A retrofit reporting requirement is triggered if consignees owning or leasing tank cars covered under this rulemaking do not meet the initial retrofit milestone.

More Accurate Classification of Unrefined Petroleum-Based Products

Document sampling and testing program for all unrefined petroleum-based products,

Certify that programs are in place, document the testing and sampling program outcomes, and make information available to DOT personnel upon request.

Rail Routing

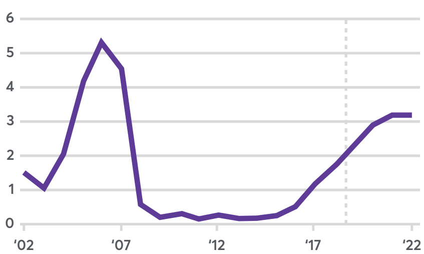
Required to perform a routing analysis that considers, at a minimum, 27 safety and security factors

Railroads notify State and/or regional fusion centers, and that State, local and tribal officials who contact a railroad to discuss routing decisions related to the routing of hazardous materials through their jurisdictions.

Source: Federal Register, Team Creation

Figure 39

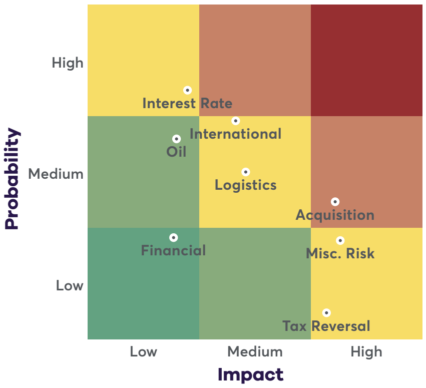
Federal Interest Rates



Source: Team Analysis

Figure 40

Risk Assessment



Andeavor added 700 new rail cars that were DOT compliant to its crude oil fleet, while phasing out 500 out of date rail cars.

Under the "Keep-Whole-Commodity Agreement," Andeavor essentially assumes virtually all NGL commodity risk from ANDX. By transferring the risk from ANDX to Andeavor, investors that are risk-averse are able to relatively invest safely in logistics without fear of commodity risk. By doing this, investors are able to focus on yield by investing in logistics. On the other hand, investors that are more risk-tolerant are able to still invest in Andeavor even though there is an increase in commodity risk.

Additionally, throughput risk is mitigated because Andeavor is **committed to ensuring that logistics operates at capacity.** In doing so, Andeavor receives a marketing premium from ANDX, ensuring that both sides mutually benefit from the agreement. ANDX benefits because there is much less commodity or throughput risk to operate; therefore, the midstream segment is strengthened; in addition, it is also more attractive to risk-averse, yield-based investors. Andeavor's strong asset base enables them to efficiently cater to their customers. That being said, the "Keep-Whole-Commodity Agreement" still increases the risk encountered by Andeavor because they have to pay regardless of whether or not volume requirements.

International Risks (Probability: Medium / Impact: Medium)

As with any company that does business internationally, Andeavor is subject to multiple global risk factors. Global exchange fluctuations, tariffs, political unrest, and taxes all have the potential to affect Andeavor. Moreover, the global economy is important to the petroleum refining industry as a whole. Furthermore, with the company's **current expansion into Mexico** and its planned acquisition of assets in Canada, U.S. involvement in the North American Free Trade Agreement is crucial. Recently, the U.S. has threatened to withdraw from NAFTA if changes are not made by the end of March 2018. If the U.S. chooses to withdraw from NAFTA, the potential occurrence of tariffs could increase the cost of operations in Mexico and Canada. In the current global economic environment, the USD is expected to appreciate. In order to mitigate currency risks, Andeavor enters into forward contracts to lock in favorable currency values.

Financial Risks (Probability: Medium / Impact: Low)

While financing its operations, Andeavor is subject to financial risk. With their fixed rate debt, increases in future interest rates would force ANDV to refinance maturing debt at higher rates. However, locking in fixed rates keeps payments consistent which enables ANDV to better predict future expenses. Recently, Andeavor issued one billion dollars of senior notes (500 million, 3.8%, 10-year and 500 million, 4.5%, 30-year), which shows that **the market is confident in Andeavor's business outlook.**

Interest Rates (Probability: High / Impact: Low)

According to historical DuPont Analysis, ANDV is maintaining a **high equity multiplier over 2x** which is acceptable in the current low interest rate environment. However, interest rates, which hit an all-time low in 2008, are slowly rising. Since December 2016, the FED has raised rates four times up to a Fed funds rate of 1.5%. The FED is expected to continue raising the interest rates approximately a 0.25% each quarter. According to the 2016 10-K, ANDV does not currently use interest rate swaps to manage interest rate risk exposure.

Taxes (Probability of reversal on tax policy: Low / Impact: High)

With the new US tax law, all corporate income is taxed at a flat 21% rate. This is a decrease from the 35% tax rate that corporations were paying. This change in tax policy will increase cash flow. From a risk perspective, Andeavor is **only at risk if there is a radical re-shift in tax policy.** Andeavor will use the tax savings to either increase dividends or buy back shares. Share buybacks further reinforce Andeavor's favorable target price, as it indicates that the company believes the stock is currently undervalued.

Alternative Transportation (Probability: Medium / Impact: High)

One risk that the **entire industry faces** is the rising prominence of alternative transportation. Companies like Tesla are constantly working to make crude oil and natural gas products obsolete. On June 12, 2014, Tesla provided free access to all of its electric vehicle patents in order to encourage advancements in sustainable transportation. While the alternative transportation industry is still a relatively small portion of vehicles on the road, the impact of an affordable, consistent electric vehicle would be extreme on the oil industry.

Other Miscellaneous Risks (Probability: Low/Medium / Impact: High)

In general, it is possible to predict the major risk factors that could potentially affect Andeavor; however, there are other factors that, albeit rare, have the potential to negatively impact Andeavor. For instance, natural disasters like earthquakes or tornadoes could cause severe structural damage to Andeavor's refineries. Terrorist attacks directed at Andeavor have the potential to cripple refineries as well, and terrorist attacks on American soil have the potential to negatively impact the economy, thus, negatively impact Andeavor. Although they do not have coverage for everything, Andeavor is able to mitigate some of these risks through the use of insurance. Other risk factors include a widespread economic crash as well as improvements in vehicles that allow for more miles travelled per gallon of fuel used.

Appendix 1: Glossary

Brent Crude Index: Brent crude is the global benchmark of oil pricing.

Crack-Spread: The crack spread is a measure of the difference between market prices for crude oil and refined products and is a commonly used proxy within the industry to estimate or identify trends in gross refining margins. Crack spreads can fluctuate significantly over time as a result of market conditions and supply and demand balances.

Fractionation: The process of separating natural gas liquids into its component parts by heating the natural gas liquid stream and boiling off the various fractions in sequence from the lighter to the heavier hydrocarbon.

Fluid Catalytic Cracking: A process that breaks down larger, heavier, and more complex hydrocarbon molecules into simpler and lighter molecules through the use of a catalytic agent and is used to increase the yield of gasoline. Fluid catalytic cracking uses a catalyst in the form of very fine particles, which behave as a fluid when aerated with a vapor.

Fuel Margin: The margin on fuel products sold through our Marketing segment calculated as revenues less cost of sales. Cost of sales in fuel margin are based on purchases from our refining segment and third parties using average bulk market prices adjusted for transportation and other differentials.

Gas Processing: A complex industrial process designed to remove the heavier and more valuable natural gas liquids components from raw natural gas allowing the residue gas remaining after extraction to meet the quality specifications for long-haul pipeline transportation or commercial use.

Gross Refining Margin: The margin on products manufactured and purchased, including those sold to our Marketing segment. Gross refining margin is the difference between the prices of all manufactured refined products sold and the cost of crude oil and other feedstocks used to produce refined products, including the cost of transportation and distribution.

Mbpd: Thousand barrels per day. MMBtu - Million British thermal units. MMMBtu - Billion British thermal units. MMcf - Million cubic feet.

NGLs: Natural gas liquids.

OECD: Organisation for Economic Co-Operation and Development. The OECD is a platform through which developed countries can collaborate and discuss economic improvements.

OPEC: Organization of the Petroleum Exporting Countries

Other Feedstocks: Any non-crude raw or semi-finished material, which is further processed in various units of a refinery.

Refined Products: Hydrocarbon compounds, such as gasoline, diesel fuel, jet fuel and residual fuel that are produced by a refinery.

Throughput: The quantity of crude oil and other feedstocks processed at a refinery measured in barrels per day.

WTI: West Texas Intermediate. WTI is the benchmark of US oil pricing. WTI is traded at a discount compared to Brent Crude. For the purposes of this paper, WTI was used as the derivation for the price of oil.

Appendix 2: Income Statement

Historical Future

$ in Millions	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Revenue																
Refining	-	-	-	-	$ 22,029	$ 23,728	$ 16,715	$ 16,621	$ 10,089	$ 8,556	$ 10,855	$ 15,451	$14,753	$14,389	$ 14,303	$14,434
Logistics	-	-	-	-	10	14	40	103	497	505	870	1,044	1,253	1,503	1,804	2,164
Marketing	-	-	-	-	5,103	6,095	20,796	23,941	18,144	15,490	22,863	26,998	27,778	28,943	30,484	32,375
Total Revenue	**$21,915**	**$ 28,416**	**$16,872**	**$ 20,583**	**27,182**	**29,809**	**37,601**	**40,633**	**28,711**	**24,582**	**34,588**	**43,493**	**43,783**	**44,836**	**46,590**	**48,973**
Expenses																
Cost of Sales	20,369	25,546	14,739	18,251	24,022	26,045	34,085	35,603	21,928	19,658	27,459	35,799	35,685	36,339	37,681	39,624
Lower of Cost or Market Inventory Adjustment	-	-	-	-	-	-	-	42	317	-359	-	-	-	-	-	-
Gross Profit	1,546	2,870	2,133	2,332	3,160	3,764	3,516	4,988	6,466	5,283	7,129	7,787	8,291	8,799	9,337	9,920
Operating Expenses		1,631	1,469	1,474	1,349	1,405	1,911	2,444	2,455	2,541	3,222	3,482	3,742	4,002	4,262	4,522
Selling, General and Administrative Expenses	263	325	221	242	227	297	337	346	386	401	723	671	703	736	769	802
Depreciation and Amorization Expense	357	401	426	422	391	418	489	562	756	851	1,021	1,218	1,308	1,401	1,495	1,592
Loss on Asset Disposals and Impairments	20	42	74	54	66	23	24	4	42	9	36	36	36	36	36	36
Total Expenses	21,009	27,945	16,929	20,443	26,055	28,188	36,846	39,001	25,884	23,101	32,461	41,205	41,475	42,515	44,242	46,576
Operating Income	**967**	**471**	**(57)**	**140**	**1,127**	**1,621**	**755**	**1,632**	**2,827**	**1,481**	**2,127**	**2,381**	**2,501**	**2,623**	**2,776**	**2,969**
Interest and Financing Costs, Net	(91)	(111)	(130)	(157)	(179)	(167)	(151)	(235)	(217)	(274)	(374)	(385)	(402)	(410)	(401)	(373)
Interest Income	33	7	4	3	2	2	2	-	-	-	-	-	-	-	-	-
Foreign Currency Exchange Gain (loss)	(4)	12	(5)	2	-	-	-	-	-	-	-	-	-	-	-	-
Equity in Earnings of Equity Method Investments	-	-	-	-	-	-	11	10	7	13	10	10	10	10	10	10
Other Income, Net	-	50		(13)	2	(26)	63	57	13	57	22	22	22	22	22	22
Earnings Before Income Taxes	**905**	**429**	**(188)**	**(25)**	**952**	**1,430**	**680**	**1,464**	**2,630**	**1,277**	**1,785**	**2,028**	**2,131**	**2,245**	**2,407**	**2,628**
Income Tax Expense	339	151	(48)	4	359	527	246	547	936	427	(134)	447	470	495	531	579
Net Earnings From Continuing Operations	566	278	(140)	(29)	593	903	434	917	1,694	850	1,919	1,581	1,661	1,750	1,877	2,049
Earnings (loss) From Discountinued Operations, Net of Tc	-	-	-	-	(30)	(133)	20	(29)	(4)	10	-	-	-	-	-	-
Net Earnings	566	278	(140)	(29)	563	770	454	888	1,690	860	1,919	1,581	1,661	1,750	1,877	2,049
Less: Net Earnings from Continuing Operations Atributable to Noncontrolling Interest	-	-	-	-	17	27	42	45	150	126	199	239	287	345	414	496
Net earnings atributable to Tesoro Corporation	**$ 566**	**$ 278**	**$ (140)**	**$ (29)**	**$ 546**	**$ 743**	**$ 412**	**$ 843**	**$ 1,540**	**$ 734**	**$ 1,720**	**$ 1,342**	**$ 1,374**	**$ 1,406**	**$ 1,463**	**$ 1,552**
Dividends Per Share	0.35	0.40	0.35	-	-	0.27	0.90	1.10	1.85	2.10	2.28	3.28	3.93	4.59	5.12	5.76
Weighted Average Common Shares Outstanding - Dilutec	139.5	139.2	138.2	140.6	143.3	141.5	137.3	130.8	124.6	119.9	158.7	154.0	147.7	143.0	138.3	132.0
Net Earnings (loss) Per Share - Diluted	4.06	2.00	(1.01)	(0.21)	3.81	5.25	3.00	6.44	12.36	6.12	5.99	8.68	9.25	9.54	10.11	10.75
Weighted Average Common Shares Outstanding - Basic	135.7	136.8	138.2	140.6	141.4	139.4	135.0	128.5	123.2	118.5	157.3	152.6	146.3	141.6	136.9	130.6
Net Earnings (loss) Per Share - Basic:	**$ 4.17**	**$ 2.03**	**$ (1.01)**	**$ (0.21)**	**$ 3.86**	**$ 5.33**	**$ 3.05**	**$ 6.56**	**$ 12.50**	**$ 6.19**	**$ 6.04**	**$ 8.76**	**$ 9.34**	**$ 9.64**	**$ 10.22**	**$ 10.87**

Common Sized Income Statement

Historical Future

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2222F
Revenue																
Refining	-	-	-	-	81.04%	79.60%	44.45%	40.91%	35.14%	34.81%	31.38%	35.45%	33.55%	31.88%	30.42%	29.13%
Logistics	-	-	-	-	0.04%	0.05%	0.11%	0.25%	1.73%	2.05%	2.51%	2.39%	2.85%	3.33%	3.84%	4.37%
Marketing	-	-	-	-	18.77%	20.45%	55.31%	58.92%	63.20%	63.01%	66.10%	62.16%	63.60%	64.79%	65.74%	66.50%
Total Revenue	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Cost and Expenses																
Cost of sales	92.95%	89.90%	87.36%	88.67%	88.37%	87.37%	90.65%	87.62%	76.37%	79.97%	79.39%	82.13%	81.15%	80.51%	80.14%	79.98%
Lower of cost or market inventory adjustment	-	-	-	-	-	-	-	0.10%	1.10%	(1.46%)	-	-	-	-	-	-
Operating expenses	-	5.74%	8.71%	7.16%	4.96%	4.71%	5.08%	6.01%	8.55%	10.34%	9.32%	7.99%	8.51%	8.87%	9.06%	9.13%
Selling, general and administrative expenses	1.20%	1.14%	1.31%	1.18%	0.84%	1.00%	0.90%	0.85%	1.34%	1.63%	2.09%	1.54%	1.60%	1.63%	1.64%	1.62%
Depreciation and amorization expense	1.63%	1.41%	2.52%	2.05%	1.44%	1.40%	1.30%	1.38%	2.63%	3.46%	2.95%	2.79%	2.98%	3.10%	3.18%	3.21%
Loss on asset disposals and impairments	0.09%	0.15%	0.44%	0.26%	0.24%	0.08%	0.06%	0.01%	0.15%	0.04%	0.10%	0.08%	0.08%	0.08%	0.08%	0.07%
Total expenses	95.87%	98.34%	100.34%	99.32%	95.85%	94.56%	97.99%	95.98%	90.15%	93.98%	93.85%	94.54%	94.31%	94.19%	94.10%	94.01%
Operating income	**4.41%**	**1.66%**	**(0.34%)**	**0.68%**	**4.15%**	**5.44%**	**2.01%**	**4.02%**	**9.85%**	**6.02%**	**6.15%**	**5.46%**	**5.69%**	**5.81%**	**5.90%**	**5.99%**
Interest and financing costs, net	(0.42%)	(0.39%)	(0.77%)	(0.76%)	(0.66%)	(0.56%)	(0.40%)	(0.58%)	(0.76%)	(1.11%)	(1.08%)	(0.88%)	(0.92%)	(0.91%)	(0.85%)	(0.75%)
Interest income	0.15%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%	-	-	-	-	-	-	-	-	-
Foreign currency exchange gain (loss)	(0.02%)	0.04%	(0.03%)	0.01%	-	-	-	-	-	-	-	-	-	-	-	-
Equity in earnings of equity method investment:	-	-	-	-	-	-	0.03%	0.02%	0.02%	0.05%	0.03%	0.02%	0.02%	0.02%	0.02%	0.02%
Other income, net	-	0.18%	-	(0.06%)	0.01%	(0.09%)	0.17%	0.14%	0.05%	0.23%	0.06%	0.05%	0.05%	0.05%	0.05%	0.04%
Earnings before income taxes	**4.13%**	**1.51%**	**(1.11%)**	**(0.12%)**	**3.50%**	**4.80%**	**1.81%**	**3.60%**	**9.16%**	**5.19%**	**5.16%**	**4.65%**	**4.85%**	**4.97%**	**5.12%**	**5.30%**
Income tax expense	1.55%	0.53%	(0.28%)	0.02%	1.32%	1.77%	0.65%	1.35%	3.26%	1.74%	(0.39%)	1.03%	1.07%	1.10%	1.13%	1.17%
Net earnings from continuing operations	2.58%	0.98%	(0.83%)	(0.14%)	2.18%	3.03%	1.15%	2.26%	5.90%	3.46%	5.55%	3.63%	3.78%	3.88%	3.99%	4.13%
Earnings (loss) from discontinued operations, net of tax		-	-	-	-	(0.45%)	0.05%	(0.07%)	(0.01%)	0.04%	-	-	-	-	-	-
Net earnings	2.58%	0.98%	(0.83%)	(0.14%)	2.07%	2.58%	1.21%	2.19%	5.89%	3.50%	5.55%	3.63%	3.78%	3.88%	3.99%	4.13%
Less: net earnings from continuing operations atributable to noncontrolling interest	-	-	-	-	0.06%	0.09%	0.11%	0.11%	0.52%	0.51%	0.58%	0.55%	0.65%	0.76%	0.88%	1.00%
Net earnings atributable to Tesoro Corporation	**2.58%**	**0.98%**	**(0.83%)**	**(0.14%)**	**2.01%**	**2.49%**	**1.10%**	**2.07%**	**5.36%**	**2.99%**	**4.97%**	**3.08%**	**3.12%**	**3.11%**	**3.11%**	**3.13%**

Appendix 3: Balance Sheet

$ in Millions	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
										Historical		Future				
Assets																
Cash & Cash Equivalents	$ 23	$ 20	$ 413	$ 648	$ 900	$ 1,639	$ 1,238	$ 1,000	$ 942	$ 3,295	$ 1,538	$ 2,145	$ 2,257	$ 2,566	$ 2,686	$ 2,486
Receivables, Less Allowance for Doubtful Accounts	1,243	738	1,116	908	1,272	1,126	1,313	1,435	792	1,108	1,453	1,691	1,706	1,751	1,824	1,922
Inventories, Net of Lower of Cost or Market Valuation	1,200	787	622	1,257	1,763	1,338	2,565	2,439	2,302	2,640	3,910	3,938	4,282	4,542	4,898	5,151
Prepayments and Other	134	101	72	115	216	196	210	200	271	371	577	881	942	1,025	1,130	1,260
Current Assets Related to Discontinued Operations	-	-	-	-	-	337	-	-	-	-	-	-	-	-	-	-
Total current assets	**$ 2,600**	**$ 1,646**	**$ 2,223**	**$ 2,928**	**$ 4,151**	**$ 4,636**	**$ 5,326**	**$ 5,074**	**$ 4,307**	**$ 7,414**	**$ 7,478**	**$ 8,655**	**$ 9,188**	**$ 9,885**	**$ 10,540**	**$ 10,820**
Property, Plant and Equipment	5,856	6,265	6,649	6,847	7,055	7,206	9,123	11,633	12,562	13,472	18,542	20,217	21,782	23,387	24,992	26,667
Less Accumulated Depreciation & Amortization	1,076	1,184	1,459	1,677	1,907	1,974	2,248	2,588	3,021	3,496	4,517	5,735	7,043	8,444	9,939	11,531
Net Property, Plant & Equipment	4,780	5,081	5,190	5,170	5,148	5,232	6,875	9,045	9,541	9,976	14,025	14,482	14,739	14,943	15,053	15,136
Goodwill	92	89	-	-	-	-	-	-	-	-	3,339	3,339	3,339	3,339	3,339	3,339
Acquired Intangibles, Net	290	269	255	246	226	214	263	1,222	1,211	1,277	1,625	1,877	1,922	1,958	1,978	1,993
Other Assets, Net	366	348	402	388	367	602	925	1,243	1,273	1,731	2,479	2,584	2,644	2,691	2,716	2,735
Noncurrent Assets Related to Discontinued Operation	-	-	-	-	-	18	-	-	-	-	-	-	-	-	-	-
Total Other Noncurrent Assets	748	706	657	634	593	834	1,188	2,465	2,484	3,008	7,443	7,800	7,905	7,988	8,033	8,067
Total Assets	**$ 8,128**	**$ 7,433**	**$ 8,070**	**$ 8,732**	**$ 9,892**	**$ 10,702**	**$ 13,389**	**$ 16,584**	**$ 16,332**	**$20,398**	**$ 28,946**	**$ 30,937**	**$ 31,831**	**$ 32,815**	**$ 33,625**	**$34,023**
Liability & Equity																
Current Liabilities																
Accounts Payable	$ 2,004	$ 1,027	$ 1,441	$ 1,852	$ 2,305	$ 2,196	$ 2,596	$ 2,470	$ 1,568	$ 2,032	$ 2,547	$ 3,007	$ 2,998	$ 3,053	$ 3,165	$ 3,328
Accrued Liabilities	488	412	444	492	526	-	-	-	-	-	-	-	-	-	-	-
Current Maturities of Debt	2	2	4	152	418	3	6	-	6	465	-	500	470	800	1,275	1,650
Other Current Liabilities	-	-	-	-	-	622	806	996	956	1,057	1,500	1,620	1,740	1,860	1,980	2,100
Current Liabilities Due to Discontinued Operations	-	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	**$ 2,494**	**$ 1,441**	**$ 1,889**	**$ 2,496**	**$ 3,249**	**$ 2,881**	**$ 3,408**	**$ 3,466**	**$ 2,530**	**$ 3,554**	**$ 4,047**	**$ 5,127**	**$ 5,208**	**$ 5,713**	**$ 6,420**	**$ 7,078**
Deferred Income Tax Liabilities	388	416	505	616	815	850	1,018	1,098	1,222	1,428	1,518	1,595	1,672	1,749	1,826	1,903
Debt, Net of Unamortized Issuance Costs	1,657	1,609	1,837	1,843	567	1,585	2,823	4,254	4,067	6,468	9,063	9,363	9,693	9,693	9,218	8,368
Other Noncurrent Liabilities	537	749	752	562	1,283	644	655	790	773	821	992	1,057	1,122	1,187	1,252	1,317
Noncurrent Liabilities Related to Discontinued Operat	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-
Total liabilities	**$ 5,076**	**$ 4,215**	**$ 4,983**	**$ 5,517**	**$ 5,914**	**$ 5,965**	**$ 7,904**	**$ 9,608**	**$ 8,592**	**$ 12,271**	**$ 15,620**	**$ 17,142**	**$ 17,695**	**$ 18,342**	**$ 18,716**	**$ 18,666**
Equity																
Common Stock	24	24	24	25	25	25	26	26	26	27	33	33	33	34	34	34
Additional Paid-in Capital	876	916	947	970	1,000	1,070	1,186	1,255	1,391	1,473	4,943	4,943	4,943	4,943	4,943	4,943
Retained Earnings (Accumulated Deficit)	2,393	2,616	2,427	2,398	2,944	3,649	3,940	4,642	5,954	6,437	7,798	8,640	9,439	10,195	10,957	11,757
Treasury Stock, at Cost	(151)	(147)	(140)	(128)	(226)	(356)	(798)	(1,320)	(2,009)	(2,284)	(2,775)	(3,325)	(3,875)	(4,425)	(4,975)	(5,525)
Accumulated Other Comprehensive Income (loss)	(90)	(191)	(171)	(50)	(75)	(137)	(52)	(149)	(149)	(188)	(228)	(268)	(308)	(348)	(388)	(428)
Total Tesoro Corporation Stockholders' Equity	3,052	3,218	3,087	3,215	3,668	4,251	4,302	4,454	5,213	5,465	9,771	10,023	10,232	10,399	10,571	10,781
Noncontrolling Interest	-	-	-	-	310	486	1,183	2,522	2,527	2,662	3,555	3,772	3,904	4,075	4,338	4,576
Total Equity	**$ 3,052**	**$ 3,218**	**$ 3,087**	**$ 3,215**	**$ 3,978**	**$ 4,737**	**$ 5,485**	**$ 6,976**	**$ 7,740**	**$ 8,127**	**$ 13,326**	**$ 13,795**	**$ 14,136**	**$ 14,474**	**$ 14,909**	**$ 15,357**
Total Liabilities and Equity	**$ 8,128**	**$ 7,433**	**$ 8,070**	**$ 8,732**	**$ 9,892**	**$ 10,702**	**$ 13,389**	**$ 16,584**	**$ 16,332**	**$20,398**	**$ 28,946**	**$ 30,937**	**$ 31,831**	**$ 32,815**	**$ 33,625**	**$34,023**

Common Sized Balance Sheet

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2222F
										Historical		Future				
Assets																
Cash & Cash Equivalents	0.28%	0.27%	5.12%	7.42%	9.10%	15.31%	9.25%	6.03%	5.77%	16.15%	5.31%	6.93%	7.09%	7.82%	7.99%	7.31%
Receivables, Less Allowance for Doubtful Accounts	15.29%	9.93%	13.83%	10.40%	12.86%	10.52%	9.81%	8.65%	4.85%	5.43%	5.02%	5.47%	5.36%	5.34%	5.43%	5.65%
Inventories, Net of Lower of Cost or Market Valuat	14.76%	10.59%	7.71%	14.40%	17.82%	12.50%	19.16%	14.71%	14.10%	12.94%	13.51%	12.73%	13.45%	13.84%	14.57%	15.14%
Prepayments and Other	1.65%	1.36%	0.89%	1.32%	2.18%	1.83%	1.57%	1.21%	1.66%	1.82%	1.99%	2.85%	2.96%	3.12%	3.36%	3.70%
Current Assets Related to Discontinued Operation	-	-	-	-	-	3.15%	-	-	-	-	-	-	-	-	-	-
Total current assets	**31.99%**	**22.14%**	**27.55%**	**33.53%**	**41.96%**	**43.32%**	**39.78%**	**30.60%**	**26.37%**	**36.35%**	**25.84%**	**27.98%**	**28.86%**	**30.12%**	**31.34%**	**31.80%**
Property, Plant and Equipment	72.05%	84.29%	82.39%	78.41%	71.32%	67.33%	68.14%	70.15%	76.92%	66.05%	64.06%	65.35%	68.43%	71.27%	74.32%	78.38%
Less Accumulated Depreciation & Amortization	13.24%	15.93%	18.08%	19.21%	19.28%	18.45%	16.79%	15.61%	18.50%	17.14%	15.61%	18.54%	22.13%	25.73%	29.56%	33.89%
Net Property, Plant & Equipment	58.81%	68.36%	64.31%	59.21%	52.04%	48.89%	51.35%	54.54%	58.42%	48.91%	48.45%	46.81%	46.30%	45.54%	44.77%	44.49%
Goodwill	1.13%	1.20%	-	-	-	-	-	-	-	-	11.54%	10.79%	10.49%	10.18%	9.93%	9.81%
Acquired Intangibles, Net	3.57%	3.62%	3.16%	2.82%	2.28%	2.00%	1.96%	7.37%	7.41%	6.26%	5.61%	6.07%	6.04%	5.97%	5.88%	5.86%
Other Assets, Net	4.50%	4.68%	4.98%	4.44%	3.71%	5.63%	6.91%	7.50%	7.79%	8.49%	8.56%	8.35%	8.30%	8.20%	8.08%	8.04%
Noncurrent Assets Related to Discontinued Operat	-	-	-	-	-	0.17%	-	-	-	-	-	-	-	-	-	-
Total Other Noncurrent Assets	9.20%	9.50%	8.14%	7.26%	5.99%	7.79%	8.87%	14.86%	15.21%	14.75%	25.71%	25.21%	24.83%	24.34%	23.89%	23.71%
Total Assets	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Liability & Equity																
Current Liabilities																
Accounts Payable	24.66%	13.82%	17.86%	21.21%	23.30%	20.52%	19.39%	14.89%	9.60%	9.96%	8.80%	9.72%	9.42%	9.30%	9.41%	9.78%
Accrued Liabilities	6.00%	5.54%	5.50%	5.63%	5.32%	-	-	-	-	-	-	-	-	-	-	-
Current Maturities of Debt	0.02%	0.03%	0.05%	1.74%	4.23%	0.03%	0.04%	0.00%	0.04%	2.28%	-	1.62%	1.48%	2.44%	3.79%	4.85%
Other Current Liabilities	-	-	-	-	-	5.81%	6.02%	6.01%	5.85%	5.18%	5.18%	5.24%	5.47%	5.67%	5.89%	6.17%
Current Liabilities Due to Discontinued Operations	-	-	-	-	-	0.56%	-	-	-	-	-	-	-	-	-	-
Total Current Liabilities	**30.68%**	**19.39%**	**23.41%**	**28.58%**	**32.84%**	**26.92%**	**25.45%**	**20.90%**	**15.49%**	**17.42%**	**13.98%**	**16.57%**	**16.36%**	**17.41%**	**19.09%**	**20.80%**
Deferred Income Tax Liabilities	4.77%	5.60%	6.26%	7.05%	8.24%	7.94%	7.60%	6.62%	7.48%	7.00%	5.24%	5.16%	5.25%	5.33%	5.43%	5.59%
Debt, Net of Unamortized Issuance Costs	20.39%	21.65%	22.76%	21.11%	5.73%	14.81%	21.08%	25.65%	24.90%	31.71%	31.31%	30.26%	30.45%	29.54%	27.41%	24.59%
Other Noncurrent Liabilities	6.61%	10.08%	9.32%	6.44%	12.97%	6.02%	4.89%	4.76%	4.73%	4.02%	3.43%	3.42%	3.52%	3.62%	3.72%	3.87%
Noncurrent Liabilities Related to Discontinued Operations		-	-	-	-	0.05%	-	-	-	-	-	-	-	-	-	-
Total liabilities	**62.45%**	**56.71%**	**61.75%**	**63.18%**	**59.79%**	**55.74%**	**59.03%**	**57.94%**	**52.61%**	**60.16%**	**53.96%**	**55.41%**	**55.59%**	**55.89%**	**55.66%**	**54.86%**
Equity																
Common Stock	0.30%	0.32%	0.30%	0.29%	0.25%	0.23%	0.19%	0.16%	0.16%	0.13%	0.11%	0.11%	0.10%	0.10%	0.10%	0.10%
Additional Paid-in Capital	10.78%	12.32%	11.73%	11.11%	10.11%	10.00%	8.86%	7.57%	8.52%	7.22%	17.08%	15.98%	15.53%	15.06%	14.70%	14.53%
Retained Earnings (Accumulated Deficit)	29.44%	35.19%	30.07%	27.46%	29.76%	34.10%	29.43%	27.99%	36.46%	31.56%	26.94%	27.93%	29.65%	31.07%	32.59%	34.56%
Treasury Stock, at Cost	(1.86%)	(1.98%)	(1.73%)	(1.47%)	(2.28%)	(3.33%)	(5.96%)	(7.96%)	(12.30%)	(11.20%)	(9.59%)	(10.75%)	(12.17%)	(13.48%)	(14.80%)	(16.24%)
Accumulated Other Comprehensive Income (loss)	(1.11%)	(2.57%)	(2.12%)	(0.57%)	(0.76%)	(1.28%)	(0.39%)	(0.90%)	(0.91%)	(0.92%)	(0.79%)	(0.87%)	(0.97%)	(1.06%)	(1.15%)	(1.26%)
Total Tesoro Corporation Stockholders' Equity	37.55%	43.29%	38.25%	36.82%	37.08%	39.72%	32.13%	26.86%	31.92%	26.79%	33.76%	32.40%	32.15%	31.69%	31.44%	31.69%
Noncontrolling Interest	-	-	-	-	3.13%	4.54%	8.84%	15.21%	15.47%	13.05%	12.28%	12.19%	12.26%	12.42%	12.90%	13.45%
Total Equity	**37.55%**	**43.29%**	**38.25%**	**36.82%**	**40.21%**	**44.26%**	**40.97%**	**42.06%**	**47.39%**	**39.84%**	**46.04%**	**44.59%**	**44.41%**	**44.11%**	**44.34%**	**45.14%**
Total Liabilities and Equity	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Appendix 4: Cash Flow Statements

	Historical											Future				
$ in Millions	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017E**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Operating Activities																
Net Earnings (loss)	$ 566	$ 278	$ (140)	$ (29)	$ 563	$ 770	$ 454	$ 888	$ 1,690	$ 860	$ 1,919	$ 1,581	$ 1,661	$ 1,750	$ 1,877	$ 2,049
Adjustments to Reconcile Net Earnings to Net Cash from Operating Activities																
Depreciation and Amortization Expense	357	401	426	422	417	445	490	562	756	851	1,021	1,218	1,308	1,401	1,495	1,592
Lower of Cost or Market Inventory Adjustment	-	-	-	-	-	-	-	42	317	(359)	-	-	-	-	-	-
Amortization of Debt Issuance Costs and Discounts	12	11	13	18	17	12	14	15	16	17	18	19	20	21	22	23
Debt Redemption Charges	-	-	-	-	-	-	-	41	1	9	-	-	-	-	-	-
Provision for Bad Debt	-	95	9	1	-	-	-	-	-	-	-	-	-	-	-	-
(Gain) Loss Related to Hawaii Business	-	-	-	-	-	-	(81)	42	6	(17)	-	-	-	-	-	-
Loss on Asset Disposals and Impairments	20	42	74	54	67	271	10	4	42	9	36	36	36	36	36	36
Stock-Based Compensation Expense	53	14	46	58	53	105	80	55	75	35	68	75	77	79	81	83
Changes for Remaining Unamortized Debt Issue Costs and Discounts	-	-	-	-	14	5	-	-	-	-	-	-	-	-	-	-
Deferred Income Taxes	(1)	89	95	9	200	(8)	166	246	65	203	90	77	77	77	77	77
Excess Tax Benefits From Stock-Based Compensation Arrangements	(10)	(3)	(2)	(3)	(13)	(8)	(12)	(20)	(38)	-	-	-	-	-	-	-
Deferred Charges	-	-	-	-	(105)	(277)	(451)	-	-	-	-	-	-	-	-	-
Turnaround and Branding Charges	-	-	-	-	-	-	-	(256)	(342)	(388)	(620)	(650)	(650)	(450)	(430)	(430)
Other Non-Cash Operating Activity	-	-	-	-	-	-	-	45	12	16	-	-	-	-	-	-
Changes in Current Assets and Current Liabilities:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Receivables	(360)	410	(387)	208	(365)	48	36	10	638	(259)	(345)	(238)	(15)	(45)	(73)	(98)
Inventories	(50)	413	165	(635)	(506)	192	(311)	107	(179)	40	(1,270)	(28)	(270)	(260)	(356)	(253)
Prepayments and Other	(34)	28	17	(34)	(71)	94	(43)	(47)	(77)	(91)	(206)	(304)	(61)	(83)	(106)	(130)
Accounts Payable and Other Current Liabilities	845	(998)	450	452	448	(61)	518	(298)	(863)	427	958	580	110	175	233	283
Changes in Non-Current Assets and Liabilities	(76)	(64)	(103)	(136)	(30)	(3)	(11)	(72)	12	(49)	(53)	(292)	(40)	(18)	20	31
Net cash from Operating activities	**$ 1,322**	**$ 716**	**$ 663**	**$ 385**	**$ 689**	**$ 1,585**	**$ 859**	**$ 1,364**	**$ 2,131**	**$ 1,304**	**$ 1,616**	**$ 2,073**	**$ 2,254**	**$ 2,684**	**$ 2,875**	**$ 3,263**
Investing activities																
Capital Expenditures, Sustaining	$ (747)	$ (650)	$ (437)	$ (297)	$ (298)	$ (529)	$ (570)	$ (685)	$(1,030)	$ (894)	$ (1,262)	$ (695)	$ (615)	$ (655)	$ (675)	$ (655)
Capital Expenditures, Growth	-	-	-	-	-	-	-	-	-	-	-	(430)	(400)	(350)	(380)	(370)
Acquisitions, Net of Cash	(2,105)	-	-	-	-	(170)	(2,552)	(2,496)	(97)	(413)	(1,120)	(550)	(550)	(600)	(550)	(650)
Proceeds from Hawaii Business	-	-	-	-	-	-	539	-	-	-	-	-	-	-	-	-
Deposits for Acquisitions	-	-	-	-	-	-	-	-	-	(33)	-	-	-	-	-	-
Proceeds from Asset Sales	14	40	1	2	-	-	-	18	-	25	49	-	-	-	-	-
Other Investing Activites	-	-	-	-	7	3	6	(9)	(2)	(2)	(15)	-	-	-	-	-
Net Cash Used in Investing Activities	**$(2,838)**	**$ (610)**	**$ (436)**	**$ (295)**	**$ (291)**	**$ (696)**	**$ (2,577)**	**$ (3,172)**	**$ (1,129)**	**$ (1,317)**	**$(2,348)**	**$ (1,675)**	**$ (1,565)**	**$(1,605)**	**$(1,605)**	**$ (1,675)**
Financing Activities																
Borrowing Under Revolving Line of Credit Agreements	$ 1,060	$ 5,658	$ 418	$ 216	$ 312	$ 185	$ 2,068	$ 646	$ 476	$ 1,451	$ 2,300	$ 1,218	$ 1,361	$ 1,583	$ 1,616	$ 1,444
Repayments on Revolving Credit Agreements	(940)	(5,712)	(484)	(66)	(295)	(352)	(2,068)	(386)	(431)	(1,426)	(2,358)	(950)	(1,291)	(1,506)	(1,476)	(1,306)
Borrowings Under Term Loan Credit Agreement	700	-	-	-	-	-	500	-	250	-	-	-	-	-	-	-
Proceeds from Debt Offerings	494	-	282	-	-	1,275	806	1,600	-	3,051	1,940	800	800	800	800	800
Repayments of Debt	(216)	(2)	(2)	(3)	(329)	(1,225)	(106)	(434)	(404)	(260)	(2,109)	-	(500)	(470)	(800)	(1,275)
Debt Financed	(500)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dividend Payments	(48)	(55)	(49)	-	-	(38)	(121)	(141)	(228)	(249)	(300)	(500)	(575)	(650)	(701)	(752)
Proceeds from Stock Options Exercised	9	5	4	5	12	34	72	19	13	2	18	45	45	45	45	45
Net Proceeds from Issuance of Tesoro Logistics LP Common Units	-	-	-	-	288	171	702	949	99	364	268	442	442	300	250	150
Distributions to Noncontrolling Interest	-	-	-	-	(9)	(26)	(59)	(96)	(182)	(216)	(260)	(272)	(284)	(296)	(308)	(320)
Purchases of Common Stock	(4)	(5)	(2)	(2)	(101)	(131)	(446)	(500)	(644)	(250)	(491)	(550)	(550)	(550)	(550)	(550)
Taxes Paid Rrelated to Net Share Settlement of Equity Awards	-	-	-	-	-	-	-	(22)	(45)	(25)	(25)	(25)	(25)	(25)	(25)	(25)
Payments of Debt Issuance Costs	-	-	-	-	-	(24)	(13)	(24)	(2)	(37)	(20)	(20)	(20)	(20)	(20)	(20)
Excess Tax Benefits from Stock-Based Compensation Agreements	10	3	2	3	13	8	12	20	38	-	12	20	20	20	20	20
Other Financing Activities	(12)	(1)	(3)	(8)	(37)	(27)	(30)	(61)	-	(39)	-	-	-	-	-	-
Net Cash from (Used) in Financing Activities	**$ 553**	**$ (109)**	**$ 166**	**$ 145**	**$ (146)**	**$ (150)**	**$ 1,317**	**$ 1,570**	**$(1,060)**	**$ 2,366**	**$(1,025)**	**$ 208**	**$ (577)**	**$ (770)**	**$ (1,150)**	**$ (1,789)**
Increase (Decrease) in Cash and Cash Equivalents	$ (963)	$ (3)	$ 393	$ 235	$ 252	$ 739	$ (401)	$ (238)	$ (58)	$ 2,353	$ (1,757)	$ 607	$ 112	$ 309	$ 120	$ (200)
Cash and Cash Equivalents, Beginning of Year	986	23	20	413	648	900	1,639	1,238	1,000	942	3,295	1,538	2,145	2,257	2,566	2,686
Cash and Cash Equivalents, End of Year	**$ 23**	**$ 20**	**$ 413**	**$ 648**	**$ 900**	**$ 1,639**	**$ 1,238**	**$ 1,000**	**$ 942**	**$ 3,295**	**$ 1,538**	**$ 2,145**	**$ 2,257**	**$ 2,566**	**$ 2,686**	**$ 2,486**

Appendix 5: Statement of Retained Earnings

	Historical											Future				
$ in millions	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017E**	**2018F**	**2019F**	**2020F**	**2021F**	**2022F**
Previous Retained Earnings (Accumulate D	$ 1,874	$ 2,393	$ 2,616	$ 2,427	$ 2,398	$ 2,944	$ 3,649	$ 3,940	$ 4,642	$ 5,954	$ 6,437	$ 7,798	$ 8,640	$ 9,439	$ 10,195	$ 10,957
Add: Net Earnings	566	278	(140)	(29)	546	743	412	843	1,540	734	1,720	1,342	1,374	1,406	1,463	1,552
Less: Cash Dividends Paid to Shareholders	47	55	48	-	-	38	122	141	228	249	359	500	575	650	701	752
Retained Earnings (Accumulated Deficit)	**$ 2,393**	**$ 2,616**	**$ 2,427**	**$ 2,398**	**$ 2,944**	**$ 3,649**	**$ 3,940**	**$ 4,642**	**$ 5,954**	**$ 6,437**	**$ 7,798**	**$ 8,640**	**$ 9,439**	**$ 10,195**	**$ 10,957**	**$ 11,757**

Appendix 6: DuPont Analysis

DuPont

DuPont ratios show trends for ROE, ROA, profit margin, total asset turnover, and the equity multiplier. These ratios give a sense for how efficiently a company is generating profit with money that shareholders have invested. In 2015, ROE peaked at 29.54% but it has since fallen to a current ROE of approximately 18%, which has been a common percentage over the past ten years. The spike in ROE over the course of 2015 can be largely attributed to a February 2015 explosion at an ExxonMobil refinery in Torrance. This resulted in increased margins due to the reduced available supply during the 15 month shutdown. During this time, ROA and profit margin increased as well. ROA follows the same pattern as ROE, so the trends are exactly similar between the two ratios. We are forecasting an ROE around 10% over the next five years.

In years where ROE increased substantially from one year to the next (specifically from 2014 to 2015), the equity multiplier decreased. This is a favorable indication because ROE can be artificially elevated using debt, but lower equity multipliers show this is not the case. ANDV has maintained historical equity multipliers consistently over 2.00. The equity multiplier gives stockholders information about the financial leverage of the company. With a substantial amount of financial leverage, changing interest rates affect ANDV's financial risk and stockholders' RRR.

Total asset turnover, until 2015, was consistently over 2.0. We predict that total asset turnover will stabilize around and average of 1.41. This decrease in total asset turnover is potentially worrisome, as it means Andeavor is unable to use their assets to generate sales as efficiently as they have in the past. However, there are synergies of various acquisitions, most notably the Western Refining acquisition, that have not yet been realized and have the potential to raise total asset turnover once fully realized in 2022.

The last ratio is the profit margin. The Great Recession in 2008 significantly lowered profit margins. As the economy recovered, Andeavor's margins were slow to gain: the company did not have a profit margin above 2.5% until 2015 when the margin was 5.36%. The Torrance refinery explosion was a catalyst for higher profit margins at Andeavor. Profit margins are slowly lowering again to a forecasted percent around 3.15% over the next five years.

Appendix 7: Financial Ratios

		Historical								Future				
	Formulas	2010	2011	2012	2013	2014	2015	2016	2017E	2018F	2019F	2020F	2021F	2022F
Liquidity Ratios														
Quick Ratio	(Current Assets - Inventories)/Current Liabilities	0.67x	0.73x	1.14x	0.81x	0.76x	0.79x	1.34x	0.88x	0.92x	0.94x	0.94x	0.88x	0.80x
Current Ratio	Current Assets/Current Liabilities	1.17x	1.28x	1.61x	1.56x	1.46x	1.70x	2.09x	1.85x	1.69x	1.76x	1.73x	1.64x	1.53x
Profitability Ratios														
EBITDA Margin	EBITDA/Total Revenue	(0.12%)	3.50%	4.80%	1.81%	3.60%	9.16%	5.19%	5.20%	4.72%	4.93%	5.02%	5.19%	5.31%
Net Profit Margin	(Net Income/Total Sales)*100	(0.14%)	2.01%	2.49%	1.10%	2.07%	5.36%	2.99%	5.01%	3.13%	3.19%	3.15%	3.17%	3.14%
Gross Profit Margin	(Sales-COGS)/Sales	11.33%	11.63%	12.63%	9.35%	12.38%	23.63%	20.03%	20.60%	17.90%	18.90%	19.50%	19.90%	20.00%
ROE	Net Income/Shareholders Equity	(0.90%)	13.73%	15.69%	7.51%	12.08%	19.90%	9.03%	12.99%	9.90%	9.92%	9.81%	10.00%	10.13%
ROA	Net Income/Total Assets	(0.33%)	5.52%	6.94%	3.08%	5.08%	9.43%	3.60%	5.98%	4.41%	4.41%	4.33%	4.43%	4.57%
Financial Leverage														
Debt to Assets	Long Term Debt/Total Assets	0.21x	0.06x	0.15x	0.21x	0.26x	0.25x	0.32x	0.31x	0.30x	0.30x	0.30x	0.27x	0.25x
Debt to Shareholders Equity	Long Term Debt/Total Shareholders Equity	0.57x	0.14x	0.33x	0.51x	0.61x	0.53x	0.80x	0.68x	0.68x	0.69x	0.67x	0.62x	0.54x
Debt to EBITDA	Debt/EBITDA	4.64x	0.42x	0.86x	2.41x	2.10x	1.20x	3.04x	3.22x	2.86x	2.79x	2.64x	2.34x	1.98x
Interest Coverage	EBITDA/Interest Expense	2.50x	5.50x	7.91x	6.11x	6.29x	11.29x	6.21x	7.89x	7.34x	7.45x	7.72x	8.49x	9.77x
Operating Cash Flow	Cash From from Operations/Current Liabilities	0.15x	0.21x	0.55x	0.25x	0.39x	0.84x	0.37x	0.40x	0.41x	0.42x	0.47x	0.45x	0.46x
Equity Multiplier	Assets/Shareholders Equity	2.72x	2.49x	2.26x	2.44x	2.38x	2.11x	2.51x	2.17x	2.24x	2.25x	2.27x	2.26x	2.22x
Cash Flow/EBITDA	Cash From from Operations/EBITDA	0.97x	0.51x	0.86x	0.73x	0.67x	0.63x	0.61x	0.57x	0.64x	0.63x	0.73x	0.73x	0.77x
Cash Flow/CapEx	Cash From from Operations/CapEX	1.30x	2.31x	3.0x	1.51x	1.99x	2.07x	1.46x	1.28x	1.85x	2.16x	2.67x	2.74x	3.17x
Cash Flow Margin	(Cash Flow from Operations/Net Sales)*100	1.87x	2.535x	5.32x	2.28x	3.36x	7.42x	5.30x	4.66x	4.78x	4.98x	5.94x	6.14x	6.56x
Asset Management Ratios														
Total Asset Turnover	Sales/Total Assets	2.36x	2.75x	2.79x	2.81x	2.45x	1.76x	1.21x	1.19x	1.41x	1.38x	1.38x	1.40x	1.46x
Inventory Turnover	COGS/Inventory	14.52x	13.63x	19.47x	13.29x	14.60x	9.53x	7.45x	7.02x	9.09x	8.33x	8.00x	7.69x	7.69x
EBITDA/CapEx	EBITDA/Capital Expenses	1.34x	4.51x	3.49x	2.05x	2.96x	3.29x	2.38x	2.23x	2.91x	3.42x	3.65x	3.73x	4.12x
Receivables Turnover	Sales/Accounts Recievable	22.67x	21.37x	26.47x	28.64x	28.32x	36.25x	22.19x	23.81x	25.77x	25.77x	25.77x	25.77x	25.77x
Valuation Ratios														
Enterprise Multiple	EV/EBITDA	-	-	2.75x	6.47x	5.52x	4.02x	5.60x	10.80x	-	-	-	-	-
Price/Cash Flow	Price/Cash Flow	-	-	0.05x	-0.13x	-0.3x	-1.62x	0.03x	-0.1x	-	-	-	-	-

Appendix 8: DCF & Assumptions

DCF Assumptions		
Current Risk-free Rate	2.91%	30- year Constant Maturity Rate
Beta	1.19	Team projections
Historican Market Return	9.65%	Annual returns on S&P 500 stocks 1928-Current. Damodaran. Geometric mean.
Long-Term Growth Rate	1.65%	Weighted percentage of growth for each segment
Cost of Debt	4.82%	Interest and financing payments (374)/average debt for 2017(7766)
Tax Rate	22.04%	Historical average of 36.04 less the 14% tax cut bill
Weight of Equity	52.73%	Marketcap/marketcap+debt
Weight of Debt	47.27%	Debt/marketcap+debt
WACC	7.54%	(RRR*Weight of equity)+(Weight of debt((CoD*(1-Tax rate)))

Forecast	2018F	2019F	2020F	20121F	2022F	Terminal
Net Operating cash Flow	$ 2,073	$ 2,254	$ 2,684	$ 2,875	$ 3,263	
Add: Interest Expense* (1-Tax rate)	300	314	320	312	291	
Exclude: Capital Expenditure	(1,125)	(1,015)	(1,005)	(1,055)	(1,025)	
FCFF	**1,248**	**1,553**	**1,998**	**2,132**	**2,529**	**43,643**
Add: Net Borrowing	268	70	76	139	138	
Exclude: Interest Expense	(385)	(402)	(410)	(401)	(373)	
FCFE	**1,132**	**1,220**	**1,665**	**1,871**	**2,295**	**25,132**
NPV FCFE	**$ 1,020**	**$ 992**	**$ 1,219**	**$ 1,236**	**$ 1,366**	**$ 14,961**

Required Rate of Return	10.93%
[RFR+β*(Rmarket-RFR)]	
NPV FCFE 2018	$ 1,020
NPV FCFE 2019	$ 992
NPV FCFE 2020	$ 1,219
NPV FCFE 2021	$ 1,236
NPV FCFE 2022	$ 1,366
NPV Terminal	$ 14,961
Total	**$ 20,794**
Shares Outstanding	157.32
Intrinsic Value FCFE	**$ 132.18**
Closing Price (1/29/18)	**$ 110.76**

Appendix 9: Dividend Discount Model

Year			Dividend
2011	D1	=	$ -
2012	D2	=	$ 0.27
2013	D3	=	$ 0.90
2014	D4	=	$ 1.10
2015	D5	=	$ 1.85
2016	D6	=	$ 2.10
2017	D7	=	$ 2.28
Year			**Dividend**
2018	D8	=	$ 3.28
2019	D9	=	$ 3.93
2020	D10	=	$ 4.59
2021	D11	=	$ 5.12
2022	D12	=	$ 5.76
Target Price		**=**	**$ 132.83**
Value		**=**	**$ 95.40**

Appendix 10: Beta Analysis

We compared Andeavor's beta to two indexes: the S&P 500 and the NYSE Arca Oil Index. The S&P 500 compares Andeavor to the overall market and the NYSE Arca Oil Index measures the performance of the oil industry. Our raw beta was calculated using Andeavor's 3 years daily stock price compared to the 3 year daily value of the S&P 500 Index. We then adjusted the beta by weighting raw beta using the formula: Adjusted Beta = ((Raw Beta*(2/3))+(1*(1/3))). Using the S&P 500 as the base level, we found that Andeavor is more risky than the overall market.
The NYSE Arca Oil Index compares Andeavor to its specific industry which includes upstream, midstream, downstream and integrated oil companies. We used the same calculation method on the NYSE Arca Oil Index, but when comparing Andeavor to its industry we found that Andeavor is less risky than its industry which reflects their positive competitive positioning within the industry. We calculated the betas for our 3 competitors based on the S&P 500. Both Phillips 66 and Valero, have slightly lower adjusted betas than Andeavor, but Marathon Petroleum has a higher beta of 1.39 because they more dependent on their processing and gathering midstream segment which is related to WTI.

Beta Analysis of ANDV

Adjusted Beta = ((Raw Beta*(2/3))+(1*(1/3)))

1.29	3Y S&P Daily Raw Beta
1.19	3Y Daily Adjusted Beta
0.71	3Y Daily NYSE Arca Oil Index (XOI)
0.81	3Y Daily Adjusted Beta

Peer Beta Comparison

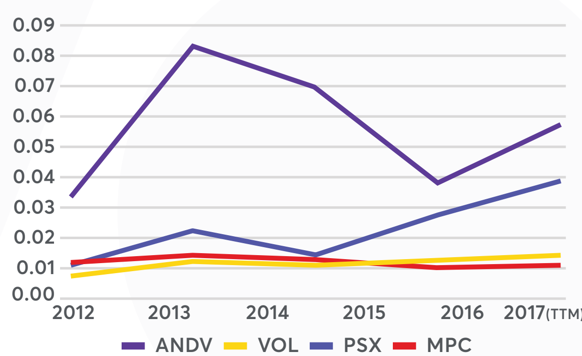
1.21	VLO 3Y Daily Raw Beta
1.14	VLO 3Y Daily Adjusted Beta
1.58	MPC 3Y Daily NYSE Arca Oil Index (XOI)
1.39	MPC 3Y Daily Adjusted Beta
1.24	PSX 3Y Daily Adjusted Beta
1.16	PSX 3Y Daily Adjusted Beta

Appendix 11: Relative Valuation

Along with EV/EBITDA, we calculated the intrinsic value using the Price/Operating Cash Flow ratio. This metric leads to an intrinsic value of $140.83 which is a 27.15% discount to the January 29th stock price.

Price/Operating Cash Flow	
Peer Average P/OCF	0.02
Historic ANDV Premium (4 Years)	287%
ANDV Normal P/OCF	0.0774
ANDV Current P/OCF	**0.06**
Premium P/OCF	27.15%
Current Trading Price (01/29/18)	110.76
Intrinsic Value	**$ 140.83**

Price To Cash Flow

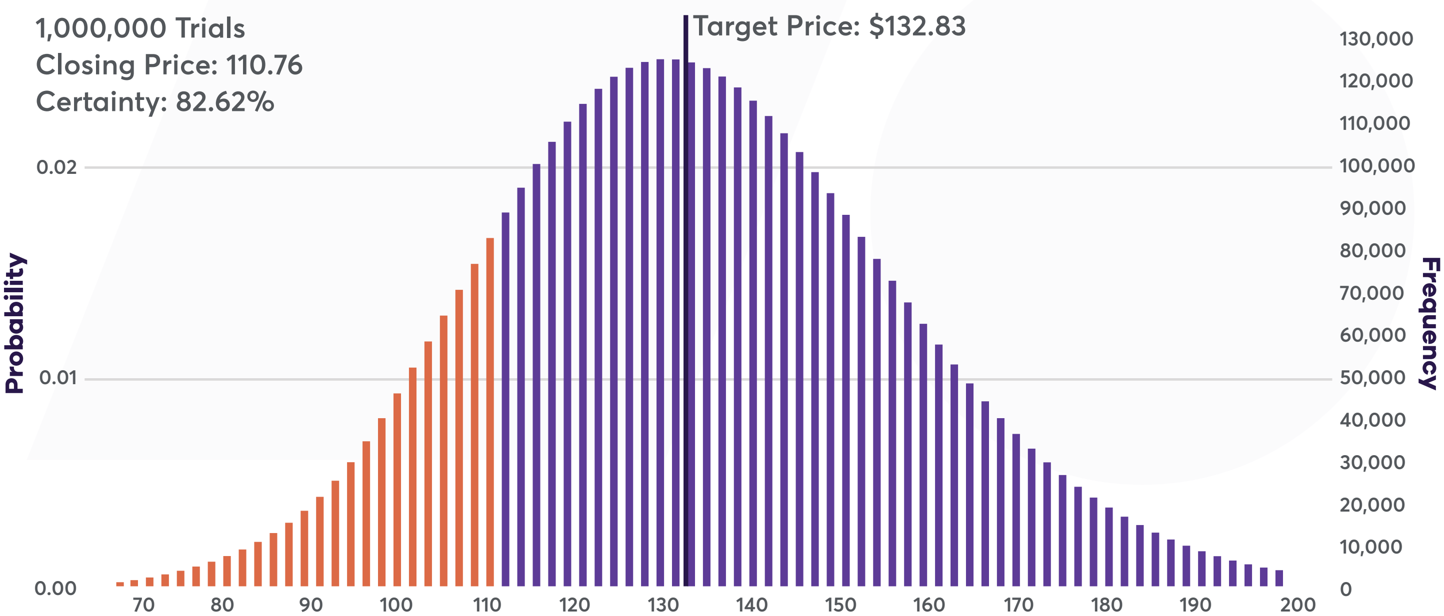


Source: Company Data, Team Analysis

Appendix 12: Monte Carlo

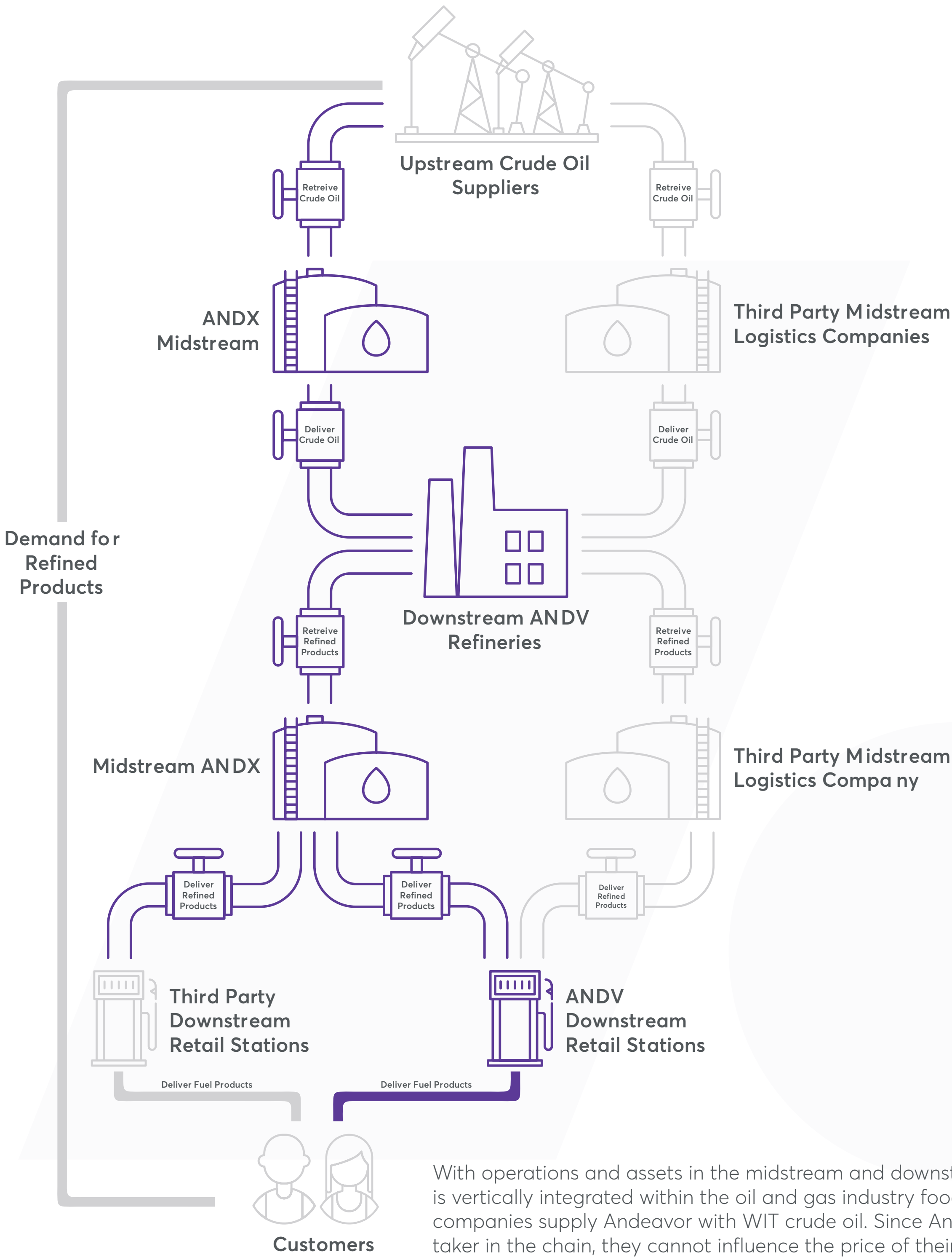
The Monte Carlo model is used to run many iterations with many different outcomes. The model is able to generate random numbers based on the mean and the standard deviation that is given and there by create a target price based on those inputs. This requires all the statements to be integrated so that an input in the very beginning will make a change if needed in the free cash flow and thereby impact the target price. Each outcome is considered an iteration and we were able to run 1,000,000 iterations, which enables us to get a good bell curve showing the probability of the different target prices. Our Monte Carlo accounted for three internal variables and three external variables: Number of convenience stores, refining capacity, logistics revenue, long term growth, required rate of return, and oil prices. In order for the Monte Carlo to account for all of these variables, they have to be set as percentages with a mean and a standard deviation for each variable. Each variable to the right has a calculated mean based on projections from various management and the market. The standard deviation has been manually calculated and applied. We used the target price from the Discounted Cash flow as our watch cell and based our calculations from that. With 6 variables, the target price has the ability to swing a lot, which is why there is a small low number and a large high number. The results show that 82.62% of the iterations are above the closing price of $110.76. The mean is higher than the base case, while the median is lower than the base case. This can be seen in the visual of the model, that there are frequent iterations that are in the outer right side of the model. This Monte Carlo further strengthens out BUY recommendation.

Monte Carlo Variables	Mean	Standard deviation
Oil Price	-3.46%	2.00%
# stations	7.80%	2.00%
Refinery Capacity	2.50%	1.50%
Logistics revenue	20%	8.00%
Long term growth rate	1.65%	0.50%
Required rate of return	10.93%	1.50%



Source: Company Data, Team Analysis

Appendix 13: Supply Chain



With operations and assets in the midstream and downstream sectors, Andeavor is vertically integrated within the oil and gas industry food supply chain. Upstream companies supply Andeavor with WIT crude oil. Since Andeavor is a crude oil price taker in the chain, they cannot influence the price of their inputs. However, since they do not operate in the upstream sector, Andeavor does not assume the high risk that comes with exploration and production.

After extraction, the crude must then be gathered and transported to a refinery by a midstream logistics. Andeavor meets the demand for crude oil and natural gas gathering, processing, terminalling and transportation through ANDX. Of the three sectors, the midstream sector is the most stable because its revenue comes from fixed fee based operations. Growth in the logistics segment is key to ANDV's value chain strategy because it gives them greater access to feedstocks and product channels.

Andeavor's downstream refining segment is supplied with crude gathered by ANDX and other midstream logistics companies. The refining segment then turns around and sells its refined products to downstream retail stations who supply fuel demanded by customers. Again ANDX comes into play as an intermediate between refining and marketing. Andeavor's downstream marketing segment sells fuel through unbranded and branded channels.

Appendix 14: Major Players

Major Competitors

Rather than comparing Andeavor to companies with similar market cap, our team used competitors that have similar operational structures. The competitors within the industry that share characteristics with Andeavor have much larger market caps. Additionally, while there are multiple companies in the industry that are poised to benefit from general economic improvements, we still believe that Andeavor is in good position to grow market share while also increasing shareholder value based on their strategic locations, optimized value chain, and Mexican exclusivity.

Exxon Mobil

Exxon Mobil, headquartered in Irving, Texas, is the dominant player in the industry. Exxon was excluded from peer analysis because it is significantly larger than any other other competitors. Exxon is the market leader with 17.4% of the market share. Exxon is a fully integrated company with a completely optimized value chain due to the fact that they control upstream, midstream, and downstream industry segments. The company is the largest global refiner of feedstocks and crude oil, creating fuels, lubricants, and other refined products. They own and operate 22 refineries globally with production capacity of 4.9mbpd. The company also further diversifies by concentrating on operations in chemical, natural gas, power marketing, heavy oil, deep-water projects, and NGLs. We included Exxon Mobil as a major competitor simply because they capture such a large portion of the market. Exxon has significant market power, an optimized value chain, and a well diversified portfolio; therefore, they pose a threat to a smaller company like Andeavor. As Andeavor continues to grow and acquire however, they also threaten Exxon's market share.

Valero Energy Company

Valero Energy Company is headquartered in San Antonio, Texas, and they have a operational structure to Andeavor. Valero concentrates on refining low-priced oil that can be converted to finished products. The company holds a 13.3% market share, and they own 15 petroleum refineries with 3.1mbpd capacity. The refining operations include both the marketing and logistics of the company. The company sells their refined petroleum products in bulk markets and wholesale racks. Valero also focuses on ethanol operations with 11 plants through their subsidiaries. The ethanol is then sold to gasoline blenders in bulk markets and to refiners, which provides them with a unique competitive advantage.

Marathon Petroleum Corporation

Marathon holds a 12.6% market share, and they operate refining, marketing and logistics segments similar to Andeavor. Marathon is one of the largest refiners in the U.S even with only six refineries. They have approximately 1.9mbpd capacity. The refineries of Marathon Petroleum Corporation are integrated with each other through a midstream logistics segment of terminals, pipelines, and barges. MPLX, Marathon's logistics MLP, benefits their value chain by collecting, developing and transporting petroleum based products. Speedway LLC is a spin-off of Marathon Petroleum Corporation which is how they operate their marketing segment and convenience stores operations. Speedway has roughly 2,730 convenience stores that sale gasoline and various convenience items. The company also owns 29% interest in the Pilot Flying J Southeast LLC. Marathon is very dependent on the gathering and processing segments of their MLP, MPLX, which makes them heavily reliant on upstream drilling.

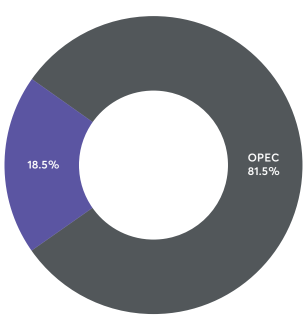
Phillips 66 Company

Phillips 66 works in four primary segments: refining, midstream, marketing, and chemicals. Phillips 66 operates 13 refineries that have a capacity of 2.2mbpd which nets them a 11% market share. Phillips 66 owns subsidiaries such as Phillips 66 pipeline and DCP Midstream in order to operate the transportation and storage of crude oil, NGL, feedstocks, and other petroleum based products.

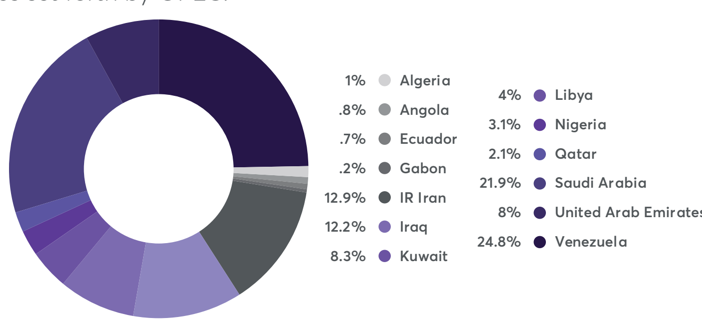
Appendix 15: OPEC

The Organization of Petroleum Exporting Countries is a global cartel that seeks to maintain control over oil prices in order to mitigate the volatility of oil, while ensuring member countries benefit. OPEC controls 81.5% of the world's oil reserves. This accounts for 1216 billion barrels of crude oil. Because of this, petroleum companies all across the world, including Andeavor, must be in tune to OPEC's policies. As mentioned, Andeavor is a price taker of the price of oil, so any price controls set by OPEC greatly affect them. In the 1970's OPEC had almost complete control of the price of crude oil. Today, their power is still present, but it has limitations. In 2015, when the US approved the "Consolidated Appropriations Act," which removed the US embargo on US crude oil exports, OPEC power diminished because of market competition spurred by the WTI discount over Brent Crude. Russia is also an exporter of crude oil, which is another limiting factor of OPEC power. Still, price controls and policies set by OPEC can still affect oil prices worldwide; therefore, Andeavor has to be attuned to the decisions and policies set forth by OPEC.

World Oil Suppliers



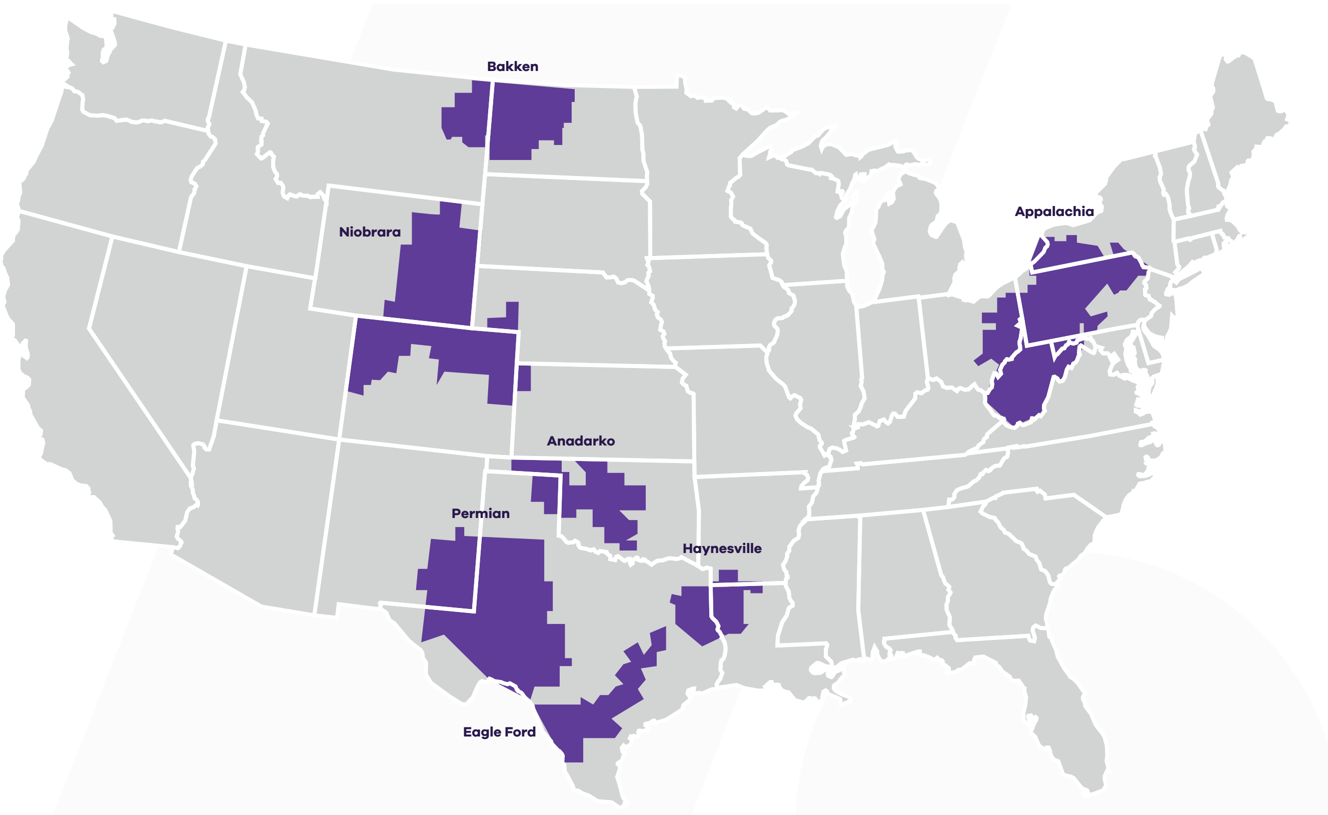
OPEC Oil Suppliers



Source: Opec, Team Design

Appendix 16: The U.S. Shale Revolution

Although Andeavor does not operate in the upstream segment of the oil and gas industry it is imperative to mention the U.S. Shale Revolution. Shale production for many years was underutilized due to the financial burdens that would be put on an upstream company. The production of shale is drilled from tight oil formations. These formations for many years were difficult to break through. Technology has advanced the methods of hydraulic fracturing and horizontal drilling, therefore, creating an innovation in the industry. Production of oil and gas has significantly increased because of shale methods. The United States has capitalized on shale production which has taken the Middle East away from leading the oil and gas production. Petroleum imports have continually dropped and shale production has the potential make the U.S. independent to foreign markets.



Region	Oil production (thousand barrels/day) January 2018	February 2018	change	Gas production (million cubic feet/day) January 2018	February 2018	change
Anadarko	488	491	3	6,141	6,130	(11)
Appalachia	113	116	3	26,401	26,778	377
Bakken	1,207	1,215	8	2,142	2,170	28
Eagle Ford	1,242	1,257	15	6,396	6,442	46
Haynesville	44	44	-	7,676	7,874	198
Niobrara	550	556	6	4,840	4,883	43
Permian	2,794	2,870	76	9,585	9,794	209
Total	6,438	6,549	111	63,181	64,071	890

Source: EIA

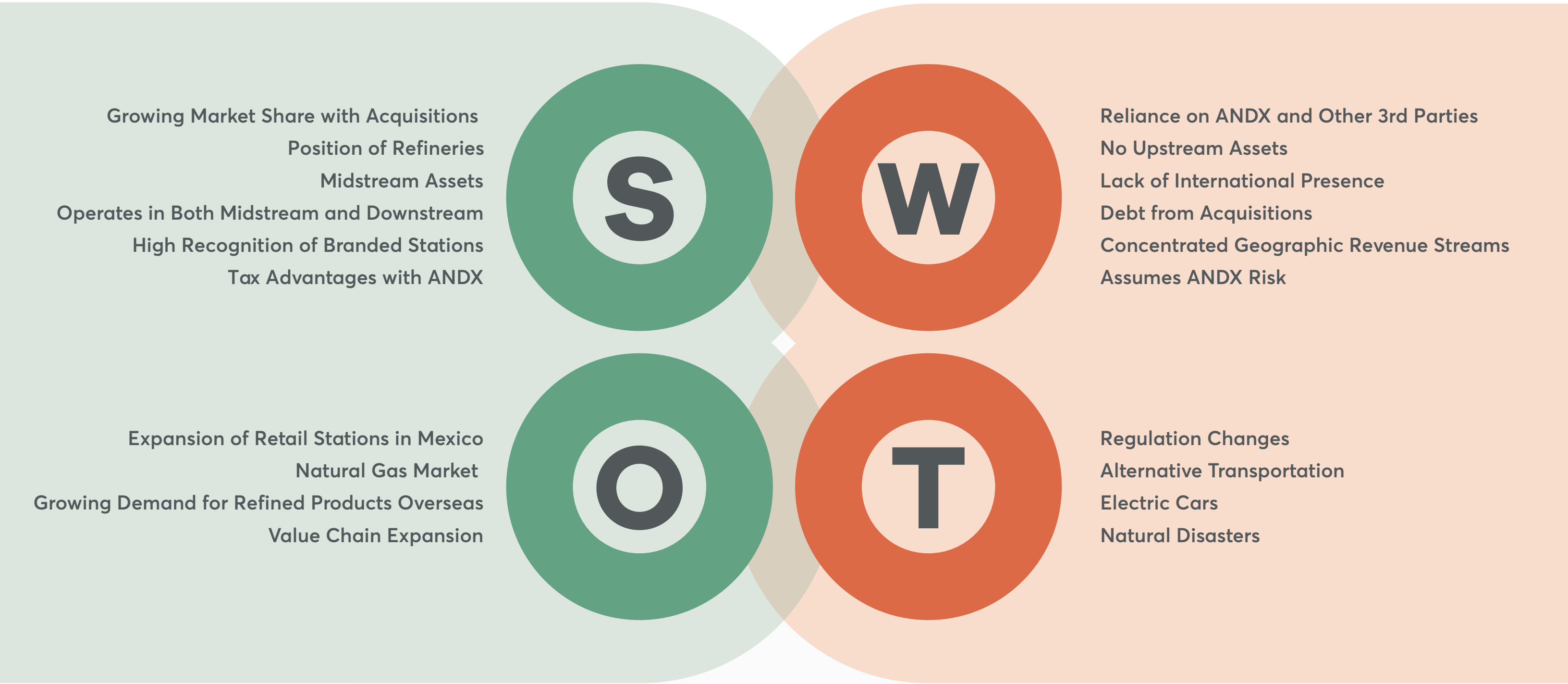
Appendix 17: Refining Process

Oil is composed of microscopic plants and animals that died and sank to the bottom of the ocean millions of years ago. Petroleum engineers, geologists, and geophysicists work together to locate reservoirs below the earth's surface. Once found, drilling sites are created to extract crude oil in a complex process. When oil has been tapped, the next step is to make a well and extract the oil. Extracted oil is then transported to a refinery to begin a three-step process:

1. Separation - Oil is made of hydrocarbons, and the first step in the refining process is to break down hydrocarbons to create different petroleum products. Boiling hydrocarbons separates the molecules and turning the oil into a vapor. The liquids and vapors produced by this process are placed into distillation units. Inside these units, the liquids and vapors separate according to weight and boiling point. Heavy liquids, called gas oils, settle in the bottom of the distillation unit. Medium liquids such as kerosene and diesel stay in the middle of the unit while light liquids like gasoline and liquid petroleum rise to the top.
2. Conversion - After distillation, a method called cracking breaks heavy hydrocarbon molecules into lighter ones. This process increases refining yield by creating higher value light products like gasoline. In order to further increase refining yield, the alkylation process combines gaseous cracking byproducts. One more conversion method is reforming, which uses additional heat to create higher-octane gasoline.
3. Treatment - The treatment step in the refining process involves the finishing touches. Blending involves mixing high-grade and low-grade products to minimize costs and use the least amount of high-grade products. Finished products are also treated, which reduces impurities from the refined products.

After the refined products are produced, they are distributed through midstream channels to end consumers.

Appendix 18: SWOT



Strengths

Andeavor has established its position in both the Downstream and Midstream segments through strategic acquisitions in both the Permian Basin and Bakken Formation regions. These strategic acquisitions, coupled with integrated Midstream and Downstream operations, give Andeavor a favorable position in the food chain. In addition, Andeavor also has recognizable brand portfolio in their Marketing segment, taking advantage of brands such as ARCO, Shell, Exxon and Mobil. Branded stations enable Andeavor to take advantage of higher margins.

Weaknesses

Andeavor's "Keep Whole Agreement" with ANDX means Andeavor has committed to meet volume minimums. Regardless of whether or not minimums are met, Andeavor still must pay to keep pipelines at capacity. Inaccurate calculation of volume minimums could negatively impact cash flow. Also, Andeavor does not supply its own crude oil; rather, it purchases oil from a combination of domestic and foreign sources. Although Andeavor's refineries are concentrated in specific geographic areas, they lack a presence on the Gulf of Mexico, which could put them at a disadvantage against competitors such as Marathon Oil that do have positions on the Gulf. With the numerous acquisitions in the past 5 years, Andeavor has also taken on a substantial amount of debt which increases their financial risk.

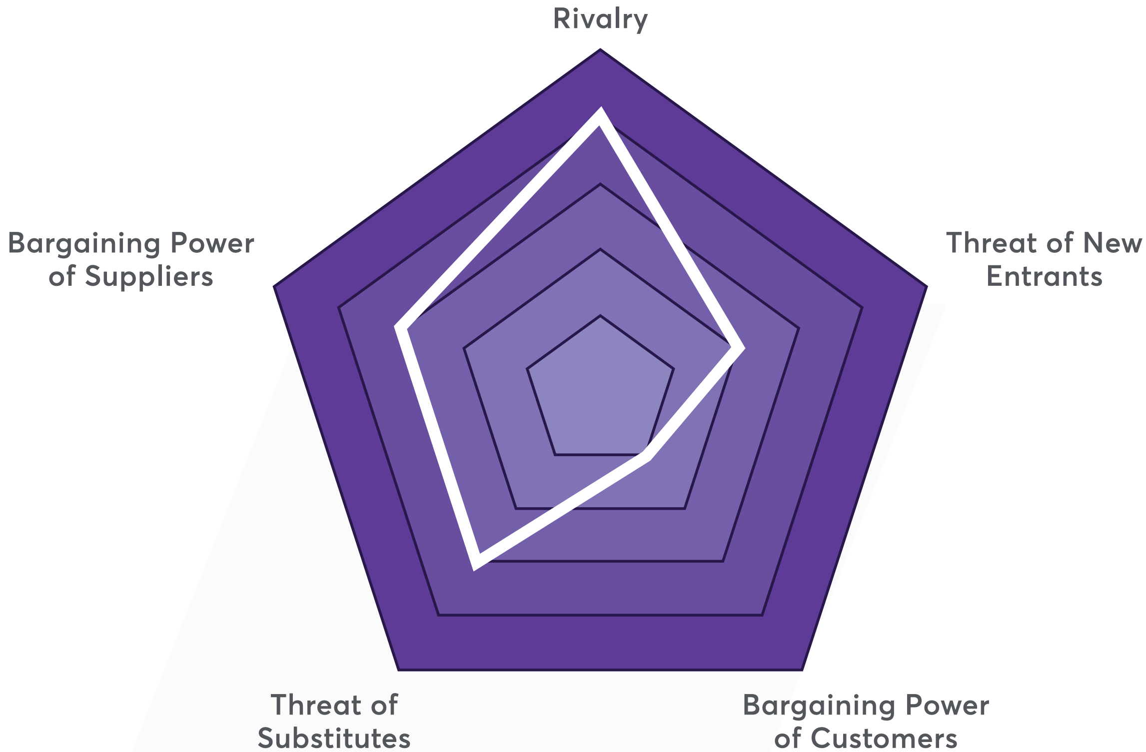
Opportunities

In mid July, Andeavor announced they plan to begin operations in Mexico after winning a major pipline contract with Petroleos Mexicano (Pemex) giving them access to supply transportation fuels in Sonora and Baja California. This will enable Andeavor to further integrate their West Coast value chain into Northern Mexico. With stable domestic consumption of natural gas, the natural gas industry is another area that Andeavor could potentially expand into since they already have natural gas gathering and processing assets. Petroleum exports to countries such as China have shown strong growth in recent years which could be an emerging market opportunity.

Threats

The energy sector faces many threats due to regulation. With the IMO 2020 Sulfur cap, Andeavor may need to make changes to adjust to the demand for low sulphur fuel oil. Also, with their extensive operations in California, Andeavor must continually ensure they are keeping up to date on changing environmental regulations. Developers of electric and self driving cars are developing technologies in hopes to making alternative vehicles more viable alternatives. If these goals are achieved, electric cars could pose a significant threat to Andeavor. Finally, natural disasters such as earthquakes could disrupt operations at their refineries.

Appendix 19: Porter's Five Forces



Source: Team Analysis

Threat of New Entrants: Low (2)

Barriers to entry in the oil refining industry are high which prevents new companies from starting up and establishing themselves in the current market. New entrants would require large capital expenditures in order to establish crude oil and refined product storage facilities, transportation/logistics systems, refineries. Higher financing requirements have also made entering the industry more unobtainable. Moreover, the industry is in the mature phase and has volatile growth. The oil industry is also highly regulated by environmental agencies. Finally, competition is intense, which adds even more barriers to entry.

Bargaining Power of Customers: Very Low (1)

The end consumers of petroleum based products have very little bargaining power. In fact, the end consumer has practically zero bargaining power when purchasing gasoline and oil products. The end price that the consumer pays for finished products is dependent on global economic factors that affect the supply and demand of crude oil. If there is a surplus of crude oil, the end consumer benefits from lower prices. If there is a shortage, the end consumer is forced into paying a premium for finished products. Furthermore, there are relatively few switching options: switching to non-petroleum products can be very costly, and there are few alternatives.

Bargaining Power of Suppliers: Moderate (3)

Upstream suppliers have a modest amount of power over the industry. Downstream petroleum refiners are bound to prices that suppliers give unless they themselves are able to supply the crude oil. Upstream operators have some level of discretion over the price of crude oil based upon current economic factors. Regardless of whether or not prices are at premiums or discounts, midstream and downstream petroleum companies must continue purchasing in order to operate. Downstream companies such as Andeavor are able to pass premium prices on to end consumers, which somewhat lessons the power that upstream suppliers have over Andeavor.

Threat of Substitute Products: Moderate (3)

Alternatives to petroleum-based fuels are numerous, but they are currently not as efficient as petroleum-based fuels. Alternative energy production methods include: nuclear, fossil fuels, hydroelectricity, solar, and wind energy. An alternative transportation method that is gaining prominence is electric-powered vehicles. As electric vehicle technology improves, the demand for electric vehicles will increase, shifting the demand for traditional motor vehicles inwards. Finally, as today's consumer becomes more environmentally conscious, there will be a reduction in the demand for petroleum products in favor of more sustainable alternatives.

Competitive Rivalry within the Industry: High (4)

Competition within the industry is intense among both domestic and international firms. The price of crude oil has strong implications because end consumers will typically look for the most inexpensive product. This causes petroleum industries to purchase the least expensive crude oil in order to maximize crack spread. Competitors will also purchase various qualities of crude oil in order to lower costs, as refineries can be converted to be capable of refining a wide variety of oil types. External competition is also a threat to the industry, and it is expected to increase. The dollar is expected to appreciate, which nets Andeavor an advantage in being able to import foreign oil relatively cheaper.

Appendix 20: Z-Score

The Altman Z-Score was developed by NYU Stern Finance Professor Edward Altman to evaluate a company's credit risk using several financial ratios.

Z-scores below 1.8 indicate that the company has a high probability of going bankrupt, but Z-scores around 3.0 indicates that the compnay is unlikely to go bankrupt. The formula for the Z-score is Z-Score = $1.2X_1 + 1.4X_2 + 3.3X_3 + 0.60X_4 + 1.0X_5$.

Over the past 5, the company has maintained a Z-score above 1.8. The calculated Altman Z-Score using Andeavor's projected 2017 data is 2.6. This is substantially above the likely bankruptcy indicator of 1.8. This means that Andeavor has a low probability of going bankrupt.

Imput Variables	**2013**	**2014**	**2015**	**2016**	**2017E**
Current Assets	5,326	5,074	4,307	7,414	8125
Current Liabilities	3,408	3,466	2,530	3,554	4047
Total Assets	13,389	16,584	16,332	20,398	28938
Total Liabilities	7,904	9,608	8,592	12,271	16402
Retained Earnings	3,940	4,642	5,954	6,437	6991.32
Revenues	37,601	40,633	28,711	24,582	34588
Operating Income	755	1,632	2,827	1,481	2077
Market Capitalization $ Mil	7711	9291	12580	10223	17801
Working Capital $ Mil	1,918	1,608	1,777	3,860	4078
EBITDA	1321	2194	3583	2332	2131

Derived Variables	**2013**	**2014**	**2015**	**2016**	**2017E**
X_1 Working Capital / Total Assets	0.14	0.10	0.11	0.19	0.14
X_2 Retained Earnings / Total Assets	0.29	0.28	0.36	0.32	0.24
X_3 EBIT / Total Assets	0.10	0.13	0.22	0.11	0.07
X_4 Market Capitalization / Total Liabilities	0.98	0.97	1.46	0.83	1.09
X_5 Revenue / Total Assets	2.81	2.45	1.76	1.21	1.20
Total Altman Z-Score	**4.30**	**3.98**	**4.00**	**2.75**	**2.60**

Appendix 21: M-Score

To better understand the ANDV's financials, the team utilized the Beneish M- Score to authenticate if ANDV possibly manipulates their earnings. The Beneish Model is made of eight different variables that are made up from a company's annual report. To understand the M-Score, a score that is greater than -2.22 gives a signal that the company is likely to be a manipulator. If the M-Score is less than -2.22 then the company is unlikely to be a manipulator.

M-Score Formula:
M Score = -4.840 + 0.920 x DSRI + 0.528 x GMI + 0.404 x AQ + 0.892 x SGI + 0.115 x DEPI - 0.172 x SGAI - 0.327 x LVGI + 4.697 x TATA
After calculating the Beneish M-Score it has been determined that Andeavor does not show signs of manipulation in the past few years.

Source: Andeavor Annual Reports and Team Analysis

Input Variables	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Net Sales	29809	37601	40633	28711	24582	34588
Cost of Goods Sold	26045	34085	35603	21928	19658	27525
Net Receivables	1126	1313	1435	792	1108	1342
Current Assets	4636	5326	5074	4307	7414	12393
Property Plant and Equipment	7206	9123	11633	12562	13472	18542
Depreciation	1974	2248	2588	3021	3496	4517
Total Assets	10702	13389	16584	16332	20398	32930
SGA Expenses	297	337	346	386	401	723
Net Income	**743**	**412**	**843**	**1540**	**734**	**1110**
Income from Continuing Operations	903	434	917	1694	850	1110
Cash Flow from Operations	1585	859	1364	2131	1304	1187
Current Liabilities	2881	3408	3466	2530	3554	4047
Long-Term Debt	1585	2823	4254	4067	6468	9063
Working Capital-Cash-Depreciation	(1140)	(1060)	(123)	(537)	(488)	1995

M Score Variables	**2013**	**2014**	**2015**	**2016**	**2017**
DSRI= Day's Sales Receivables Index	0.924	1.011	0.781	1.634	0.861
GMI=Gross Margin Index	1.350	0.755	0.524	1.179	0.981
AQI= Asset Quality Index	0.743	0.100	4.090	0.728	0.100
SGI= Sales Growth Index	1.261	1.081	0.707	0.856	1.407
DEPI= Depreciation Index	1.088	1.086	0.939	0.941	1.052
SGAI= SGA expenses Index	0.900	0.950	1.579	1.213	1.281
LVGI= Leverage Index	1.115	1.000	0.868	1.216	0.810
Total Accruals/Total Assets	-0.032	-0.027	-0.036	-0.028	-0.002
M-Score 8 Variable Model	**-2.400**	**-2.998**	**-2.178**	**-2.286**	**-2.610**

Appendix 22: Governance & Board of Directors

Corporate Governance Assessment	Score	Weight	Calculation
1. Board Composition			
90% of the board of directors is considered independent based on an ISS global classification.	0.85		
0% of the directors are family members of majority shareholders, executives or former executives (within the past five years).	1.00		
2 woman/women serve(s) on the board of directors.	0.57		
The roles of Chairman and CEO have not been separated.	0.73		
45.45% of the non-executive directors on the board have been there for less than six years.	0.88		
Coporate Governance Totals	**4.03/5**	**25%**	**20.15%**
2. Compensation			
The CEO's total pay last year was 472.34% that of the next-highest-paid executive officer.	0.20		
All of the company's equity plans expressly forbid option repricing without shareholder approval.	0.92		
None of the company's active equity plans contain a liberal definition of a change in control.	0.89		
The basis for the CEO's golden parachute is Salary + Target Bonus.	0.63		
The company discloses complete information on the short-term cash incentive plan.	0.98		
Compesation Totals	**3.62/5**	**25%**	**18.10%**
3. Audit & Risk Oversight			
Non-audit fees represent 0.75% of total fees.	0.80		
Neither the company, nor any of its directors and officers, is currently under investigation by a regulatory body.	0.92		
A regulator has not taken action against a director or officer of the company in the past 2 yeaı	0.98		
The company released timely financial disclosure filings in the past 2 years.	0.96		
The company has not restated financials for any period within the past 2 years.	1.00		
Audit & Risk Oversight Totals	**4.66/5**	**25%**	**23.30%**
4. Shareholder Rights			
The company does not have a controlling shareholder.	0.91		
All directors are elected annually.	0.98		
Shareholders have a proxy access right.	0.97		
Shareholders do not have the right to call a special meeting.	0.37		
Mergers and other business combinations may be approved by a simple majority vote.	0.96		
Shareholder Rights Totals	**4.19/5**	**25%**	**20.95%**
Total Coporate Governance Assessment Score	**4.125/5**	**100%**	**82.50%**

Source: ISS Data, Team Calculations

To further asses Andeavor's corporate governance we used data from the Institutional Shareholder Services. A numerical scoring system was created to pinpoint strengths and weaknesses of Andeavor. Each category can earn a total of five points each with a weighted percentage of 25. The total percentage represents the level of risk that Andeavor holds to their shareholders.
0-20%: Extreme Threat
20%-40%: Significant Threat
40%-60%: Moderate Threat
60%-80%: Low Threat
80%-100%: Little to No Threat

Name and Principal Position	Year	Salary	Bonus	Stock Awards	Non-Equity Incentive Plan	Change in Pension Value	All Other	Total
Gregory J. Goff								
	2016	$ 1,600,000.00	-	$ 8,221,092.00	$ 3,635,200.00	$ 4,708,628.00	$ 14,769.00	$ 18,179,689.00
	2015	$ 1,590,000.00	-	$ 11,336,348.00	$ 4,074,232.00	$ 6,173,359.00	$ 80,615.00	$ 23,254,554.00
	2014	$ 1,495,000.00	-	$ 8,370,769.00	$ 4,854,692.00	$ 6,083,588.00	$ 51,500.00	$ 20,855,549.00
Steven M. Sterin								
	2016	$ 761,250.00	-	$ 1,667,835.00	$ 1,125,540.00	$ 234,770.00	$ 54,048.00	$ 3,843,443.00
	2015	$ 723,400.00	-	$ 1,983,996.00	$ 1,049,893.00	$ 139,744.00	$ 45,897.00	$ 3,942,930.00
	2014	$ 263,846.00	-	$ 1,566,401.00	$ 362,492.00	$ 27,870.00	$ 15,413.00	$ 2,236,022.00
Keith M. Casey								
	2016	$ 706,635.00	-	$ 1,667,835.00	$ 924,810.00	$ 246,779.00	$ 51,946.00	$ 3,598,005.00
	2015	$ 667,500.00	-	$ 1,983,996.00	$ 1,048,612.00	$ 211,504.00	$ 77,841.00	$ 3,989,453.00
	2014	$ 549,415.00	-	$ 1,117,499.00	$ 874,919.00	$ 100,857.00	$ 29,116.00	$ 2,671,806.00
Kim K.W. Rucker (g)								
	2016	$ 640,865.00	-	$ 1,252,848.00	$ 824,317.00	$ 34,594.00	$ 305,180.00	$ 3,057,804.00
Cynthia J. Warner								
	2016	$ 647,596.00	-	$ 1,083,110.00	$ 768,773.00	$ 218,539.00	$ 15,900.00	$ 2,733,918.00
	2015	$ 620,000.00	-	$ 1,498,580.00	$ 846,577.00	$ 114,494.00	$ 97,731.00	$ 3,177,382.00
	2014	$ 139,327.00	$ 340,000.00	$ 2,442,672.00	$ 166,308.00	$ 15,230.00	$ 24,131.00	$ 3,127,665.00

Appendix 23: Governance & Board of Directors

Gregory J. Goff

President and CEO for Andeavor; Chairman and CEO of Andeavor Logistics GP. LLC

Mr. Goff previously worked for ConocoPhillips as Senior VP, President of Specialty Business and several other leadership roles. Mr. Goff is also Chairman of the Board for the American Fuel and Petrochemical Manufacturers. He is a member of multiple councils and holds a B.S. and a M.B.A from the University of Utah.

Keith Casey

Executive VP of Commercial and Value Chain for Andeavor

Mr. Casey is the Executive VP of Operations of Andeavor Refining; marketing; Logistics and Environment, Health, Safety and Security groups. Prior to Andeavor Mr. Casey worked at BP products North America as VP. While at BP, he led operations in refining and a focus on business restoration and reputation. Mr. Casey has also worked for Motiva Enterprises, Praxair and Shell. He is an avid board member throughout his community and is in the Texas Labor Movement Hall of Fame. Mr. Casey has a B.S. in Metallurgical and Materials Engineering from California Polytechnic State University.

Michael J. Morrison

Senior VP of Marketing for Andeavor

Mr. Morrison previously worked for Global Crude Oil Trading Lead and Lead Executive for Philips66's London office. He also worked in positions such as marketing, strategy, commercial supply and trading logistics, optimization and specialty products at ConocoPhillips, Conoco, and Philips66. Mr. Morrison hold a Bachelors of Arts degree in Economics from DePauw and a M.B.A. from the University of Missouri.

Kim K.W. Rucker

Executive Vice President, General Counsel & Secretary Interim Head of HR for Andeavor

Ms. Rucker formerly worked for Kraft Foods Group, Inc. as the Executive VP, Corporate and Legal Affairs, General Counsel and Corporate Secretary. She also worked in senior executive positions for Avon Products, Inc. In New York and as a Partner in the Corporate and Securities group at Sidley Austin LLP in Chicago. Ms. Rucker holds positions as a Board of Director and in committees. Kim Rucker holds a B.B.A. in Economics, a Master's in Public Policy degree, and a Juris Doctorate degree from Harvard Law School.

Steven Sterin

Executive VP and CFO of Andeavor, President, CFO and Board of Directors for Andeavor Logistics

In Mr. Sterin's prior work he held positions at Reichhold, Inc. such as Director of Tax and Treasury, Global Treasurer and VP of Finance. Steven Sterin has also worked as Senior VP and CFO for Celanese Corporation, President of Celanese's Advanced Fuel Technologies business. Lastly, Mr. Sterin worked as Corporate Controller and Principal Accounting Officer. He earned a B.B.A. in Accounting, a Master of Professional Accounting degree and holds a CPA.

Cynthia (CJ) Warner

Executive VP, Operations for Andeavor

Recently, Ms. Warner worked for numerous global energy companies in executive leadership roles. She has held positions such as Group VP of Global Refining and Group VP of Health, Safety, Security, Environmental and Technology for BP; President, Chairman, and CEO at Sapphire energy; chemical engineer at UOP. Ms. Warner serves on boards and councils for corporations and universities. She holds a Bachelor of Engineering degree in Chemical Engineering from Vanderbilt University and a M.B.A. from the Illinois Institutes of Technology.

Nate Weeks

Senior VP, Strategy and & Business Development for Andeavor

Mr. Weeks was previously employed by BP P.L.C as Refinery CFO and as a Strategy & Business Improvement Manager. Other positions that he has held are leadership of procurement, sales, marketing and human resources. Mr. Weeks has also been employed by Environmental Science & Engineering, Inc. as a Human Resources Manager. He is an Andeavor Foundation Board of Directors and member of the Texas City Chamber of Commerce. Mr. Weeks earned a Bachelor of Arts degree in Business Administration from Saint Leo College and a M.B.A. from the Kellogg School of Management at Northwestern University.

Appendix 24: Technical Analysis

The Exponential Moving Average (EMA) was used for technical analysis because of its emphasis on recent stock prices. This gives the EMA a quicker reaction to price movements compared to other moving averages.

Stock Price Crossing EMA

Right before 2016, the stock price crossed under the long-term EMA. This indicates a negative reversal. One of the primary causes for the price dipping below the long-term EMA was low crude oil prices coupled with high crude oil supply. When the crude oil price began to rise again, the free fall ended, which brought the price back above the long-term EMA briefly in March 2016. The price did not rise above long-term EMA again until September of 2016 when Virent Inc., a Madison company that uses plant-based sugars to produce fuel and chemicals, agreed to be purhased by Andeavor. Shareholder uncertainty caused the price to float around the long-term EMA until it finally rose over the long-term EMA on June 7th, 2017 when the Western Refining acquisition closed. Since June, the stock price has continued to stay above long-term EMA largely because of how diversified the corporation is.

EMA Short-Term Crossing Long-Term

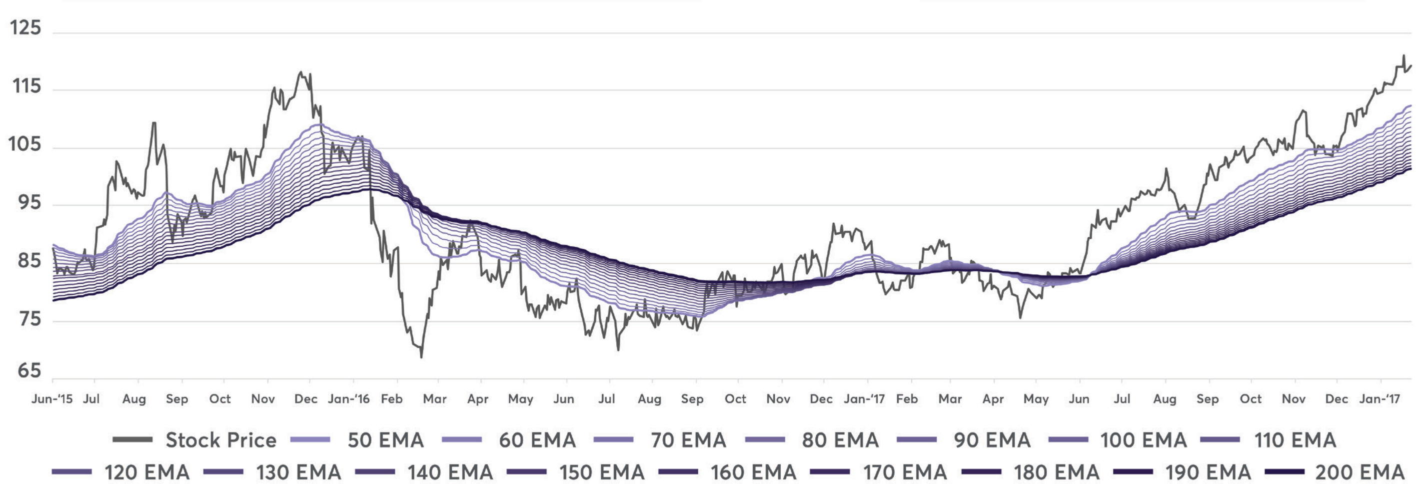
In February of 2016, the short-term EMA crossed under the long-term EMA due to Andeavor's stock price drop. This confirms the bearish trends of the oil industry throughout 2016. As the price fluctuated between September 2016 and June 2017, the short and long term EMA's crossed multiple times. The cross in November was caused by a high volume of positive trades due to the announcement of Western Refining acquisition. Contrastly, in March, a large amount of shareholders sold when the acquisition was approved. In June, when the merger finished, the short-term EMA crossed over the long-term EMA, confirming a reversal of the bearish trend and a movement towards a bullish trend.

Moving Average Ribbon

In October 2015, the EMA ribbon was parallel, which shows a strong bull trend. As supply for crude oil began to rise over 2015, the market hit an extreme, at which point it began to spread apart and then converge. The bearish trend of Andeavor's stock price from April 2016 to September 2016 was slowed by the Virent acquisition; however, the conversions during the uncertainty period was not broken until the Western Refining acquisition was completed. The current bull trend is indicative of the fact that Andeavor's recent acquisitions were wise strategic moves.

Resistance and Support Lines

After the stock price dropped right before 2016, Andeavor's stock traded between $90 and $70. Bullish trends caused demand to rise and the stock to break out on June 7th, 2017, so Andeavor's stock hit its next resistance line at $112 on November 6th, 2017. Another quick break out happened on December 27th, 2017.



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